State of Oregon
DEQ Department of Environmental Quality

Outstanding Resource Waters 2027

Written comments

These are written comments DEQ has received from advisory committee members after the second advisory committee meeting.

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Non-discrimination statement

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August 26, 2026

Aron Borok
Rulemaking Coordinator
Oregon Department of Environmental Quality, Water Quality Division
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Submitted via email

Re: Comments on the Draft Fiscal Impact Statement in Association with the Proposed Illinois River and Rough and Ready Creek Outstanding Resource Water Classification

Aron,

Thanks for the opportunity to review the Draft Fiscal Impact Statement (FIS) released in connection with Rulemaking Advisory Committee. I write on behalf of American Rivers both to support its central conclusions and to supplement the record with additional economic evidence that reinforces the case for adoption.

American Rivers has a direct and long-standing interest in this watershed. **ORW classification under Oregon's antidegradation policy does not preclude any economic activity while preserving existing economic benefits derived from the exceptional water quality that supports this region's fisheries, recreational economy, and drinking water supplies.**

The Draft FIS Correctly Concludes That the Proposed Rules Impose Minimal Cost While Preserving Substantial, Well-Documented Economic Benefits

American Rivers agrees with DEQ's determination that the proposed ORW designation will have little to no fiscal impact on industrial and commercial forest harvesting, on DEQ's own permitting workload, or on the public at large, because the designation locks in — rather than adds to — water quality conservation measures that are already being achieved through existing authorities. We likewise agree that the designation's principal effect is protective: it conserves the existing economic value associated with a healthy watershed, rather than creates, the economic value that clean water in these watersheds already generates.

The FIS's headline economic finding — that tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs (Visit Grants Pass, 2023) — is well supported and, if anything, understates the full regional economic case for designation. The Illinois River is the Rogue's largest tributary, and its wild, hatchery-free salmon and steelhead runs and whitewater recreation directly support recreation economies not only in Josephine County but downstream in Curry County and the

South Coast tourism region as well. We ask DEQ to consider the following additional, publicly available data points as part of the rulemaking record:

Regional Recreation Economy Tied to the Illinois–Rogue System

Geography / Metric	Figure	Source
Josephine County tourism spending (annual, Visit Grants Pass metric)	$155 million	Visit Grants Pass, 2023
Josephine County tourism jobs	2,230	Visit Grants Pass, 2023
Josephine County outdoor recreation trip spending (2019)	$174.8 million	Earth Economics/Travel Oregon, 2021
Josephine County outdoor recreation jobs (2019)	1,701	Earth Economics/Travel Oregon, 2021
Josephine County outdoor recreation trip spending (2022)	$216.5 million	Earth Economics/OPRD, 2024
Josephine County outdoor recreation jobs (2022)	2,213	Earth Economics/OPRD, 2024
Josephine County outdoor recreation GDP contribution (2022)	$158.7 million	Earth Economics/OPRD, 2024
Josephine County state & local tax revenue from recreation (2022)	$23.6 million	Earth Economics/OPRD, 2024
Curry County outdoor recreation trip spending (2022)	$533.6 million	Earth Economics/OPRD, 2024
Curry County outdoor recreation jobs (2022)	6,093	Earth Economics/OPRD, 2024
South Coast region outdoor recreation output (2019)	$1.48 billion	Earth Economics/Travel Oregon, 2021
South Coast visitor spending, all-time high (2023)	$561 million	Dean Runyan Associates / QualityInfo, 2024

These two Josephine County data sets measure related but distinct things and should be read together, not as duplicates: the Visit Grants Pass figure captures overall visitor/tourism spending countywide, while the Travel Oregon/Earth Economics figures isolate spending specifically tied to outdoor recreation trips — including local residents recreating close to home, not just overnight visitors. By this narrower, recreation-specific measure alone, outdoor recreation supported an estimated $216.5 million in trip-related spending, 2,213 jobs, and $158.7 million in GDP contribution in Josephine County in 2022, up from $174.8 million and 1,701 jobs in the 2019 baseline year — growth that occurred while the Illinois River and Rough and Ready Creek retained the high water quality the proposed ORW designation would lock in**.** This confirms that the water-dependent recreation economy the FIS highlights for Josephine County is not only substantial today but has been growing, reinforcing

the case that maintaining current water quality — rather than allowing any degradation — is the fiscally prudent course.

Sources: Visit Grants Pass (2023), 2022–23 Annual Report; Mackey, E., & Cousins, K. (2024), Economic Analysis of Outdoor Recreation in Oregon: 2022 Update, Earth Economics/OPRD; Mojica, J., Cousins, K., & Madsen, T. (2021), Economic Analysis of Outdoor Recreation in Oregon, Earth Economics/Travel Oregon; Dean Runyan Associates, Oregon Travel Impacts, as summarized by Oregon Employment Department, QualityInfo.org (2024).

Research Documents More Than $1.5 Billion in Annual Value From the Salmon That Depend on These Waters

Economics firm ECONorthwest analyzed the economic value of salmon and steelhead in the Wild & Scenic Rogue River. The resulting peer-reviewed-literature-based analysis, *Helvoigt, T.L., and D. Charlton. 2009. The Economic Value of Rogue River Salmon* remains directly relevant to this rulemaking and should be added to the record.

That analysis quantified three distinct components of the economic value that Rogue River salmon and steelhead provide to West Coast residents:

Value Component	**Estimated Annual Value (2007 USD)**
Commercial fishing value	Not less than $1.36 million
Sport (recreational) fishing value	Not less than $16 million
Non-use (existence) value to West Coast residents	Approximately $1.5 billion
Total documented annual value	Well over $1.5 billion

The report's most striking finding is that non-use value — the value West Coast residents place simply on knowing that wild Rogue River salmon continue to exist, whether or not they ever fish for them — dwarfs both commercial and recreational fishing value combined. Oregon, Washington, and California households were found to place a per-person value of $32.37 per year on the Rogue fishery, and Oregonians alone have consistently told state pollsters, across more than a decade of the Oregon Population Survey, that they are willing to pay over $70 million annually to improve salmon habitat statewide. This is the same category of public value that a permanent, cost-effective safeguard like ORW designation is uniquely suited to conserve, because non-use value depends entirely on the public's confidence that habitat will remain intact — not on any individual visiting the river at all.

The report is directly on point for this rulemaking. It identifies tributary streams — at least 100 stream miles across 14 Rogue tributaries — as providing essential cold-water refugia that Rogue salmon and steelhead depend on for survival, particularly as summer water temperatures in the mainstem Rogue rise. The Illinois River and Rough and Ready Creek are among the most significant of these tributary systems, and the report's authors concluded that “enhanced protection of the critical streams that flow into the Wild & Scenic Rogue River is a virtually costless action that will lead to significant economic benefits for both the present and future generations.” That conclusion applies with full force to the ORW designation proposed here. Notably, even using the report's conservative 2007-dollar estimates without adjusting for inflation or nearly two decades of population growth in the West Coast

willingness-to-pay base, the documented value of the salmon runs this rulemaking would help protect exceeds ten times the $155 million in annual tourism spending the Draft FIS identifies for Josephine County alone. The number of salmon and steelhead fishing guides and recreational anglers operating out of Gold Beach, Oregon, especially during summer and fall Chinook seasons is significant (See: https://goldbeachoregon.com/fishing-guides/ and https://oregondiscovery.com/rogue-river-north-jetty). Since a large portion of the Rogue River salmon is directly supported by the critical habitat in Illinois River the current ongoing contribution of this fishery to the local economy should be noted in the fiscal impact analysis.

Source: Helvoigt, T.L., and D. Charlton (2009). The Economic Value of Rogue River Salmon. ECONorthwest, Eugene, OR.

The Fishery and Recreation and Economic Values the FIS Describes Are Independently Documented by the U.S. Forest Service

The FIS's economic conclusions are corroborated by the U.S. Forest Service's own management findings for this exact river corridor. The Rogue River-Siskiyou National Forest has designated the Illinois River's fishery, water quality, scenery, and recreation as Outstandingly Remarkable Values under its Wild and Scenic River management plan, and describes the Illinois as one of the few West Coast rivers with a wild, hatchery-free salmon and steelhead population — a distinction that depends entirely on maintaining the water quality the proposed ORW rule would protect.

The Forest Service reports that Illinois River recreation use can reach 1,000 visitors on a single summer day along a five-mile stretch, illustrating the intensity of the recreation economy the FIS's tourism-spending figures reflect.

Sources: USFS Rogue River-Siskiyou National Forest, "Wild and Scenic Illinois River" (fs.usda.gov).

Protecting the Illinois–Rogue Watershed Also Protects Downstream Drinking Water — an Ecosystem Service the FIS Does Not Fully Monetize

The FIS appropriately focuses on tourism and forestry impacts, but American Rivers urges DEQ to also weigh the value of the drinking-water protection this designation provides. Water quality in the Illinois River directly affects the Lower Rogue River downstream, from which the City of Gold Beach draws its municipal drinking water supply. U.S. EPA research demonstrates that undeveloped source watersheds measurably reduce drinking-water treatment costs and EPA's Healthy Watersheds Program has documented cases in which source-water protection allowed communities to avoid tens of millions of dollars in filtration infrastructure altogether.

An ORW designation for the Illinois River and Rough and Ready Creek is a direct, low-cost way to secure these downstream water-treatment cost avoidance benefits for Gold Beach and other Rogue basin communities, in addition to the recreation and fishery benefits the FIS already identifies.

Sources: U.S. EPA, Healthy Watersheds Program, Fact Sheet: The Economic Benefits of Protecting Healthy Watersheds, EPA-841-F-26-001 (2026); Curry Watersheds Partnership/USFS Gold Beach Ranger District, Lower Rogue Watershed Action Plan (2015).

American Rivers Supports DEQ's Treatment of the City of Cave Junction and Recommends Continued Coordination

We agree with the FIS's careful, fact-specific treatment of the City of Cave Junction's wastewater treatment plant, which discharges to the Illinois River roughly five miles upstream of the proposed ORW boundary and currently operates well below its permitted design flow designed for communities up to 10,000. The latest population estimate for Cave Junction was 2,071 according to census figures. American Rivers supports DEQ's approach of evaluating any future increase through the same antidegradation analysis already required outside the ORW context. We encourage DEQ to continue engaging with Cave Junction — so that if a future plant expansion is needed, the City has access to no-cost options that are consistent with ORW classifications. We also recognize the economic values the exceotionally clean water the Illinois River provides the City, a gateway community to the river.

Supporting the U.S. Forest Service's Existing Responsibilities and Reducing Costs

An Outstanding Resource Waters (ORW) designation would classify the portions of the Illinois River and Rough and Ready Creek as outstanding waters of the State directly reinforcing the Forest Service's Wild and Scenic River management mandate, since protecting water quality and free-flowing character are core statutory obligations under the Wild and Scenic Rivers Act. First, this would support the Forest Service's own monitoring and support its requirements protect and enhance their Outstandingly Remarkable Values. Second, protecting water quality preserves recreation, fisheries, and tourism-based revenue tied to the rivers, supporting local economies and reducing pressure on the agency to fund costly remediation after any degradation occurs.

Thank you for the opportunity to comment on this important Fiscal Impact Analysis. Please do not hesitate to contact us with any questions.

Respectfully submitted,



David Moryc

Senior Director, River Protection Program

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Economic Data

Visit Grants Pass (2023). 2022–23 Annual Report.

Mojica, J., Cousins, K., & Madsen, T. (2021). Economic Analysis of Outdoor Recreation in Oregon. Earth Economics, Tacoma, WA. Prepared for Travel Oregon, the Oregon Office of Outdoor Recreation, and the Oregon Department of Fish and Wildlife.

Mackey, E., & Cousins, K. (2024). Economic Analysis of Outdoor Recreation in Oregon: 2022 Update. Earth Economics, Tacoma, WA. Prepared for the Oregon Parks and Recreation Department.

Dean Runyan Associates. Oregon Travel Impacts, 1992–2023(p): Statewide Estimates. Prepared for Travel Oregon.

Oregon Employment Department, QualityInfo.org (2024). "Footprints in the Sand: The Impact of Tourism on Oregon's South Coast."

Rogue River Salmon Economic Valuation

Helvoigt, T.L., and D. Charlton (2009). The Economic Value of Rogue River Salmon. ECONorthwest, Eugene, OR. Prepared for the Save the Wild Rogue Campaign (American Rivers, founding partner), with funding support from the Giles & Elise Mead Foundation. wildrogue alliance.org/files/RogueSalmonFinalReport.pdf.

Helvoigt, T.L., et al. (2009). Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River. ECONorthwest, prepared for the Save the Wild Rogue Campaign. [Companion report; cited in KS Wild letter of support for S. 1589, October 2021.]

Curry Watersheds Partnership and USDA Forest Service, Gold Beach Ranger District. Lower Rogue Watershed Action Plan (2015), citing Helvoigt & Charlton (2009) for Rogue basin salmon value estimates. currywatersheds.org.

U.S. Forest Service

USDA Forest Service, Rogue River-Siskiyou National Forest. "Wild and Scenic Illinois River" [recreation site page]. fs.usda.gov/r06/rogue-siskiyou/recreation/wild-and-scenic-illinois-river.

Ecosystem Services / Drinking Water

U.S. Environmental Protection Agency, Healthy Watersheds Program. Fact Sheet: The Economic Benefits of Protecting Healthy Watersheds. EPA-841-F-26-001 (2026).

Curry Watersheds Partnership and USDA Forest Service, Gold Beach Ranger District. Lower Rogue Watershed Action Plan (2015).

State of Oregon
DEQ Department of Environmental Quality

Illinois River and Rough and Ready Creek Outstanding Resource Water Rulemaking Draft Fiscal Impact Statement

Statement of fiscal and economic impact

Fiscal and economic impact

Executive Summary

The proposed rules would preserve benefits to businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

ORW rules protect the current water quality at the time the rules become effective. Commercial forest harvesting that may occur in the two watersheds can continue without impacting water quality as long as harvest rates do not increase and Forest Practice Act rules are followed. Moreover, these watersheds are included in the Rogue River Temperature TMDL that is currently being updated. This TMDL includes load allocations for forested areas that, as they are implemented through improvements in forest harvest practices, will improve water quality in the watershed. As these are already required through the TMDL irrespective of the ORW designation, the proposed rules will not have a fiscal impact on any industrial or commercial forest harvesting.

Under the proposed rules, DEQ cannot: 1. issue a new National Pollutant Discharge Elimination System permit or expand an existing NPDES permit to discharge wastewater to the ORWs; or 2. issue or expand an NPDES permit upstream of the ORWs if the discharge will result in lowering of water quality in the ORWs. DEQ can issue a Water Pollution Control Facility permit that does not allow a direct or indirect discharge to surface waters. These requirements may increase compliance costs for facilities wishing to operate in the watershed if such measures are not already required under existing regulatory requirements.

The proposed rules may impact residents of the City of Cave Junction. The City's wastewater treatment plant has a NPDES permit to discharge into the Illinois River approximately five miles upstream of the proposed ORW designation. At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. As there are five miles between the discharge and the ORW designation, and many other considerations besides the ORW, it's

possible that future expansion will not affect the water quality in the ORWs. However, if a future plant expansion would degrade water quality in the ORW, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Statement of cost of compliance

Federal agencies

US Forest Service – Rogue River-Siskiyou National Forest

There are few direct impacts to the Rogue River-Siskiyou National Forest. The agency manages most of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. A large portion of the area that is proposed to be designated already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management standards from the Northwest Forest Plan's Aquatic Conservation Strategy. Any future planning efforts would require disclosure of the ORW designation in the public process required under the National Environmental Policy Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

US Bureau of Land Management (BLM) – Medford District

There are few direct impacts to the Medford District BLM. The agency manages a portion of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. This portion of lands already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management objectives for maintaining water quality from the Southwestern Oregon Resource Management Plan. Any future planning efforts would require disclosure of the ORW designation in the public process under the National Environmental Protection Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

State agencies

DEQ

There are few direct impacts to DEQ. The proposed rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of the Illinois River and Rough and Ready Creek from their current condition, other than construction projects with a short-term impact, which already require permits. Therefore, there should be no need to develop new permits, 401 certifications, or total maximum daily loads for these waterbodies. To the extent that Cave Junction plans for any expansion of its wastewater treatment system in the future, DEQ permitting staff will need to ensure that the expansion will not degrade water quality in waters proposed for ORW designation. The analysis needed to do so is the same or similar as what is required in any permit as part of antidegradation analysis. As a result, DEQ expects that the analysis will require little to no additional staff time.

DEQ also considers ORW designations as part of Division 33 water rights reviews that are coordinated through the Water Resources Department. However, since ORW designation is already a part of the form that DEQ staff fill out for Division 33 reviews, there will be minimal to

no additional work needed to consider water rights applications in the waters proposed for ORW designation, other than that needed to update DEQ's database of ORW waters.

Local governments

The proposed ORW designation will continue to protect the recreational values of both Rough and Ready Creek and the Illinois River. As a result, the ORW designations are expected to support local revenue related to recreation and tourism.

The city of Cave Junction has an NPDES permit for its wastewater treatment plant that discharges to the Illinois River five miles upstream of the proposed ORW designation. The wastewater treatment plant only discharges to the Illinois River from November 1 to May 31. From June 1 to October 31, the effluent from the wastewater treatment plant is used at a nearby golf course.

The city of Cave Junction last upgraded its wastewater treatment plant in 1998 to a system with an aerated activated sludge treatment plant with secondary clarifiers and an aerobic sludge digester. and is currently operating below capacity. As of the City's last permit renewal in 2022, the plant was operating at 44% of its wet weather design flow and 40% of its dry weather design flow on average.[1]

At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will conduct modeling to determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. Given the distance (about 5 miles) between the discharge and the ORW designation, it's possible that future expansion will not have an effect on the water quality in the ORW designated waters. However, if there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Public

DEQ does not expect a fiscal impact to the public as a result of this rule.

Large businesses - businesses with more than 50 employees

The rules will not impact large businesses conducting industrial forestry but may impact other types of large businesses that require wastewater permits. Large businesses that have industrial forest holdings in the waters proposed to be designated as ORWs will not be impacted by the ORW designation. There are approximately 2300 acres of industrial forestlands in these waters (Figure 1). DEQ has determined that compliance with current state forest practice rules for standard harvest are sufficient to ensure that any harvest will not lower water quality. As a result, there will be no impact on large forestry businesses.

[1] See City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp. and ODEQ, 2022. National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.

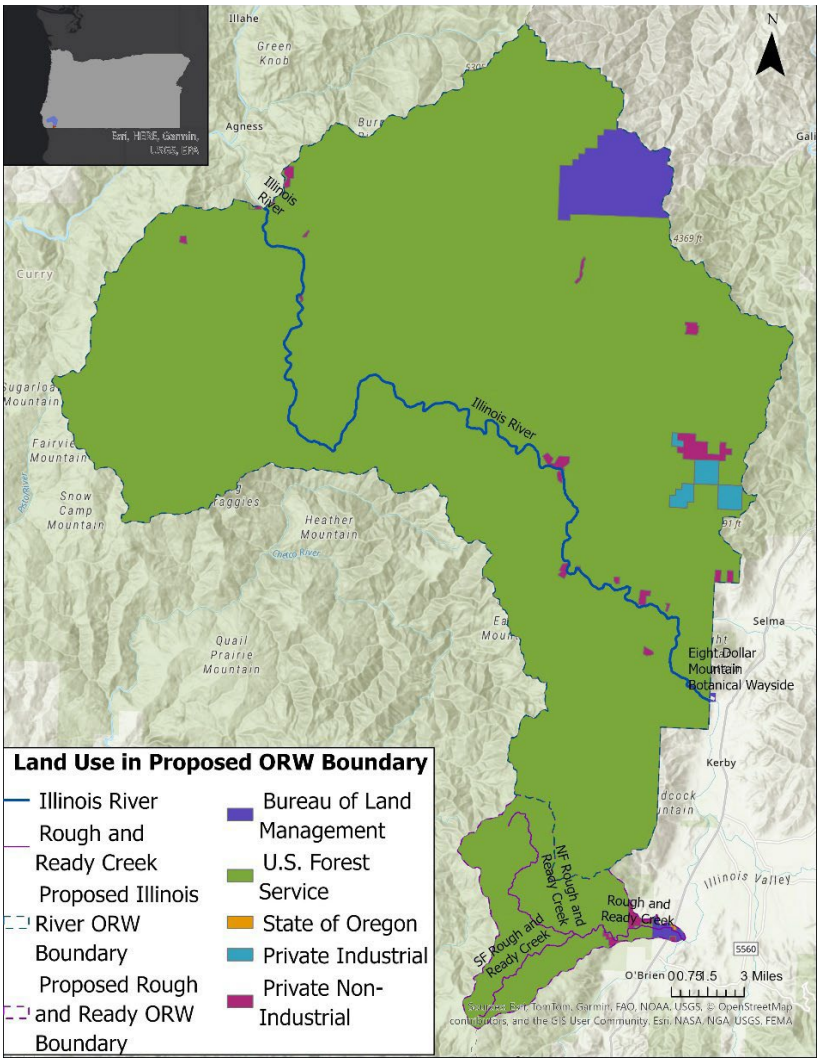

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

The rules may impact other large businesses that need a water quality permit. Absent the proposed rules, companies could obtain a National Pollutant Discharge Elimination System permit to discharge directly or indirectly to waters proposed for ORW designation. DEQ antidegradation rules allow a new NPDES permit if the discharge will meet any relevant TMDL requirements, protect endangered species, and result in no more than *de minimis* lowering of water quality, or more than *de minimis* lowering with DEQ or Environmental Quality Commission approval.[2]

Due to the proposed rules, businesses could not obtain an NPDES permit, but could apply for a WPCF permit, which does not allow direct or indirect discharge to waters of the state. For example, wastewater from operations could be placed in a lined holding pond or discharged to an underground injection well that had no connection to surface waters. Ensuring no discharge to surface waters could increase compliance costs to these companies, although compliance costs for monitoring could be less if there is no discharge.

[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

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For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

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ORW rules protect the current water quality at the time the rules become effective. Commercial forest harvesting that may occur in the two watersheds can continue without impacting water quality as long as harvest rates do not increase and Forest Practice Act rules are followed. Moreover, these watersheds are included in the Rogue River Temperature TMDL that is currently being updated. This TMDL includes load allocations for forested areas that, as they are implemented through improvements in forest harvest practices, will improve water quality in the watershed. As these are already required through the TMDL irrespective of the ORW designation, the proposed rules will not have a fiscal impact on any industrial or commercial forest harvesting.

Under the proposed rules, DEQ cannot: 1. issue a new National Pollutant Discharge Elimination System permit or expand an existing NPDES permit to discharge wastewater to the ORWs; or 2. issue or expand an NPDES permit upstream of the ORWs if the discharge will result in lowering of water quality in the ORWs. DEQ can issue a Water Pollution Control Facility permit that does not allow a direct or indirect discharge to surface waters. These requirements may increase compliance costs for facilities wishing to operate in the watershed if such measures are not already required under existing regulatory requirements.

The proposed rules may impact residents of the City of Cave Junction. The City's wastewater treatment plant has a NPDES permit to discharge into the Illinois River approximately five miles upstream of the proposed ORW designation. At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. As there are five miles between the discharge and the ORW designation, and many other considerations besides the ORW, it's

possible that future expansion will not affect the water quality in the ORWs. However, if a future plant expansion would degrade water quality in the ORW, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Statement of cost of compliance

State agencies

DEQ

There are few direct impacts to DEQ. The proposed rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of the Illinois River and Rough and Ready Creek from their current condition, other than construction projects with a short-term impact, which already require permits. Therefore, there should be no need to develop new permits, 401 certifications, or total maximum daily loads for these waterbodies. To the extent that Cave Junction plans for any expansion of its wastewater treatment system in the future, DEQ permitting staff will need to ensure that the expansion will not degrade water quality in waters proposed for ORW designation. The analysis needed to do so is the same or similar as what is required in any permit as part of antidegradation analysis. As a result, DEQ expects that the analysis will require little to no additional staff time.

DEQ also considers ORW designations as part of Division 33 water rights reviews that are coordinated through the Water Resources Department. However, since ORW designation is already a part of the form that DEQ staff fill out for Division 33 reviews, there will be minimal to no additional work needed to consider water rights applications in the waters proposed for ORW designation, other than that needed to update DEQ's database of ORW waters.

Local governments

The proposed ORW designation will continue to protect the recreational values of both Rough and Ready Creek and the Illinois River. As a result, the ORW designations are expected to support local revenue related to recreation and tourism.

The city of Cave Junction has an NPDES permit for its wastewater treatment plant that discharges to the Illinois River five miles upstream of the proposed ORW designation. The wastewater treatment plant only discharges to the Illinois River from November 1 to May 31. From June 1 to October 31, the effluent from the wastewater treatment plant is used at a nearby golf course.

The city of Cave Junction last upgraded its wastewater treatment plant in 1998 to a system with an aerated activated sludge treatment plant with secondary clarifiers and an aerobic sludge digester. and is currently operating below capacity. As of the City's last permit renewal in 2022,

the plant was operating at 44% of its wet weather design flow and 40% of its dry weather design flow on average.[1]

At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will conduct modeling to determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. Given the distance (about 5 miles) between the discharge and the ORW designation, it's possible that future expansion will not have an effect on the water quality in the ORW designated waters. However, if there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Public

DEQ does not expect a fiscal impact to the public as a result of this rule.

Large businesses - businesses with more than 50 employees

The rules will not impact large businesses conducting industrial forestry but may impact other types of large businesses that require wastewater permits. Large businesses that have industrial forest holdings in the waters proposed to be designated as ORWs will not be impacted by the ORW designation. There are approximately 2300 acres of industrial forestlands in these waters (Figure 1). DEQ has determined that compliance with current state forest practice rules for standard harvest are sufficient to ensure that any harvest will not lower water quality. As a result, there will be no impact on large forestry businesses.

[1] See City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp. and ODEQ, 2022. National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.

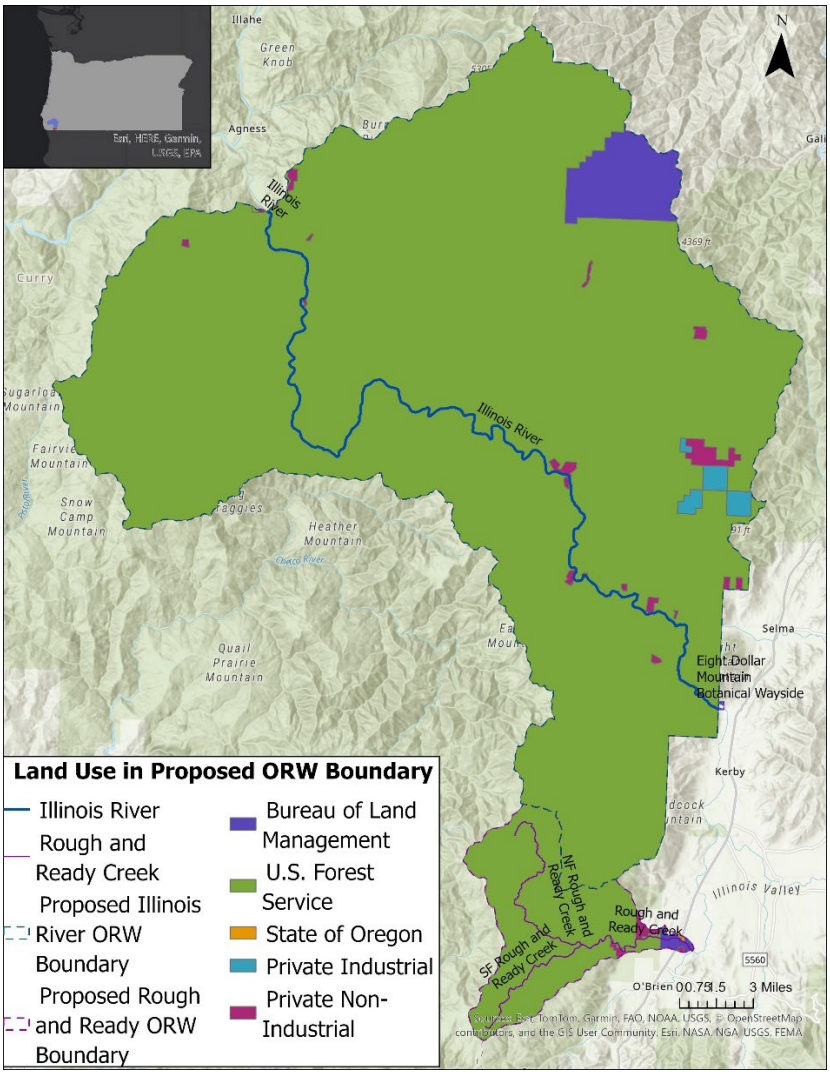

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

The rules may impact other large businesses that need a water quality permit. Absent the proposed rules, companies could obtain a National Pollutant Discharge Elimination System permit to discharge directly or indirectly to waters proposed for ORW designation. DEQ antidegradation rules allow a new NPDES permit if the discharge will meet any relevant TMDL requirements, protect endangered species, and result in no more than *de minimis* lowering of water quality, or more than *de minimis* lowering with DEQ or Environmental Quality Commission approval.[2]

Due to the proposed rules, businesses could not obtain an NPDES permit, but could apply for a WPCF permit, which does not allow direct or indirect discharge to waters of the state. For example, wastewater from operations could be placed in a lined holding pond or discharged to an underground injection well that had no connection to surface waters. Ensuring no discharge to surface waters could increase compliance costs to these companies, although compliance costs for monitoring could be less if there is no discharge.

[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

Oregon
Tina Kotek, Governor

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August 14, 2026

To: Aron Borok, Oregon Department of Environmental

RE: DOGAMI Comments, DEQ Outstanding Recourse Waters Rulemaking for Illinois River/Rough and Ready Creek

Dear Aron,
These DOGAMI comments are in support of DEQ's rulemaking to designate the Wild and Scenic portions of the Illinois River and Rough and Ready Creek as Outstanding Resource Waters. These comments are specifically related to existing or proposed mine sites upstream of the Illinois River Outstanding Resource Waters designation area:

DOGAMI is sharing this information for DEQ's awareness, as we do not anticipate these operations will be adversely impacted by the proposed Outstanding Resource Watershed (ORW) designations. Should any of these sites require DEQ NPDES 1200-A Industrial Stormwater General Permit (1200-A), or Water Pollution Control Facility (WPCF) 1000 General Permit coverage, the applicable permit application and review requirements should ensure that potential water quality impacts to the Illinois River and the proposed ORW area are appropriately evaluated and addressed.

There are four DOGAMI sites located in the upstream watershed of the Illinois River. One site is currently permitted under a DOGAMI Surface Mine Operating Permit, two sites are covered under DOGAMI Exclusion Certificates, and one site is a closed application that may be resubmitted to DOGAMI based on recent correspondence with the applicant:

1. **DOGAMI ID# 17-0044** (Latitude 42.238616, Longitude -123.613313): Reeves Creek Quarry is covered under a DOGAMI Exclusion Certificate (see ORS 517.753, and OAR 632-030-0016) and operated by Josephine County Road Department. The site consists of a ~4 Acre quarry site. The site is near Reeves Creek which flows into Lake Selmac. Lake Selmac flows into Deer Creek and ultimately to the Illinois River at the upstream end of the ORW area northwest of Eight Dollar Mountain. This site currently is not registered under either the 1200-A or WPCF 1000 Permits. DOGAMI does not have any concerns about this site impacting the ORW designation for Illinois River given its location. DOGAMI does not anticipate any increased costs of compliance, should this site require coverage in the future under the 1200-A or WPCF 1000 Permits. Note this site is

operated by an extension of the local government, so it is not operated by a large or small business.

2. **DOGAMI ID# 17-0137** (Latitude 42.085751, Longitude -123.652458): Freeman Quarry is covered under a DOGAMI Surface Mine Operating Permit and operated by Camps Custom Excavating which is assumed to be a small business. The site consists of a 31.6-acre rock quarry operation. This site does not currently have coverage under the 1200-A or WPCF Permits. The site is near a drainage called "Deep Gravel Cut" on the USGS topographic map, a drainage that was significantly impacted by historic hydraulic placer gold mining which created unnatural landforms and drainage patterns. Deep Gravel Cut flows into the West Fork Illinois River just downstream of the confluence of Rough and Ready Creek with the West Fork Illinois River. This is the largest and most active mine site in the area upstream of the Illinois River ORW designation area. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ NPDES 1200A or WPCF 1000 general permit.
3. **DOGAMI ID# 17-0154** (Latitude 42.191453, Longitude -123.674087): This is a withdrawn application for a Surface Mine Operating Permit for the proposed Westside Quarry. Although this application was withdrawn, the applicant (a sole proprietor and therefore a small business), has recently been in contact with DOGAMI about reapplying which is why DOGAMI is including this site in our comments. The site is located west of the Illinois River downstream of Cave Junction 2.75 miles above the ORW area. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ 1200-A or WPCF 1000 Permits.
4. **DOGAMI ID# 17-0157** (Latitude 42.102870, Longitude -123.711538): The Airport Drive mine is covered under a DOGAMI Exclusion Certificate (see ORS 517.753, and OAR 632-030-0016) and operated by Paul Cunningham (a sole proprietor and therefore a small business). The site is a 5.3-acre quarry site located northeast of Rough and Ready Creek. This site does not currently have coverage under the 1200-A or WPCF Permits. This site is near Parker Creek, however, the unnamed drainage adjacent to the site is a tributary to Mendenhall Creek (not Parker Creek) which flows into the West Fork of the Illinois River. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ NPDES 1200A or WPCF 1000 general permit.

Please let us know if you have any questions about these sites.

Sincerely,
Vaughn Balzer RG
Floodplain Mining Reclamationist – Rules Coordinator
DOGAMI - MLRR

August 31, 2026

To: Aron Borok
Water Quality Permitting Variance Specialist
Department of Environmental Quality

Re: Wild and Scenic Illinois River and Rough and Ready Creek Outstanding Resource Waters, Draft Fiscal Impact

Dear Mr. Borok:

Thank you for the opportunity to provide comments on the Department of Environmental Quality's draft Fiscal Impact Statement (FIS) and to serve on the Rulemaking Advisory Committee (RAC) for the proposed Rough and Ready Creek and National Wild and Scenic Illinois River Outstanding Resource Waters designation.

Based on DEQ's presentation at the last RAC meeting, we understand that the Fiscal Impact Statement (FIS) is intended to have a specific format as per ORS 183.335(2)(b)(E) which states that:

> A statement of fiscal impact identifying state agencies, units of local government and the public that may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public. In considering the economic effect of the proposed action on the public, the agency shall utilize available information to project any significant economic effect of that action on businesses which shall include a cost of compliance effect on small businesses affected…

We appreciate that DEQ has identified and included many of the economic benefits that will come from ensuring that these nationally outstanding stream systems—with the extraordinary water quality, important and often unique ecological values and the critical habitat they provide—are protected into the future.

We'd like to reiterate that that the FIS should also account for additional economic benefits of protecting these stream systems across a broader area, including in Curry County.

Economic benefits to the Wild and Scenic Rogue River and Curry County

The lower part of the Wild Section of the Wild and Scenic Illinois River is in Curry County as is its confluence with the Wild and Scenic Rogue River where the Illinois

contributes 25% of the flow to the Rogue River. That the Illinois' 25% contribution to the waters of the Rogue is exceptionally clean and clear is another benefit to the Rogue River, Curry County and Gold Beach.

Equally important, the wild anadromous fish populations of the Illinois River and its tributary, Rough and Ready Creek, are very important to the world class fishery of the Rogue Basin and to its contribution to the offshore commercial fisheries of Oregon and California. Most of the Wild and Scenic Illinois' River's wild winter steelhead are caught in the lower Rogue River in Curry County. The Illinois River's wild salmon are also primarily caught in the Rogue River or off shore in California and Oregon.

The Illinois Rivers' large lower tributaries - Collier Creek, Silver Creek, Indigo Creek, Lawson Creek and Horse Sign Creek all serve as pristine to near-pristine spawning and rearing habitat for the Illinois River's wild steelhead runs, which are counted as part of the Rogue's winter steelhead run and are caught in Curry County.

In our proposed Outstanding Resource Waters (ORW) nomination, we quoted from the U. S. Forest Service's Report to Congress for the Illinois Wild and Scenic River, which found that not only was the proposed Wild and Scenic Illinois River's water quality an outstandingly remarkable value but its fishery was as well.

> *The fish value of the Illinois is significant in variety and numbers of fish. More than 20 species of fish maintain reproducing populations in the drainage. The Illinois River, being a relatively small stream, contains a surprisingly large run of anadromous fish. Approximately 25,000 salmon and steelhead are caught by sport fishermen each year. Steelhead on this river are noted for their large size. The Illinois contributes another 85,000 salmon annually to the offshore commercial fisheries of Oregon and California.*[1]

Like other West Coast stream systems, including the greater Rogue Basin, anadromous fish populations of the Illinois River have declined. However, the Forest Service numbers in 1977 are an indicator of the relative productivity and economic importance of the Illinois Rivers' wild anadromous fishery.

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[1] U.S. Forest Service, 1977, A Proposal: Illinois Wild and Scenic River, Study Report, Siskiyou National Forest. Page 24 - https://www.fws.gov/rivers/sites/rivers/files/2023-01/illinois-study.pdf

In addition to the value of the Illinois River's significant contribution to the Rogue River's world class fishery and the offshore fishery of Oregon and California is its importance as a stronghold of wild anadromous fish populations. Here we cite again the U.S. Forest Service from our proposal for Outstanding Resource Waters designation as follows:

> *The Illinois River Basin is believed to be one of the most important and special anadromous fisheries in the Rogue Basin. The majority of wild coho salmon and winter steelhead stocks in the entire Rogue Basin spawn in the Illinois Basin. Thus, most fisheries biologist assume the Illinois River basin to be the stronghold for wild anadromous fish populations in the Rogue Basin.*[2]

To put a finer point on the importance of the wild anadromous fish populations of the Illinois River Basin, both the U.S. Forest Service and Bureau of Land Management respectively found that:

> *Illinois River anadromous fisheries are the stronghold for wild anadromous fish repopulation in the Rogue Basin.*[3]
>
> *The anadromous fishery of the Illinois River Sub-basin is viewed as a stronghold for wild anadromous fish repopulation in the Rogue River Basin.*[4]

We understand the difficulty of assigning a dollars and cents economic benefit to the significant contributions of the proposed Wild and Scenic Illinois River Outstanding Resource Waters and Rough and Ready Creek. However, others have provided numbers from studies that we hope help. It's also important to point out that these are not speculative values but ones that exist and are ongoing. Furthermore, it's important to emphasize that the U.S. Forest Service under the National Wild and Scenic Rivers Act is required to protect and enhance these values.[5]

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[2] Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands, pages 18 & 19 citing the US Forest Service, 1997, West Fork Illinois River Watershed Analysis, Illinois Valley Ranger District, Siskiyou National Forest, p. 14 and p. 2 of the Fisheries appendix.

[3] U.S. Forest Service, 1997, West Fork Illinois River Watershed Analysis Results Iteration 1, Siskiyou National Forest, June 1997, page 18.

[4] USDI, Bureau of Land Management, 2003, West Fork Illinois River Watershed Assessment, Medford District, May 2003, page 18.

[5] 16 U.S.Cl §1281 (a).

Placing a value on clean drinking water

Beyond fisheries, I'd like to emphasize the value of the Wild and Scenic Illinois and Rough and Ready Creek to drinking water. For Josephine County, the primary source of drinking water for the private inholdings along the Wild and Scenic Illinois River is surface water from its direct tributaries.

Rough and Ready Creek also provides the domestic water supply for at least one inholding. In our nomination letter proposing Rough and Ready Creek as an ORW (nomination letter) we write:

> *One social value that's impossible to quantify is the role that Rough and Ready Creek plays in recharging the local aquifer. Most residents of this corner of the Illinois Valley are dependent on wells for their domestic water supply. While the aquifer underlying Rough and Ready Creek's alluvial fan is not well understood, its highly likely most local wells are tapping into the aquifer. Therefore protecting and not allowing the degradation of Rough and Ready Creek's excellent water quality will benefit local residents who value clean drinking water.*

Contributions to recreation, quality of life and the overall health of residents

The Wild and Scenic Illinois and Rough and Ready Creek provide substantial recreational benefits for local communities and visitors. In particular, we'd like to



address in more detail Rough and Ready Creek's contribution not only to recreation but also to enhancing the quality of life of residents in the Illinois River Valley and the health and well being of residents in Josephine County generally.

Rough and Ready Creek is a highly valued as a community open space. We discuss this on page 24 of our nomination letter. Footnote 80 cites page 3 of the Bureau of Land Management's management plan for the Rough and Ready Creek Area of Critical Environmental Concern (ACEC):

> *The ACEC provides a unique open space and scenic natural area with unusual character in the Illinois Basin. The undeveloped landscape stands out here on the valley floor where much of the lowlands have been converted to residential, agricultural, industrial or commercial development.*

Since establishment of the ACEC, there has been significant investment in improving visitor experience with a corresponding increase in use by both visitors and residents. The Illinois Valley Community Development Organization (IVCDO) has spearheaded these efforts in partnership with the Bureau of Land Management, the U. S. Forest Service, the State of Oregon and NGOs. Here's what IVCDO's websites description of the project:

> *IVCanDO, in collaboration with esteemed partners such as the Rogue River-Siskiyou National Forest, the Medford District Bureau of Land Management, the State of Oregon, Travel Grants Pass, and Resource Assistance for Rural Environments (RARE), has taken the lead in enhancing the recreational offerings at the Rough and Ready Botanical Wayside. Together, they have embarked on a transformative journey to elevate the visitor experience.*
>
> *In 2021, significant improvements were made to the walking path, aimed at enhancing accessibility and comfort for all visitors. The path underwent resurfacing, effectively revitalizing its condition. Furthermore, the length of the path was doubled, providing even more opportunities to explore and immerse oneself in the natural splendor of the wayside. To ensure inclusivity, the width of the path was also increased to accommodate wheelchairs, strollers, and side-by-side walking, allowing everyone to partake in the joy of the journey.*
>
> *To enhance the charm and resting spots along the path, hand-carved benches, masterfully crafted by a local chainsaw artist, were thoughtfully placed. These benches not only provide a place to rest and soak in the awe-inspiring views but also serve as a means to promote accessibility, ensuring that more individuals can enjoy the wonders of the trail.*

The commitment to continuous improvement is unwavering. Future plans include the installation of updated interpretive signage throughout the wayside. These informative signs will offer valuable insights into the unique ecology of the area, enriching visitors' understanding of the remarkable natural wonders that surround them. Additionally, there are plans to pave the parking lot, further enhancing accessibility and ensuring that more individuals can conveniently access this haven of natural beauty.

IVCanDO and its esteemed partners are dedicated to creating an environment where all individuals can connect with nature and revel in its magnificence. The ongoing efforts to enhance the Rough and Ready Botanical Wayside serve as a testament to their unwavering commitment to fostering a welcoming and enriching recreational experience for visitors from near and far.[6]

To underscore the way that local people's lives are enhanced and improved by Rough and Ready Creek's unique hydrology and water quality, we'd like to share a collection of photographs and posts from various local Facebook pages:

The below is a photograph from the Friends of Rough and Ready Botanical Area Facebook page[7] demonstrating the quality of water that Rough and Ready Creek produces, even after big storms, as it flows from the Kalmiopsis Wilderness and the South Kalmiopsis Roadless Area.



[6] Illinois Valley Community Development Organization, Rough and Ready Creek Botanical Wayside, https://ivcdo.org/roughandready/

[7] https://www.facebook.com/groups/347239893318726/

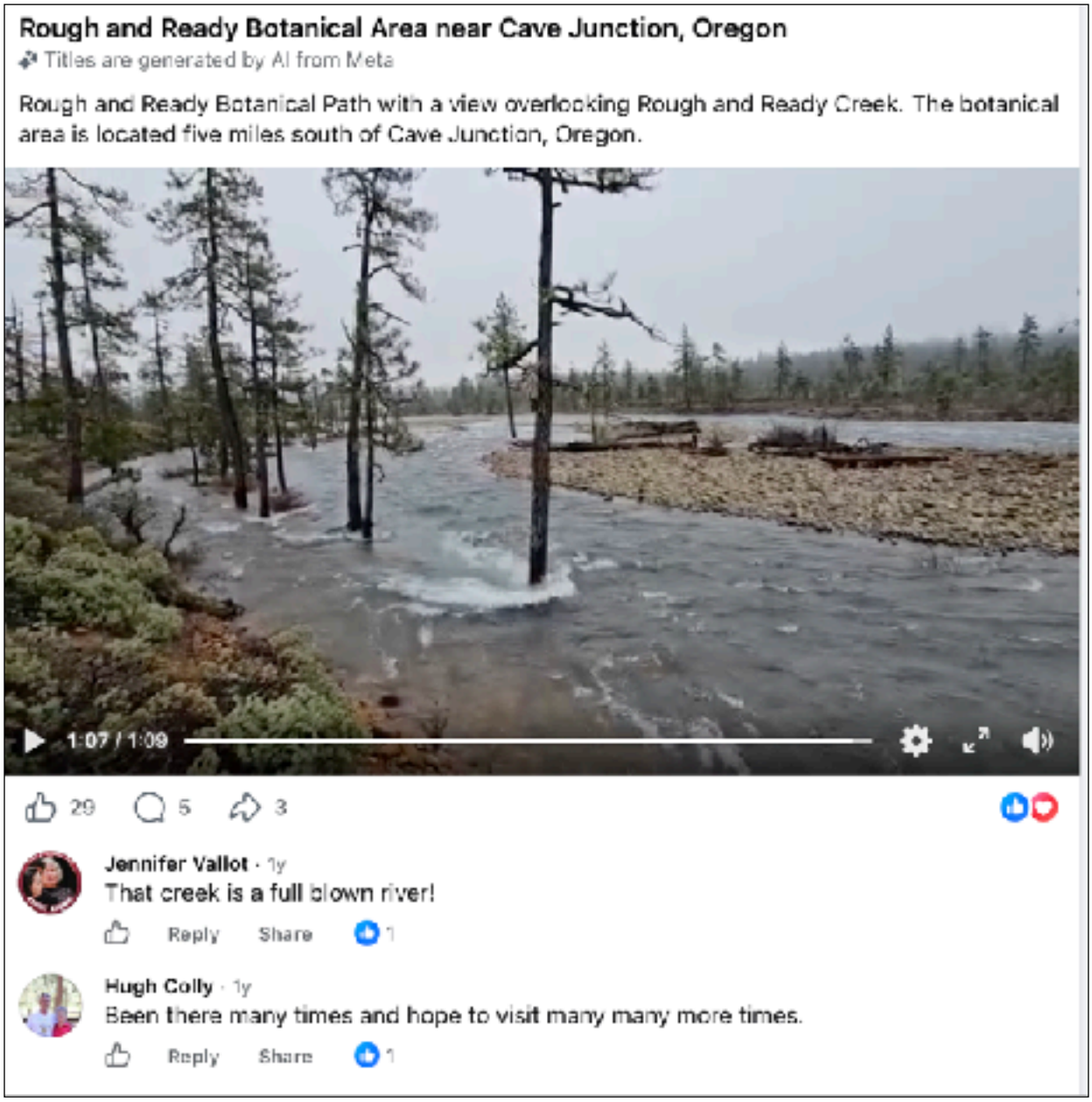
Below - Cars line a turnout along the Redwood Hwy to view the phenomena of Rough and Ready Creek after a rain storm in its headwater as it spreads out across its broad alluvial plain relatively clear in contrast to other streams in the Illinois Valley.



Below - Young and old, friends of Rough and Ready Creek come out even on rainy days to enjoy the spectacle of this unique fluvial system.



The following screen shots are from the Visit Grants Pass Facebook page.[8]



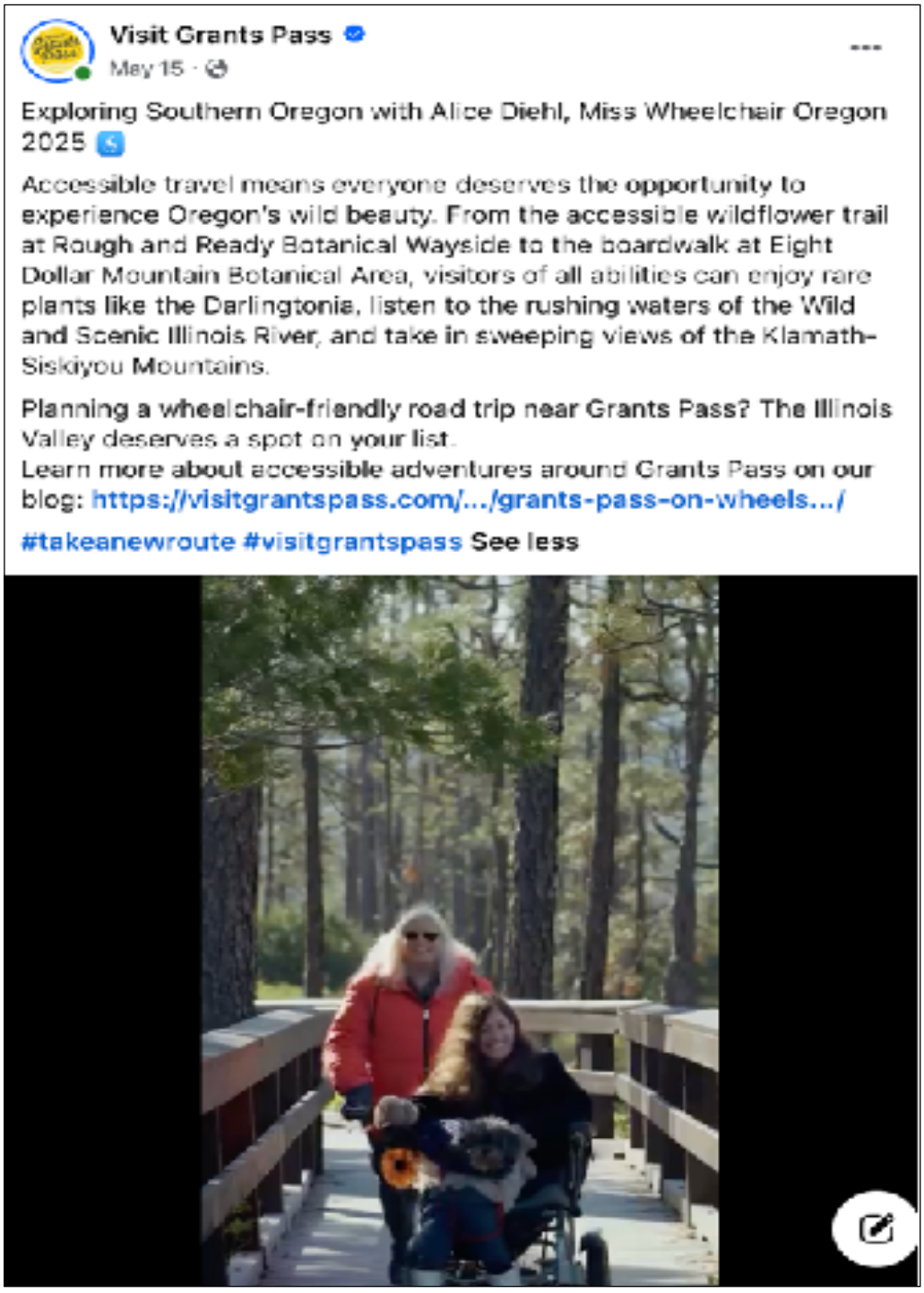
[8] https://www.facebook.com/VisitGrantsPass/

Visit Grants Pass
February 2 ·

Punxsutawney Phil might say 6 more weeks of winter, but we'll be enjoying 60+ degree days all week so get outside and explore the Rough and Ready Trail in the Illinois Valley.

Find unique plant life along this ADA accessible botanical path outside of Cave Junction. This "rainforest desert" is home to thousands of plants that thrive in its serpentine soil. During the winter, manzanita provides a sea of green while colorful wildflowers blanket the landscape throughout spring. The newly improved trail now includes interpretive signs, beautifully carved benches, widened paths, and an extended trail system. #takeanewroute #visitgrantspass **See less**





Thank you again for the opportunity to provide this additional information about the beneficial fiscal impacts of protecting the exceptional water quality, ecological values and critical habitat of the proposed Rough and Ready Creek and the National Wild and Scenic Illinois River Outstanding Resource Waters.

Barbara Ullian
Friends of the Kalmiopsis

Board of Commissioners
Ron A. Smith, Chair
Colene M. Martin, Vice-Chair
Gary L. Richardson, Commissioner
500 NW 6th Street
Grants Pass, OR 97526
541-474-5221

September 2, 2026

Aron Borok
Water Quality Standards
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Re: Request for Josephine County appointment to the Rulemaking Advisory Committee, and request for correction of the draft fiscal impact statement, Outstanding Resource Waters 2027 (Illinois River and Rough and Ready Creek)

Dear Mr. Borok:

Josephine County requests appointment of a County representative to the Rulemaking Advisory Committee for the Outstanding Resource Waters 2027 rulemaking, and requests that the Department correct its draft statement of fiscal and economic impact before proposing a rule.

The reason is specific. The County and the City of Cave Junction are, as of this month, jointly pursuing state funding to plan the extension of municipal water and sewer service along the Redwood Highway corridor to the county-owned Illinois Valley Airport, the former Rough and Ready mill site, and Kerby. Two applications are in progress:

- Josephine County's application to Business Oregon's Industrial Site Loan Fund, **due September 4, 2026**, for up to $250,000 in planning funds.
- The City of Cave Junction's application to Business Oregon's Regional Infrastructure Fund, **due September 16, 2026**, for up to $250,000, with the County as committed partner. The County is ineligible to apply for that program directly; the City is the applicant because it owns and operates the systems the project would extend.

The draft fiscal impact statement does not mention this project. It could not have, since it relies on the City's 2014 Wastewater Facilities Plan and the 2022 NPDES permit renewal fact sheet. But the project is real, it is on a deadline three weeks from now, and the proposed rule bears directly on its central engineering question. The County is not asking the Department to abandon the designation, and this letter assumes the designation will move forward. The County writes on one subject: publicly owned water and sewer infrastructure and the state-funded planning work required to build it. It takes no position in this letter on any private project in either watershed. It is asking the Department to look at the actual facts about that public infrastructure before writing a rule that governs it.

1. The rule reaches this project through proposed OAR 340-041-0275(4)(c)(B)

Proposed subsection (4)(c)(B) provides that no new NPDES discharge, and no increase of an existing NPDES discharge, to waters upstream or tributary to the designated waters may be allowed if the discharge would degrade the water quality of those waters. The Department's own analysis places the City's outfall

approximately five miles upstream of the proposed Illinois River designation. The City's discharge is therefore squarely within (4)(c)(B).

The draft fiscal impact statement treats this as remote. It says that at some point in the future there may be a need to increase the plant's design flow to accommodate population growth, that it is possible a future expansion would not affect the ORW, and that if it did, alternative treatment options might be required at additional cost to City ratepayers. It then concludes that the Department does not expect a fiscal impact to the public.

That framing does not match the record the County can put in front of you:

The driver is not population growth. It is a deliberate economic development project extending sewer service north to Kerby and the Kerby mill site and south to the airport and the former Rough and Ready mill site. It is scoped, it has an engineer's estimate, and it is in front of Business Oregon this month.

The binding constraint is not treatment capacity. It is effluent disposal. The City currently discharges to the Illinois River from November 1 to May 31 and routes effluent to a nearby golf course from June 1 to October 31. The City's Public Works Director advised the County on August 19, 2026 that the golf course is approaching its summer loading limit. The Kerby sewer extension adds flow toward that same constraint. Effluent disposal alternatives are accordingly the headline task of the planning scope now before Business Oregon, not an afterthought.

The most likely engineering answer runs straight into the proposed rule. If summer reuse capacity is exhausted, the obvious alternative is surface discharge during the June through October window. That is the low-flow season, when the Illinois River is water quality limited for temperature and dissolved oxygen, when dilution is least, and when OAR 340-041-0275(3)(a) already imposes the stricter May through October design criteria. A new or extended summer discharge is the alternative most likely to be barred by (4)(c)(B), and it is the alternative the City would otherwise reach for first.

Land application may not be an escape route either. The draft fiscal impact statement notes that a Water Pollution Control Facility permit remains available where there is no discharge to surface water. But the ground south of Cave Junction toward the airport and the mill site lies on or near the Rough and Ready Creek alluvial fan, which the nomination itself describes as a system of braided channels, springs, and extensive exchange between surface water and groundwater. Proposed subsection (4)(c)(C) prohibits any other new discharge to the designated waters that would degrade their water quality or ecological or recreation values. Whether a rapid infiltration or land application facility in that setting would be treated as an "other new discharge" is not answered anywhere in the draft rule or the draft fiscal impact statement, and the City cannot design around a question the Department has not answered.

The Department's capacity figures should be reconciled with the City's. The draft statement reports the plant at 44 percent of wet weather and 40 percent of dry weather design flow as of the 2022 permit renewal, and describes it as operating below capacity. The City reported to the County on August 19, 2026 that the plant treated 136.7 million gallons in 2025 against an annual design equivalent of roughly 189.8 million gallons, which is approximately 72 percent of that annual figure. These are different measures and the County does not suggest the Department's figures are wrong. It does suggest that a fiscal analysis of a municipal utility should rest on the utility's current numbers rather than on a four-year-old permit file and a facilities plan from 2014.

2. The rule's boundary cannot be located well enough to design a pipeline

Proposed subsection (4)(b)(B) would designate all tributaries, springs, associated wetlands and other waters of the Rough and Ready Creek watershed, excluding only a reach of Parker Creek. The Rough and

Ready Creek nomination states that the Redwood Highway crosses Rough and Ready Creek in its lowest reach. The southern leg of the County and City project follows that same corridor to the airport and the former mill site.

The nomination also states that most springs and the wetlands they form in that watershed have not been mapped, and that they can only be tentatively identified from aerial imagery. The nomination's own map does not show them.

A design engineer cannot route a water and sewer alignment around features that have not been mapped. A contractor cannot bid the risk. A public agency cannot certify a cost estimate. The County is not asking the Department to narrow the designation, to enumerate every tributary and spring, or to defer adoption until mapping is complete. It is asking a narrower, practical question: when a public agency designs, bids, and permits a utility project in this corridor, how does it establish where the designated waters begin and end, and who makes that determination, at what stage? This is not an abstract drafting preference. It is a condition of being able to spend the grant funds the County and City are applying for.

3. Timing

The sequence as it now stands puts public money at risk for no good reason.

Date	Event
September 4, 2026	County Industrial Site Loan Fund application due
September 16, 2026	City Regional Infrastructure Fund application due
Mid to late October 2026	Industrial Site Loan Fund decisions
Est. December 2026 to February 2027	Anticipated notice of proposed ORW rulemaking
Spring 2027	Reported target for Environmental Quality Commission action

The planning study will be produced, and the Regional Infrastructure Fund money must be spent, on essentially the same schedule as the rulemaking. The consultant will be evaluating effluent disposal alternatives while the Department is deciding which of those alternatives will remain lawful. Neither the County nor the City can plan against a moving baseline, and the state has no interest in funding an engineering study whose central recommendation a sister agency's rule may foreclose six months later.

4. Federal legislation affecting the same corridor

The County notes for the record that on July 22, 2026, Congressman Cliff Bentz, whose district includes Josephine County, introduced H.R. 9827, the Wildfire Reduction Market Expansion Act of 2026, which was referred to the House Committee on Energy and Commerce. The bill would modernize the definition of renewable biomass under the Renewable Fuel Standard to include forest management and mill residuals. It is bipartisan and bicameral, with Senators Merkley and Hyde-Smith leading the Senate companion and Congressman Thompson joining in the House.

The County takes no position on the bill's prospects. Its relevance here is that a market Congress is actively working to create would require served industrial land near the forest, and the two candidate sites in this valley are the former Rough and Ready mill site and the Kerby mill site. Those are the sites this planning project exists to make development-ready. The draft fiscal impact statement's conclusion that the rule

will not affect the timber industry rests on current Forest Service land allocations and forest practice rules. It does not consider the industrial siting question, and it does not reflect that both the state and the federal government are currently spending effort on the same ground for different purposes. Some coordination is warranted.

5. Requests

A. Appoint a Josephine County representative to the advisory committee. The County designates Gary L. Richardson, Josephine County Commissioner as primary and Rob Brandes, Director of Public Works as alternate. Under ORS 183.333 the Department must ask the committee for its recommendations on whether the rules would have a fiscal impact and the extent of it. The draft statement indicates that request has not yet been made. The County should be seated before it is.

B. Provide written determinations on the following, before notice of proposed rulemaking issues. These are the questions the County and City must answer to spend planning funds responsibly:

1. Would proposed OAR 340-041-0275(4)(c)(B) bar an increase in the City of Cave Junction's permitted design flow, and what showing would the City have to make to obtain one?

2. Would extending surface discharge into the June 1 to October 31 window, currently served by golf course reuse, be treated as a new discharge or as an increase of an existing discharge under (4)(c)(B)?

3. Would a land application, rapid infiltration, or other non-discharge facility sited on or near the Rough and Ready Creek alluvial fan constitute an "other new discharge" under (4)(c)(C)?

4. Would a water and sewer pipeline crossing of Rough and Ready Creek and its associated wetlands along the Redwood Highway qualify for the construction stormwater exception in (4)(c)(A) and (B), and who makes that determination and when?

5. Do the exceptions at OAR 340-041-0004(9) remain available for waters designated under (4), given that federal Tier 3 policy under 40 CFR 131.12(a)(3) does not authorize de minimis lowering of water quality in an Outstanding Resource Water? If they do not, the County asks the Department to say so plainly, because the draft rule's text does not.

6. For design and permitting purposes, how will the extent of the waters designated by (4)(b)(B) be determined, given that the nomination states most springs and wetlands in that watershed are unmapped?

C. Correct the statement of fiscal and economic impact to (i) identify Josephine County as an affected unit of local government, (ii) describe the Illinois Valley water and sewer planning project and the two pending applications, (iii) rest the Cave Junction analysis on the City's current operating figures rather than the 2014 facilities plan and 2022 permit file, (iv) address effluent disposal capacity rather than treatment capacity alone, and (v) revisit the finding of no fiscal impact to the public in light of the foregoing. The County requests that the two Business Oregon applications and the resulting facility planning work be added to the documents relied on.

D. Write the accommodation into the rule or sequence the rulemaking to the planning work. The County's preferred course is the first:

- Proceed on the current schedule, but include in the rule an express provision addressing municipal water and wastewater infrastructure serving the Illinois Valley, comparable in function

to the exceptions for emergency response and restoration activity at (4)(c)(C)(i) and (ii), and applicable to prohibitions (4)(c)(A) through (C); or

• If the Department concludes it cannot draft such a provision on the current record, hold the proposal until the Illinois Valley water and sewer planning study is complete, expected by mid-2027, so the rule can be written with knowledge of the disposal alternatives.

E. Provide the current committee roster, all materials distributed to the committee, and written confirmation of the next committee meeting date, the anticipated notice date, the length of the comment period, and the date and location of the Cave Junction hearing the Department has committed to hold.

6. Closing

The Department's draft fiscal impact statement observes that Cave Junction has experienced economic hardship following the closure of nearly all of the area's lumber mills, and that the area's supplemental demographic index is worse than 80 to 90 percent of the country. The County agrees with that assessment. It is precisely why the County and the City are spending staff time and pursuing two grant applications in parallel to get water and sewer to the valley's remaining industrial ground.

The County has no quarrel with protecting these waters. The Rough and Ready Creek nomination itself notes that an important source of Cave Junction's domestic water is a well on the Illinois River floodplain, and the recreation economy the Department's analysis credits with $155 million a year in this county is this county's economy. The question this letter raises is narrower: whether the rule can protect the waters without foreclosing the basic municipal infrastructure the same community needs.

A rule written without knowledge of that effort is likely to impose costs on the same community the Department's own analysis identifies as most vulnerable, and to impose them through a document that concludes there is no fiscal impact to the public. Seating the County and answering the six questions above would fix that at no cost to the designation's purpose.

Please direct correspondence to Gary L. Richardson: Email GRichardson@josephinecounty.gov or Cellphone No. 541-479-3775. The County is available to meet on short notice, including before the September application deadlines.

Sincerely,

Josephine County Board of Commissioners

Ron A. Smith, Chair

Colene M. Martin, Vice-Chair

Gary L. Richardson, Commissioner

cc:

Leah Feldon, Director, Oregon Department of Environmental Quality
Matt Donegan, Chair, and Members, Oregon Environmental Quality Commission
Jesse Dugas, Mayor, and City Council, City of Cave Junction
Alex Ponder, Public Works Director, City of Cave Junction
Rob Brandes, Director of Public Works, Josephine County
Kerby Water District
Jessica LaBerge, Southern/ South Coast Regional Solutions Coordinator Office of Governor Tina Kotek
Marta Tarantsey Business Oregon Reg Dev Officer Klamath-Lake-Jackson-Josephine
Curry County Board of Commissioners
Senator Noah Robinson, Oregon Legislative Assembly
Representative Dwayne Yunker, Oregon Legislative Assembly
Representative Alex Skarlatos, Oregon Legislative Assembly
Office of Congressman Cliff Bentz
Office of Senator Jeff Merkley
Josephine County Legal Counsel

JOSEPHINE COUNTY

Input for Rulemaking Advisory Committee Meeting 3, Nov. 17, 2026

Questions and suggestions for the revised draft rule and fiscal impact statement

Illinois River and Rough and Ready Creek Outstanding Resource Waters Rulemaking

Proposed amendments to OAR 340-041-0004(8)(d) and new OAR 340-041-0275(4)

Submitted to: Aron Borok, Rulemaking Contact, Oregon Department of Environmental Quality (cc: James McConaghie)

Submitted by: Gary Richardson, Josephine County Commissioner, advisory committee member

Date: October 29, 2026

The County's position and purpose

Josephine County appreciates its appointment to the advisory committee and DEQ's decision to convene a third meeting. The County supports protecting the water quality of the Wild and Scenic Illinois River and Rough and Ready Creek. The County's own Airport Layout Plan for the Illinois Valley Airport describes the Rough and Ready alluvial fan as an asset and directs that airport development not detract from the area's natural integrity. The County's interest in this rulemaking is practical. It owns and operates the Illinois Valley Airport beside Rough and Ready Creek, maintains county roads and bridges in both watersheds, and is the land use authority for the private land within and upstream of the proposed waters.

The County asks for two things: a rule precise enough that landowners, land managers, permit writers and the County can tell where it applies and what it allows, and a fiscal impact statement that accounts for the public infrastructure in the Illinois Valley. The seventeen items below are offered in that spirit, as questions and suggestions for the revised draft. Most of the records needed to answer them are already held by DEQ or other state agencies: onsite septic permits for Josephine County are issued and kept by DEQ's Medford office, NPDES and WPCF permits and general permit registrations are DEQ records, and water rights are Oregon Water Resources Department records. The County supplies what only the County has: the airport parcel boundary, its tax lot layer, and the agency contacts in item 13.

Schedule

1. Revised timeline. The charter anticipated a public comment period in October and November 2026 and EQC action in March 2027.

> ***Request:*** Confirm at the meeting, and record in the meeting summary, the planned filing date for the Notice of Proposed Rulemaking, the comment period dates, the date, location and remote option for the public hearing, and the EQC meeting at which adoption will be considered. The County needs these dates to schedule Board of Commissioners review and to notify the FAA and the Oregon Department of Aviation of the comment period.

Where the rule applies

2. Boundary, acreage and feature inventory. Draft OAR 340-041-0275(4)(a)(C) designates all associated wetlands, small lakes and ponds within the Illinois River watershed, and draft (4)(b)(B) designates all tributaries, springs, associated wetlands and other waters of the Rough and Ready Creek watershed. The Rough and Ready nomination states that most springs and wetlands have not been mapped (p. 5) and that the number of wetlands is unknown because the watershed has not been fully surveyed (p. 20). By the nominators' figures the combined area is roughly 337,000 acres.

> ***Request:*** Publish with the notice DEQ's GIS boundary for each designated watershed, the acreage, DEQ's estimate of stream miles (perennial and intermittent), and the inventory of wetlands, lakes, ponds and springs that DEQ relies on. Consider adopting the boundary map or GIS layer by reference in the rule so that a landowner, land manager, permit writer or the County can determine whether a particular feature is designated.

3. Named tributaries. The North Fork Smith rule, OAR 340-041-0305(4), names the protected tributaries using "include but are not limited to" language.

> ***Request:*** Name the principal tributaries of Rough and Ready Creek and of the Illinois River reach in the same way. Naming gives the public notice of what is protected without narrowing the protection.

4. Parker Creek sub-watershed. Draft (4)(b)(B) excludes the Parker Creek channel from the National Forest boundary downstream to its confluence with Rough and Ready Creek.

> ***Request:*** Confirm whether the tributaries, ditches, wetlands, springs and other waters of the Parker Creek sub-watershed on private and County land are designated, and show the sub-watershed and the exclusion on the boundary map.

How the rule will work after adoption

5. Baseline and natural causes. Draft (4)(c) protects "current water quality" except as altered by natural causes. The nomination reports that the lower reach of Rough and Ready Creek has no surface flow in summer and that the channel migrates across the fan, and both watersheds have burned since 2002.

> ***Request:*** Identify the dataset (stations, parameters, years and seasons) that will define the protected condition for each designated water, and state whether it will be adopted in rule, placed in a support document, or left to case-by-case judgment. Describe how DEQ will define ambient conditions and detect degradation in a reach that is dry during the critical period, and how it will distinguish natural events (wildfire, debris flows, naturally elevated temperature) from a violation.

6. Routine public infrastructure work. OAR 340-041-0004(8)(c) authorizes the commission, when designating an ORW, to "provide a process for determining what activities are allowed that would not affect the outstanding resource values." The draft does not use this authority. Rough and Ready Creek is crossed by Highway 199 and by county roads; the Illinois River reach and its tributaries are reached by county and Forest Service roads.

> ***Request:*** Consider adopting such a process, or at minimum a list of routine public infrastructure activities that DEQ considers consistent with the designation: road and bridge

maintenance, roadside ditch reshaping, culvert replacement, winter snow and ice mitigation, emergency repairs by ODOT, the County and the Forest Service, airport maintenance, and fire-aviation preparedness. Confirm whether ODOT's 2300-A coverage for roadside vegetation management would continue within the designated watersheds. A process of this kind serves DEQ as well as the County: it reduces complaint-driven, case-by-case determinations after adoption.

7. Onsite systems, infiltration and WPCF facilities. The draft fiscal impact statement treats a Water Pollution Control Facility permit as the alternative available to a facility that cannot obtain an NPDES permit. If DEQ adopts the nominators' view that springs and wetlands are connected to the creek through fractures, the hyporheic zone and the aquifer, that alternative may not be open within the watersheds.

Request: Confirm whether new or expanded onsite septic systems, stormwater infiltration, and WPCF-permitted no-discharge facilities within the designated watersheds would be treated as discharges to the designated waters under (4)(c)(C). This question matters for Kerby, Selma and the private inholdings as well as for the airport (item 9).

The Illinois Valley Airport

Josephine County owns the Illinois Valley Airport, a public-use airport of about 175 acres on the Rough and Ready alluvial fan, about 0.1 mile north of the creek and adjacent to the Rough and Ready Creek Area of Critical Environmental Concern and botanical wayside. The County is a federally obligated Airport Improvement Program sponsor with an FAA-approved Airport Layout Plan. Its grant assurances require it to keep the airport operating and maintained, to pursue compatible land use and wildlife hazard mitigation around the airport, and to maintain and implement the ALP. The airport was built in 1940 for aerial firefighting, served as the Siskiyou Smokejumper Base from 1943 to 1981, and has served as a helibase and staging field for Forest Service and Oregon Department of Forestry incidents from 2014 through 2025, including the Happy Camp, Gasquet Complex, Chetco Bar, Natchez, Smith River Complex and Moon Complex fires.

The airport holds no NPDES permit. It has no stormwater outfalls and no conveyance system: the 2020 Stormwater Management Plan prepared for the runway rehabilitation documents soils with infiltration rates of 120 to 360 inches per hour, so runoff infiltrates where it falls and the site produces no surface discharge. An unnamed seasonal ditch enters the property from the west, divides at a diversion structure, and leaves in two channels, one to the north and one eastward through a culvert under the runway. Neither the draft rule nor the draft fiscal impact statement mentions the airport.

8. Where the airport sits. The nomination describes the alluvial fan as hydraulically connected to the creek through the hyporheic zone and the local aquifer.

Request: Show the airport property and the unnamed ditch on the boundary map, state whether the ditch and any wetlands or ponds on the property are designated waters, and state what receiving water, if any, DEQ would assign to the airport. The County will supply the parcel boundary.

9. The airport industrial park. The ALP designates a sixteen-lot industrial park as future development on the airport. The lots are not yet served by water or wastewater, and the County

is actively working to provide both. The park is the County's principal economic development project in the Illinois Valley, a community that DEQ's own screening places worse than 80 to 90 percent of the United States on the supplemental demographic index, driven by unemployment. Wastewater for the park will be a new no-surface-discharge system within the Rough and Ready Creek watershed, and stormwater will be managed by infiltration as it is across the airport today.

> ***Request:*** Confirm that a new WPCF-permitted or onsite wastewater system and infiltration-based stormwater management for the park would not be "new discharges" under (4)(c)(C); describe the review the park's utilities and a new tenant would face after designation; and address the park in the fiscal impact statement, which relies on the WPCF alternative being available.

10. General permit coverage after designation. DEQ's May 2, 2018 memorandum on general permits directs that general permit coverage not be assigned for discharges to outstanding resource waters, or to upstream waters where the discharge would lower water quality in the ORW, and DEQ's 1200-Z and 2300-A materials already carve out the three existing ORWs. Future Airport Improvement Program projects will need 1200-C construction stormwater coverage, and industrial park tenants whose activities require it would need 1200-Z coverage.

> ***Request:*** State whether 1200-C and 1200-Z coverage would be available within the designated watersheds after designation or whether individual permits would be required, whether DEQ intends to amend the general permits to add these waters, and whether the construction stormwater exception in (4)(c)(C) is intended to cover airport construction projects.

11. Routine airport operations. ORS 836.623 restricts new water impoundments near runway ends and requires bird-hazard information to be forwarded to the FAA; OAR 660-013-0080 requires the County to regulate land use around the airport accordingly; and FAA Advisory Circular 150/5200-33 recommends separation between airports and wildlife attractants such as ponds and wetlands. Draft (4)(c)(C) prohibits "any other new discharge" that would degrade the designated waters, with exceptions only for construction stormwater, emergencies and restoration.

> ***Request:*** Confirm whether routine airport activities (mowing and vegetation management, pavement maintenance, maintenance of the culvert and ditch, future aircraft fueling, and wildlife hazard measures the FAA may require) are "discharges" within (4)(c)(C), and explain how the rule will operate alongside the County's obligations under state airport law and FAA requirements.

12. Certainty before adoption. The County is not asking DEQ to lower protection for the creek. It is asking for certainty, before the rule is adopted, that a federally obligated airport can keep operating and developing beside it.

> ***Request:*** Evaluate, and describe in the notice, one of the following, in the County's order of preference: (a) a statement in the notice that infiltration-based development at the airport and a no-surface-discharge wastewater system for the industrial park are consistent with the rule; (b) a process under OAR 340-041-0004(8)(c) (item 6) that identifies these activities in advance as allowed; or (c) if DEQ cannot give the first, exclusion of the airport property and

its drainage area from the designation, consistent with the exclusions already drawn for private land on Parker Creek, Deer Creek and the Recreational River reach.

13. Coordination with the FAA and the Oregon Department of Aviation. Neither the FAA Seattle Airports District Office nor the Oregon Department of Aviation has contacted the County about this rulemaking, and the County has seen no indication that either has been consulted.

Request: Confirm whether DEQ has consulted either agency. If not, the County asks DEQ to do so before filing the notice. The contacts are Jared Wingo, FAA Seattle Airports District Office, (206) 231-4119, jared.l.wingo@faa.gov, and Andria Abrahamson, Oregon Department of Aviation, (503) 378-4881, andria.abrahamson@odav.oregon.gov. The County also asks whether DEQ has reviewed the ALP and the County's airport overlay zone, both public County documents, and whether the airport will be included in DEQ's land use compatibility review for this rulemaking.

Fiscal impact statement

ORS 183.335 places the fiscal impact statement with DEQ, and ORS 183.333(3) and (4) require DEQ to seek the committee's recommendations on whether the rule will have a fiscal impact, its extent, and its effect on small businesses, and to consider those recommendations in preparing the statement. The County offers the following for the revised draft. The records needed for most of these items are DEQ's or OWRD's own.

Answers to the four questions DEQ must put to the committee. (1) Yes, the rule will have a fiscal impact beyond the one the draft identifies for the City of Cave Junction: it reaches the County and ODOT as road authorities, the County as airport sponsor (items 9 and 10), and ratepayers and property owners in Cave Junction, Kerby and Selma. (2) The extent cannot be stated until DEQ inventories the permittees, landowners and public facilities within and tributary to the designated waters (item 16) and analyzes the Cave Junction scenarios (item 15). (3) The draft's small business discussion addresses forest-sector businesses; it does not inventory the small businesses within the watersheds that hold general permit registrations or own private inholdings, or the prospective tenants of the airport industrial park, so whether the impact on small business is significant cannot yet be answered. (4) The measures that would reduce the impact are in items 2, 3, 6 and 12 (a published boundary and named tributaries, the (8)(c) allowed-activities process, and a list of routine public infrastructure activities consistent with the designation) and in the alternatives at item 17.

14. Add the other affected governments. The draft identifies the City of Cave Junction as the only affected local government and DEQ as the only affected state agency.

Request: Add Josephine County as airport sponsor, as road authority for county roads and bridges in both watersheds, and as land use authority for private land within and upstream of the designated waters. For the County the cost questions are the water and wastewater infrastructure and the permitting path for the industrial park (items 9 and 10), stormwater design on the alluvial fan, individual permitting if general permit coverage is unavailable, FAA environmental review of future Airport Improvement Program projects against a Tier 3 water, and schedule risk to the County's entitlement funds. Add the Oregon Department of Transportation (the Highway 199 bridge and culverts over Rough and Ready Creek, maintenance, winter snow and ice mitigation, and roadside vegetation management under

the 2300-A permit), the Oregon Department of Aviation and the Oregon Department of Forestry.

15. Cave Junction, Kerby and Selma, and the housing statement. The local government section finds that a future plant expansion "may require alternative treatment options ... with additional cost to Cave Junction rate payers," while the public section finds no fiscal impact to the public. Ratepayers are the public. Selma and Kerby, unincorporated communities on the Highway 199 corridor upstream of the Illinois River reach, have septic-limited soils and may need wastewater solutions within the reach of draft (4)(c)(B). The housing-cost statement describes the area as "almost exclusively publicly owned with no residential development," while the draft itself identifies about 31 private inholdings, the Parker Creek private land lies within the Rough and Ready Creek watershed, and the upstream clause reaches all three communities.

Request: Analyze the foreseeable scenarios for the Cave Junction plant (a design-flow increase, changes to the seasonal discharge window, limits on the golf-course land application that receives effluent from June through October) and estimate the cost per household for a small utility; add Kerby and Selma to the local government and public analysis; and revise the housing statement to reflect the private land actually affected. For the environmental justice considerations under ORS 182.545 that the charter asks the committee to address, the County suggests that the analysis treat the community's public infrastructure, including the airport industrial park and the valley's wildfire response infrastructure, as part of the picture rather than treating the designation as cost-free for a community whose principal burdens on DEQ's screening are unemployment and wildfire smoke.

16. Inventory non-forest interests. The draft counts forest acreage and inholdings but no commercial, industrial, municipal or aviation uses.

Request: Inventory existing water rights, NPDES and WPCF permits, and onsite systems within or tributary to the designated waters, and confirm that each holder has been contacted. The County's tax lot layer for the Rough and Ready Creek watershed and the Illinois River direct-tributary watersheds, including the Parker Creek sub-watershed (item 4), is available to DEQ on request. The permit, onsite and water right records are DEQ's and OWRD's; onsite system permits for Josephine County are issued and kept by DEQ's Medford office.

17. Alternatives considered. ORS 183.335(2) requires the notice to request public comment on whether other options should be considered for achieving the rule's goals while reducing its negative economic impact on business.

Request: Describe in the notice the alternatives DEQ considered, including designating named waters rather than all waters in a watershed, limiting the Rough and Ready Creek designation to the perennial upper forks above the National Forest boundary, and protection modeled on the Three Basin Rule (OAR 340-041-0350), which DEQ's 2023 nomination fact sheet identifies as a form of protection it may consider for nominated waters.

Drafting notes

Draft (4)(a)(C) refers to waters associated with "(4)(a)(i) and (ii)" where the subparagraphs are lettered (A) and (B); draft (4)(c) refers to exceptions "(4)(c)(i)-(iii)" where (4)(c)(C) lists two; and (4)(b)(B) reads "Rogue-River Siskiyou National forest." Draft (4)(a)(D), the Eight Dollar Mountain Botanical Wayside, does not appear in the nominations' lists of nominated waters; the notice could identify its source and whether those waters are already designated as direct tributaries under (4)(a)(B).

The County looks forward to the discussion on November 17.

Gary Richardson, Josephine County Commissioner, (541) 474-5221 extension 3205
grichardson@josephinecounty.gov

KALMIOPSIS AUDUBON SOCIETY
P.O. Box 1265 • Port Orford OR • 97465

August 26, 2026

To: Aron Borok
Re: Illinois River and Rough and Ready Creek Outstanding Resource Waters, Draft Fiscal Impact Statement

Dear Mr. Borok:
I am writing on behalf to the Kalmiopsis Audubon Society. Our group has more than 400 members in Curry County who care about conserving habitat for birds, fish, and wildlife and stewardship of public lands in our region, including our outstanding collection of National Wild and Scenic Rivers. For that reason, we appreciate the opportunity to serve on the Outstanding Resource Waters (ORW) Rulemaking Advisory Committee and the opportunity to comment on the Oregon Department of Environmental Quality's (DEQ) draft Fiscal Impact Statement for the proposed Wild and Scenic Illinois River and Rough and Ready Creek Outstanding Resource Water (ORW) designation.

Based on DEQ's presentation at the recent ORW Rulemaking Advisory Committee meeting, we recognize that the Fiscal Impact Statement (FIS) is intended to have a very specific format. Based on ORS 183.335(2)(b)(E), it appears that economic "effect" includes both positive effects and potential impacts.

We appreciate that DEQ has identified and included some of the economic value that will come with ensuring that high-quality waters are protected into the future. We recommend that the FIS should also account for additional clean water economic values accruing across a broader area.

Economic values of exceptional water quality in Josephine County
The current draft of the FIS focuses primarily on that value in terms of recreation in Josephine County. This is important, as the Wild and Scenic corridor of the Illinois River from Eight Dollar Mountain downstream to Brigg's Creek is a cherished local recreational resource, where literally thousands of people come to swim, camp and find refreshment from summer's heat. Photos of the traffic jams are a testament to the high value that many people place upon experiencing the river –in other words, it's worth their time getting stuck in traffic! (see Attachment A).

Additionally, the U.S. Forest has made significant public investments in this beloved recreational corridor –with an estimated $1.3 million invested in campgrounds and access areas from 2005- 2014.[1] We are aware that additional monies have been invested into roadwork in this section over the past decade, too, but could not secure specific accounting.

Just downstream, the wildest part of the Illinois River also draws recreational users to exceptional and more remote whitewater and hiking experiences. Multi-day commercial and private whitewater river trips provide excitement for rafts and kayaks on this river reach that is reputed to be the most remote, inaccessible river segment in the lower 48 states, offering a wholly unique and highly-sought-after experience.

This reach of wild river also features the National Illinois River trail. Though the trail is not specifically water dependent –trail users are no doubt drawn to the scenic vistas that feature the clear or blue-tinted waters of the Illinois River and opportunities for remote swimming and camping.

Both the whitewater and trail users also contribute economic value to the local economy not only paying for guides and equipment but also by spending money in local lodging, camping, gas, and food business establishments.

The bottom line is that with all the public investment and use, the Wild and Scenic Illinois corridor in Josephine County must be regarded as a significant natural and economic asset for the public, with knock-on effects that ripple through the local economy as people stop at restaurants, shops, and gas stations coming and going.

Rough and Ready Creek contributes its own smaller scale version of outdoor recreation--including swimming, hiking, and boating, as well as botany natural history study--to the mix of activities that make up the local tourism economy and way of life of Illinois River Valley residents. Rough and Ready Creek also contributes its clear flows to the Illinois River and helps to recharge the aquifer of the Illinois Valley, which supplies drinking water via wells in the valley to residents and to the City of Cave Junction. Through its flows and fishery values, Rough and Ready Creek contributes to the values of the downstream wild and scenic recreational corridor of the Illinois, too.

Economic values for exceptional water quality <u>downstream</u> in Curry County

While economic values of the clean water provided by Rough and Ready Creek and the Wild and Scenic Illinois River in Josephine County are clearly significant, we recommend that DEQ also include recognition of the substantial economic values for the downstream benefits that will come with the proposed ORW designation. By contributing significant flows of clean water and excellent spawning habitat, the Illinois River and its tributaries and associated wetlands

[1] Correspondence, District Ranger Pam Bondi to *Grants Pass Courier*, Nov. 20, 2006; Regional Forester James Pena to Rich Nawa, Sept. 11, 2014, available upon request.

also contribute economic values to lower Rogue River communities in Curry County for outdoor recreation-related tourism, for fisheries, and for drinking water and other ecosystem services.

Regarding the economic value of outdoor based recreation, the most recent economic study on this topic in Oregon ("Economic Analysis of Outdoor Recreation in Oregon: 2022 Update") found that Curry County had outdoor recreation trip-related spending of $5.34 million overall.[2] While this includes all recreation and it is not possible to discern a sub-value directly attributable to the Illinois River, the beautiful clear water of the Illinois contributes to key local tourism businesses focused on the lower Rogue River, including dozens of fishing guide services, a sea kayaking outfitter, several lodges and campgrounds, as well as the renowned jet boats.

Also, this 2022 study identified that outdoor recreation in general contributes $12 billion to Oregon's gross domestic product, with many Oregon-based companies providing equipment and gear to recreational users who enjoy public lands in general. The study identified specific public lands, including the Siskiyou National Forest and the Forks of the Illinois State Park, as some of many sites that benefit outdoor recreation overall, thereby creating economic value in a broader sense. The Wild and Scenic Illinois and Rough and Ready Creek contribute to that larger value.

Regarding fisheries, "The Economic Value of Rogue River Salmon," (2009) provides the most up to date available information about the economic value of commercial fishing, of the recreational sport fishery, and a of "non-use values" of Rogue basin salmon.[3] "Non-use values" refers to the inherent value of salmon and more specifically the costs that Oregonians have consistently stated they'd be willing to pay more to improve salmon habitat in our state because to ensure that salmon can persist into the future. The report found that the economic value of the Rogue River for commercial salmon fishery was not less than $1.36 million annually —adjusted for inflation, that's $2,109,224 today; for sport fishing, they found it to be not less than $16 million, adjusted for inflation, that's $24,814,400 today; and for non-use value, they estimated the implicit value of all Rogue River salmon and steelhead runs to be approximately $1.5 billion —adjusted for inflation, that's $2.33 billion today. (According to the report, households in the Pacific Northwest indicated willingness to pay over eight hundred dollars per fish ($ 1,240.72 today) for salmon preservation and Oregonians consistently stated a willingness to pay at least $70 million annually ($108,563,000 in today's dollars) to enhance salmon habitat in the state.) I am attaching that report so you can review the rigorous methodology of this economic study.

Of course, this is for the whole Rogue basin. But it must be emphasized that the Illinois River contributes about 25 percent of flow to the lower Rogue, and tributaries to the Illinois are widely considered to be important habitat for both steelhead and coho. Although there is not a

[2] Earth Economics, "Economic Analysis of Outdoor Recreation in Oregon: 2022 Update"(2023).

[3] EcoNorthwest, "The Economic Value of Rogue River Salmon," (2009), 22,25. Adjustments for inflation were calculated using Bureau of Labor Statistics cumulative CPI inflation rates.

good way to figure out exactly how much of the benefit of lower Rogue River fisheries derives from the Illinois River, in asking fish biologists about the contribution of the Illinois to Rogue fisheries, I've heard estimates ranging from 10 to 25 percent. If the focus were put solely onto steelhead, it's likely that the majority caught in the lower Rogue come from the excellent steelhead-producing tributaries of the lower Illinois River, including Silver, Indigo and Lawson Creeks. Studies conducted by the U.S. Forest Service to evaluate key watersheds also underscore the importance of the Illinois tributaries to both the flow of the river and to the productivity of its fisheries to the larger Rogue basin fisheries, especially that of the lower river.[4] (See Appendix C)

Another economic study commissioned by the Oregon Department of Fish and Wildlife (ODFW) "Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon, 2008 State and County Expenditures Estimates," evaluated expenditures related to fishing throughout Oregon relying on different metrics to develop county-by-county specific estimations for 2008.[5] The economists, Runyan and Associates, determined that travel-related expenditures related to fishing in Curry County were $9.3 million. That's roughly $14.5 million adjusted for inflation. (Travel-generated expenditures include total travel spending made by Oregon residents and nonresidents in the county of destination, plus other specific trip-related purchases such as gasoline, food and beverages, and other retail purchases made before or while traveling to the destination.) The study also documented the not insubstantial share of economic value contributed by local recreational expenditures as $935,000, which adjusted for inflation would be $1.45 million. These numbers include all fishing in Curry County, which includes all rivers and both fresh and salt water (Rogue salmon become part of the ocean fishery, too). The study also parsed out travel generated expenditures related to just freshwater fishing, which they calculated to be $4.45 million, which adjusted for inflation would be $6.9 million in today's dollars. Local expenditures for freshwater fishing were determined to be $673,000 or over $1 million in today's dollars. While these estimates include fishing on all local Curry County rivers, another study found that number of guided fishing trips that occur on the Rogue River is estimated to be more than twice that of trips on other local Curry County rivers –and so, though all contribute, the lower Rogue fishery, creates a lion's share of economic benefits.[6]

Another Sea Grant study estimated the economic value of guided fishing trips on the Rogue River using the 1996-97 fishing seasons as their focus.[7] The study surveyed 42 percent of fishing guides. Extrapolating to the full number of guides, there were an average of 13,350 guided fishing day trips per year, at a cost of $257 each, which translated into $3.4 million per year of direct economic value. Adjusting for inflation, that would be approximately $7 million per year. The paper recommends using an economic multiplier of 3.0 to estimate total economic activity.

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[4] U.S. Forest Service, Siskiyou National Forest, Silver Creek Watershed Analysis (1995).

[5] Dean Runyan and Associates, "Fishing Hunting Wildlife Viewing and Shellfishing in Oregon, 2008 State and County Expenditures Estimates," (2009), 18-19, 23.

[6] Jim Waldvogel, Sea Grant, "Southern Oregon/Northern California Salmon and Steelhead Fishing Guides Use and Economic Analysis, 1996 – 1997," (2008).

[7] Ibid.

Using that multiplier and adjusting for inflation, one-day guided fishing trips on the Rogue River represent an estimated $21 million in total annual economic activity in 2026-equivalent dollars.

The water quality of the Illinois also contributes to valuable habitat for birds, fish, and wildlife in the Rogue River estuary, which hosts one of the highest concentrations of osprey in Oregon. The value of wildlife watching is also considerable in Curry County –and, on the lower Rogue River is focused through outfitters focused on sea kayaking and jet boats but also through visitors and residents who use the lower Rogue River trail and the boat basin. According to the Runyan report, travel generated expenses for wildlife watching in Curry County were $10 million in 2008, which adjusted for inflation is $15.5 million.[8]

More generally, the Southwest coast of Oregon —the area downstream of the Illinois confluence with the Rogue River— has promoted itself as "Oregon's Wild Rivers Coast," or "America's Wild Rivers Coast," with significant investment over several decades toward promoting the region based on the outstanding values of its high concentration of National Wild and Scenic rivers, which includes the National Wild and Scenic Illinois River, protected for outstanding values that depend on its exceptional water quality. (See: www.oregonswildriverscoast.com) The very identity of our region is literally tied to our wild rivers, which is a hard value to quantify economically, but it is extremely valuable.

It's also important to recognize the "ecosystem services" values of the Illinois River's excellent water quality to downstream areas. These include contributing to clean drinking water for the City of Gold Beach, which taps subsurface infiltration galleries underneath the Rogue River downstream of the Illinois confluence for its water supply. The clarity of the Illinois no doubt contributes to the high quality of this drinking water source, which helps to reduce the city's costs for water treatment, which in city's that do not have such a clean water source need to pay much more. The clean, clear water also contributes to property values for homes along the lower Illinois and Rogue rivers.

Finally, it's important to underscore, especially for the Wild and Scenic Illinois River, that its water quality was expressly determined to be exceptional –and in the parlance of the National Wild and Scenic Rivers Act –"outstandingly remarkable" –so much so as to be designated by the U.S. Congress in a bipartisan manner. The gem-like clarity of this clean water resource must be considered rare, nationally significant, and for that reason, utterly priceless. (See Appendix C).

All in all, the economic value of ensuring the high-quality waters of the Wild and Scenic reach of the Illinois River and upstream tributary Rough and Ready Creek are protected into the future for all these values is considerable and should be recognized in the Fiscal Impact Statement.

We recommend that the accounting of these values may fit best in either the executive summary section or in the section titled "Public."

[8] Dean Runyan and Associates, 23.

If the high quality of these waterways were to be degraded in the future, it would substantially reduce and put at risk the many currently existing economic values that clean water supports in our region.

Potential costs to local government

In its costs of compliance to local government section, the draft FIS suggests some potential for future cost to the community of Cave Junction if population growth would someday necessitate expanding its wastewater treatment plant. During the recent ORW RAC meeting, DEQ staff indicated that DEQ did some prospective modeling to assess the likelihood that a future wastewater treatment plant expansion would lead to impacts on the proposed Wild and Scenic Illinois River ORW (located 5 miles downstream) and found that it would be unlikely that there would be effects. This information should be included in the Fiscal Impact Statement (FIS). Also, it would be helpful to understand how the Rogue River TMDL requirements and ORW intersect in this scenario —as is described on p. 5 for the Small Businesses section.

Because the City's Wastewater Treatment Master Plan indicates the city is operating at only 40 percent of its permit capacity, the size of the community would need to double before it would be necessary to consider expansion of the wastewater treatment plan. According to the City's Wastewater Treatment Master Plan (p. 2-11), there may be limitations on growth related to the availability of land within city limits, zoning, and the density of housing that would make a doubling of population unfeasible. If DEQ includes the scenario of population growth causing the need for expanding the waste water treatment plant in the FIS, it should make every effort to verify that such a scenario is actually feasible and would occur in a time frame that is within a reasonable scope of the FIS.

Racial Equity and Environmental justice

In the section about Racial Equity, we recommend that DEQ confer with the RAC Tribal representative on wording to convey that the clean water values of the proposed ORW reaches remain important today to the indigenous people whose ancestors once inhabited the project watersheds. In the section about environmental justice, we recommend a minor edit in the third paragraph for clarity: after the word "occurs," add "on private forest lands" to make the distinction between timber harvest rules on federal and private lands.

Thank you for considering our comments.

Sincerely,



Ann Vileisis
President, Kalmiopsis Audubon Society

APPENDIX A: RECREATIONAL VALUES IN THE WILD AND SCENIC ILLINOIS CORRIDOR

The Wild and Scenic Illinois River in Josephine County (from the boundary near Eight Dollar Mountain downstream) is an outstanding natural economic asset.





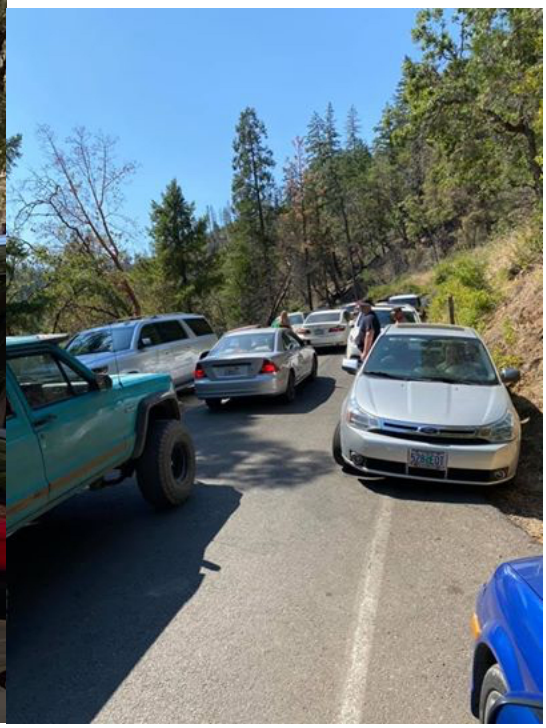
It’s not uncommon for 1,500 people to visit this scenic, clear-watered canyon on summer weekends.







Traffic jams are a testament to the high value that many people place upon experiencing the exceptional clear water of the Wild and Scenic Illinois River –in other words, it’s worth getting stuck in traffic!



“Congress added southwest Oregon’s Illinois River to the National Wild and Scenic River System in 1984, recognizing its nationally outstanding fisheries, water quality, scenery, recreation, and botanical values. The importance of the designation can be seen today in the visitors who travel along the river’s scenic section, where thousands seek the relief of its clear waters during hot summer days. The Illinois River shines as one of the West’s premier whitewater rivers and as a wild salmon and steelhead refuge.” —from Rivers.gov

APPENDIX B:
EXCEPTIONAL WATER QUALITY AS PRICELESS

There are certain ways in which Rough and Ready Creek and the Wild and Scenic Illinois River are simply priceless –in that they have rare values that must be considered exceptional or in the parlance of the National Wild and Scenic Rivers Act "outstandingly remarkable."



For example, the color of the utterly clear water is breathtaking!

"The color of the water is exceptional. The blue-green color provides striking contrasts with the surrounding environment.*"—From, U.S. Forest Service, 1977, A Proposal: Illinois Wild and Scenic River, Study Report, Siskiyou National Forest.*

APPENDIX C:
VALUE OF ILLINOIS RIVER AND ITS TRIBUTARIES TO ROGUE FISHERIES

While we could find no specific economic studies related to the fisheries values of the Wild and Scenic Illinois River, the river and its tributaries contribute significantly to the lower Rogue River fishery, which has known, substantial economic values. These excerpts from some U.S. Forest Service watershed analyses document the contributions of the Illinois River and some of its tributaries to the fishery values of the Rogue.

*"The very clear water in **Josephine Creek** and its major tributaries is a key component to the beneficial uses of fisheries and Recreation (visual quality) in the watershed."*

*"The **Josephine Creek** watershed is very important to survival of wild salmonid genetic diversity in the Illinois River drainage. The cool, clean water and favorable habitat conditions in Fiddler Gulch and Canyon Creek are particularly important. Canyon Creek is considered a key stream for the maintenance of wild salmonid fish in the Illinois River by the Oregon Department of Fish and Wildlife and American Fisheries Society*."
--U.S. Forest Service, Siskiyou N.F., "Wild and Scenic River Eligibility Study for Josephine Creek and Tributaries," (1992), 9-12.

*"**Silver Creek** is one of two most important tributaries (Indigo Creek is the other), in terms of wild fish production, in the Illinois River Basin. The large size of the basin provides an extensive amount of high quality habitat. These pristine conditions, large, deep pools, excellent water quality, and cascade habitat with pocket pools provide excellent rearing conditions for salmonids. In addition, inaccessibility to fishermen provide juvenile steelhead excellent conditions to rear to smolt size without fishing pressure. Water temperatures are cooler than most other tributaries in the basin."*
-- U.S. Forest Service, Siskiyou National Forest, Silver Creek Watershed Analysis, 1995.

*"[T]he **Indigo Creek** drainage is locally known to be of exceptional quality for fisheries. The water quality is good to excellent; which is one main reason for the exceptional quality and productivity for fisheries; and the scenic values inherent in Indigo Creek."*

*"**Indigo Creek** is a major tributary to the lower Illinois River. It, along with other major tributaries of the Illinois River, are producers of anadromous salmonids that contribute to the world famous Rogue River fishery.**"***
-- U.S. Forest Service, Siskiyou National Forest, Wild and Scenic River Eligibility Study: Indigo Creek and Its Tributaries, 1994, 9-10.

*"The primary beneficial use [of Lawson Creek] is the andromous fishery….**Lawson Creek** has about 4 miles of habitat that fall chinook salmon can access, and winter steelhead can access about 9 miles of habitat."*
--U.S. Forest Service, Siskiyou National Forest, Lawson Creek Watershed Analysis, 1995.

*"Fish habitat in **Lawson Creek** is diverse and can qualitatively be considered excellent*."
--U.S. Forest Service, Siskiyou National Forest, Lawson Creek and its Tributaries Wild and Scenic River Eligibility Assessment, 199X.

Comments on the Fiscal Impact Analysis for the Proposed ORW Rulemaking for the Illinois River and Rough and Ready Creek

Zach Collier
President, Kalmiopsis Guides Association
Owner and Operator, Northwest Rafting Company

I am submitting these comments on my own behalf and on behalf of the two other commercial outfitters currently permitted by the U.S. Forest Service to run rafting trips on the Wild and Scenic Illinois River, ARTA River Trips and Momentum River Expeditions. Together, our three companies make up the entire commercial rafting industry on the Illinois River.

We strongly support DEQ's proposed rulemaking to designate the Illinois River and Rough and Ready Creek as Outstanding Resource Waters (ORW). I also want to add some perspective to the Draft Fiscal Impact Statement (FIS) from businesses that depend directly on the clean water and wild character of this watershed.

I have guided and outfitted trips on the Illinois River for close to two decades, and it remains my favorite river in the world. The Kalmiopsis Guides Association worked with Friends of the Kalmiopsis to formally nominate Rough and Ready Creek for ORW designation in 2024. We did that because those of us who make our living on these rivers understand that clean water and wild places are not simply a backdrop to our businesses. They are what we sell.

Clean Water Is the Product We Sell

The Illinois is one of the last rivers on the West Coast without a hatchery program, which means the fish our guests see are truly wild. It flows through the Kalmiopsis Wilderness with water that has a clarity and color our guests consistently tell us they have never seen anywhere else.

That exceptional water quality is a big part of why people travel from around the country, and sometimes around the world, to raft the Illinois River.

People do not book a three- or four-day wilderness rafting trip on the Illinois because it looks like every other river. They come because it is exceptional. Protecting the existing water quality helps make sure it stays that way.

The Draft FIS concludes that the ORW designation would have minimal to no fiscal impact on existing businesses because it does not impose significant new requirements. From the perspective of the rafting industry, that is exactly right.

This designation costs us nothing to comply with. We do not need to discharge anything into the river to operate our trips. At the same time, it helps protect the resource our businesses depend on.

The Illinois River Supports Jobs and Spending in Josephine and Curry Counties

Our guests travel from across the country and internationally to raft the Illinois River. Their economic impact begins well before they get on the water.

Guests stay in Grants Pass and other nearby communities, eat at local restaurants, buy last-minute gear and supplies, and purchase fuel. Our companies purchase food, equipment, vehicle services, lodging, fuel, and other supplies locally. We also hire guides, shuttle drivers, and other seasonal employees.

At the end of an Illinois River trip, that economic activity moves downstream into Curry County. Trips finish near the confluence with the Rogue River near Agness, with guests, guides, shuttle drivers, and support vehicles continuing through communities such as Gold Beach.

A single Illinois River trip brings economic activity to both Josephine and Curry Counties.

Commercial trips are only part of this economic impact. Many private groups also run the Illinois River each year. Those boaters stay in hotels, eat at restaurants, buy fuel and supplies, and hire local shuttle services.

What a Guest Actually Pays to Raft the Illinois

Based on 2026 published rates among the permitted Illinois River outfitters, a typical four-day, three-night wilderness rafting trip costs roughly $1,900 to $2,500 per person. That generally includes transportation from Grants Pass, professional guides, camping equipment, and meals.

The Illinois River is not a high-volume commercial rafting destination. Wild and Scenic River regulations limit group sizes and commercial use, so the number of trips we can operate each year is limited.

A typical commercial trip represents roughly $15,000 to $20,000 in direct guest spending with an outfitter. That does not include what those guests spend before and after the trip on hotels, restaurants, fuel, supplies, and other local services.

For our three companies, the economic value of the Illinois River is straightforward. We earn revenue by taking people down one of the cleanest and wildest rivers in the country. If the qualities that make the Illinois River exceptional are degraded, the value of the experience we provide is degraded along with it.

The Illinois River Is Part of a Larger River Recreation Economy

The economic importance of clean rivers in southwest Oregon extends well beyond the Illinois.

The *Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River* report by ECONorthwest estimated that river-based recreation on the Wild Rogue supported approximately $30 million in economic output and 445 full- and part-time jobs. The report also found that 91 percent of outfitters were based in Oregon.

The Illinois flows directly into the Rogue River near Agness. Our businesses, guides, shuttle drivers, hotels, restaurants, and other local businesses are part of this same recreation economy.

The numbers may show up as hotel stays, restaurant meals, guide wages, shuttle fees, or outfitter revenue, but all of that economic activity starts with the river.

Exceptional Water Quality Has Real Business Value

The exceptionally clear water is one of the river's defining characteristics and one of the things guests remember most about their trips. The undeveloped watershed also contributes to the sense of wilderness that makes a multi-day Illinois River trip different from almost any other rafting trip in the country.

Our reputations depend on providing that experience year after year. Much of our business comes from repeat guests, referrals, reviews, and people who have heard about the Illinois River from someone who has been there.

If the water quality or wild character of the river were degraded, our guests would notice.

We agree with the Draft FIS's conclusion that the proposed ORW designation would not impose significant new costs on compliant forestry operations, DEQ, or small businesses like ours. From our perspective, the rule does something much more important. It protects the existing water quality that our businesses and the broader recreation economies of Josephine and Curry Counties depend on.

On behalf of Northwest Rafting Company, ARTA River Trips, and Momentum River Expeditions, I respectfully submit these comments in support of the proposed ORW designation.

For our industry, this rule does not create a new cost. It helps protect what our businesses are already built around: exceptionally clean water and one of the wildest river corridors in the country.

Thank you for the opportunity to comment. I am happy to answer any questions about commercial rafting on the Illinois River or how our businesses depend on the river and its water quality.

Sincerely,

Zach Collier
Owner, Northwest Rafting Company

On behalf of Northwest Rafting Company, ARTA River Trips, and Momentum River Expeditions

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nwrafting.com

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Dean Runyan Associates

Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon

2008 State and County Expenditure Estimates

May 2009



Summer Lake Wildlife Area
Photo Credit: Oregon Department of Fish and Wildlife

Prepared for the

Oregon Department of Fish and Wildlife
Travel Oregon

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Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon, 2008

May 2009

Prepared for

Oregon Department of Fish and Wildlife
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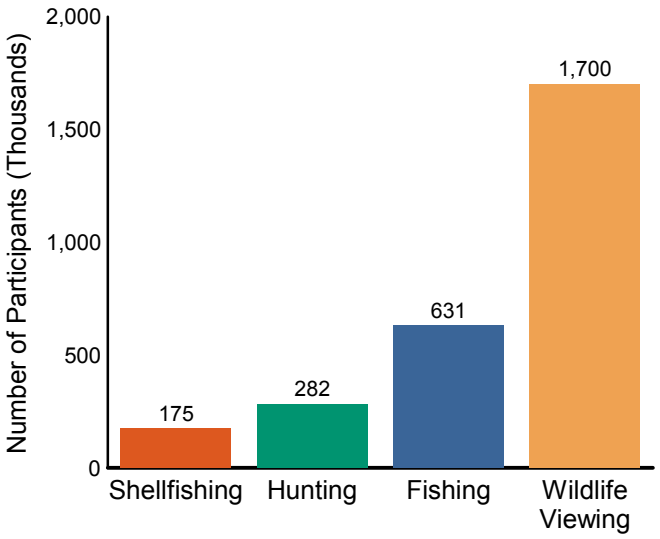
Executive Summary

This study, the result of a comprehensive effort by the Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon, describes hunting, fishing, wildlife viewing, and shellfish harvest participation and related expenditures made throughout Oregon and the state's travel regions and counties.

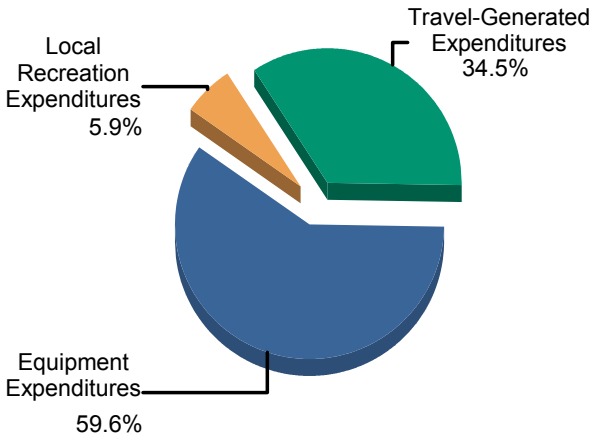
Participation and Expenditures in Oregon

In 2008, nearly 2.8 million Oregon residents and nonresidents participated in fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. Of the total number of participants, 631 thousand fished, 282 thousand hunted, 175 thousand harvested shellfish, and 1.7 million participated in outdoor recreation where wildlife viewing was a planned activity.

Total Participants by Activity, 2008



Fish and Wildlife Recreation Expenditures in Oregon, 2008
(Total: $2.5 billion)



In 2008, state residents and nonresidents made three distinct types of fish and wildlife recreation expenditures:

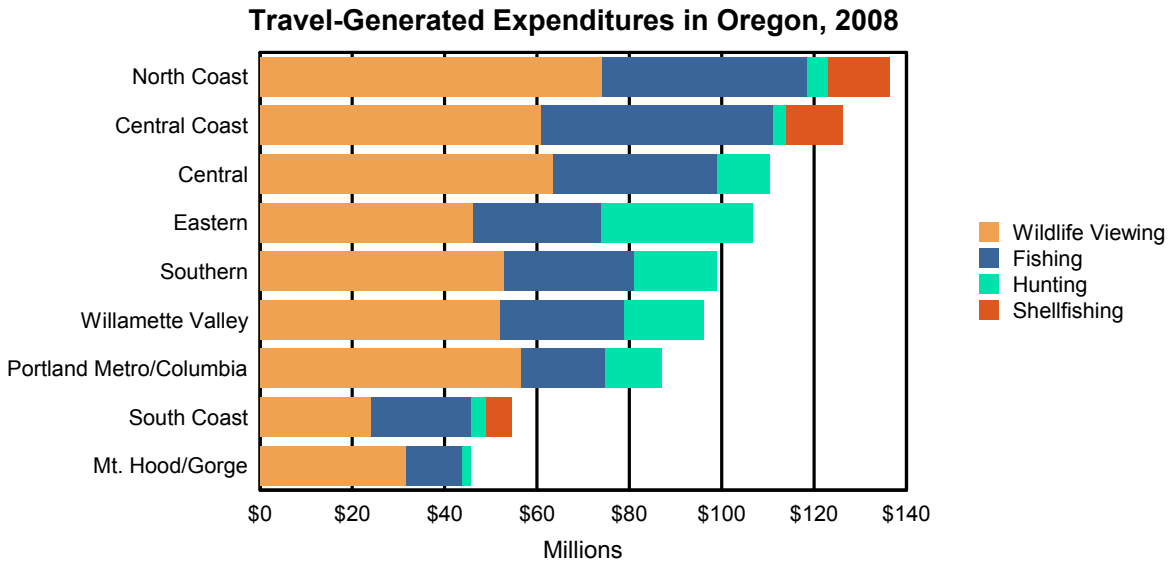
- Travel-Generated
- Local Recreation (less than 50 miles from home)
- Equipment Purchases (includes boats and recreation vehicles)

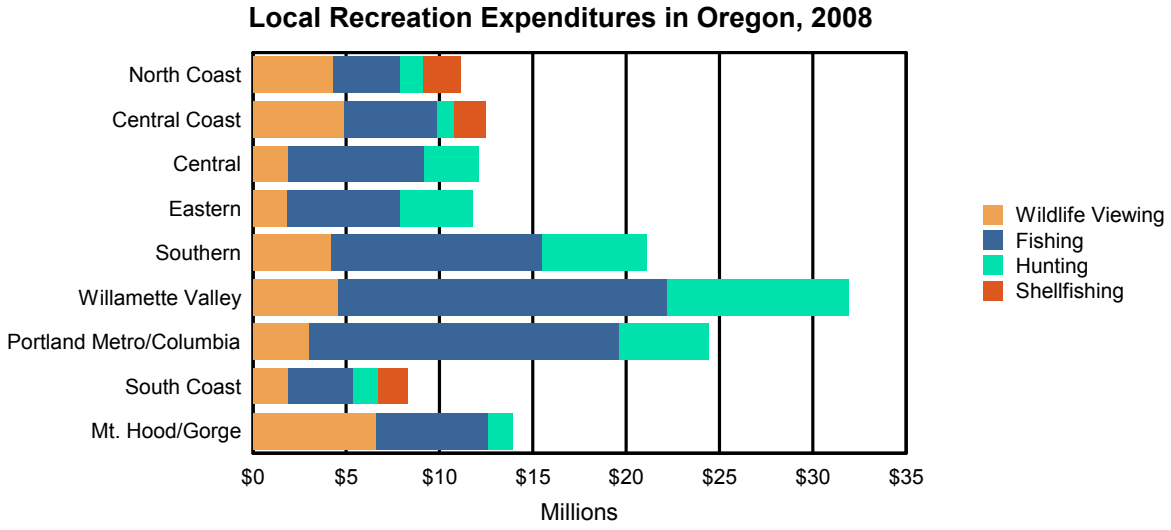
When all three categories are combined, fish and wildlife recreation resulted in expenditures of $2.5 billion in 2008. Oregon residents and nonresidents who traveled overnight and on day trips of 50 or more miles (one-way) from home made travel-generated expenditures of $862 million. Local recreation expenditures of $147 million were made by Oregon residents while participating in these activities less than 50 miles from home. State residents and nonresidents also spent an additional $1.5 billion on specialty equipment and other activity-related purchases from retail establishments and suppliers based in Oregon.

Fish and Wildlife Activities Benefit All Regions of Oregon

During 2008, travel-generated expenditures accounted for over $100 million in four of Oregon's travel regions (North Coast, Central Coast, Central, and Eastern). In all nine travel regions, travel-generated expenditures for wildlife viewing and fishing were particularly notable. While travel-generated expenditures for hunting occurred in each of the nine travel regions of the state, spending made in the Eastern, Southern, and Willamette Valley travel regions accounted for nearly two-thirds of the total.

Local recreation expenditures occurred most notably in travel regions with large urban-centered populations (Willamette Valley, Portland Metro/Columbia, and Southern), with fishing, hunting, and wildlife viewing representing the bulk of all local recreation expenditures made throughout the state.





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Preface

This study, the result of a comprehensive effort by the Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon, documents the economic significance of fishing, hunting, wildlife viewing and shellfish harvest in Oregon and its 36 counties in 2008. The report is intended to assist ODFW watershed and regional managers, state and local officials, as well as local chapters of sports groups or other organizations interested in fish and wildlife.

Dean Runyan Associates and The Pulse Group prepared this study for ODFW and Travel Oregon. Dean Runyan Associates has specialized in research and planning services for the travel, tourism, and recreation industry since 1984. Dean Runyan Associates also has extensive experience in project feasibility analysis, market evaluation, survey research, and travel and recreation planning. The Pulse Group is a market research and strategic planning firm specializing in large-scale study design and implementation.

In preparing this report, we have received essential guidance and assistance from numerous ODFW staff, whom we thankfully acknowledge. Stephen Williams, *Deputy Administrator Fish Division*, Larry Cooper, *Deputy Administrator Wildlife Division*, Dave Fox, *Marine Resource Program Assessment and Management Section Leader*, Tom Thornton, *Game Program Manager*, Dave Budeau, *Upland Game Bird Coordinator*, Christine Broniak, *Economist*, Christopher Carter, Ph.D., *Natural Resource Economist*, as well as many others who provided information and advice for this report.

In addition, we want to express our thanks for the cooperation of over 11,000 individuals who voluntarily provided detailed information about their hunting, fishing, wildlife viewing or shellfish harvest activity in Oregon.

Finally, special thanks are due to Roger Fuhrman, Administrator, Information and Education Division, ODFW, and Todd Davidson, CEO, Travel Oregon for their project support and assistance.

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I. Introduction

In Oregon, fishing, hunting, wildlife viewing, and shellfish harvesting generates economic activity for regions and counties throughout the state. Many locations within Oregon serve as appealing overnight and day destinations for both Oregon residents and out-of-state visitors (nonresidents) who participate in fishing, hunting, wildlife viewing, and shellfish harvesting activities while traveling away from home. In addition, many Oregon residents participate in these same fish and wildlife recreation activities close to home, supporting local businesses by spending dollars within their region and county of residence.

Based on results reported from detailed questionnaires and phone interviews, this study describes detailed expenditures made by Oregon residents and nonresidents for fishing, hunting, wildlife viewing and shellfish harvesting in Oregon during 2008. This study also estimates the retail expenditures for fish and wildlife activity-related equipment purchased in Oregon during 2008.

Detailed statewide information on trip characteristics and demographics for each recreation activity type is also included, providing details such as the purpose and length of the trips, the distance traveled, the type of fish or wildlife pursued or viewed, travel party size, as well as other associated trip-related characteristics (shown in Appendix A).

Objectives

This study represents a comprehensive effort by Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon to document the economic significance of fishing, hunting, wildlife viewing, and shellfish harvest in Oregon. Other previous research, including the U.S. Department of the Interior, Fish and Wildlife Service 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, provide economic information at the statewide level. While this information is helpful, many of the decisions that directly affect fish and wildlife, habitat and recreation are made at the local level – by ODFW watershed or regional managers, by state and local officials, by local chapters of sports groups, or by other organizations interested in fish and wildlife.

The information contained in this help will help further the following objectives:

- Highlight the economic impact of decisions that may affect fishing, hunting or wildlife viewing opportunities. This information will help local decision makers more accurately evaluate the impact of changes in regulations, habitat, invasive species, land use, fish passage and other activities that could affect recreation and fish and wildlife.

- Provide additional information to help secure grants and other funding to improve fishing, hunting and wildlife viewing opportunities such as handicap access, boat launches, fishing piers, viewing blinds, and public access. The information may also be used for

grants for habitat improvement projects and other efforts to improve fish and wildlife habitat.

- Increase understanding of who is involved in fishing, hunting, shellfish harvest, and wildlife viewing. This will help ODFW prioritize efforts to meet public demand for fishing, hunting, shellfish, and wildlife viewing activities.

- Increase understanding of where individuals fish, hunt, harvest shellfish, and view wildlife. This will help ODFW prioritize funding for restoration, enhancement, and development of fishing, hunting, shellfish, and wildlife viewing opportunities.

- Provide communities, industry, groups and others information on the economic value of fish and wildlife recreation and how they may benefit from these activities.

- Help ODFW more effectively target outreach efforts to contact hunters, anglers and wildlife viewers in their home communities and where they recreate.

Survey Method

Four separate surveys were conducted in 2008 in order to accurately assess the economic significance of fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. For fishing, hunting and shellfishing, survey participants were selected at random from license sales records – more than 50,000 questionnaires were mailed to ODFW resident and non-resident license holders (see Appendix D for self-administered questionnaires). For wildlife viewing, participants were identified through random digit dialing of Oregon telephone numbers. Those agreeing to participate were asked questions similar to those in the written questionnaires. Samples were stratified by certain portions of the state (groups of counties) and by collection period (quarterly). Overall, nearly 12,000 individuals provided information about their fishing, hunting, shellfishing, and wildlife viewing trips.

Survey Sample and Respondents

	Hunting	Fishing	Shellfish	Wildlife
Survey Method	Mail	Mail	Mail	Telephone
Collection Period	Annual	Bi-Annual	Annual	Quarterly
Number of Contacts	19,833	24,911	3,224	1,624
Completed Questionnaires	5,200	4,533	1,122	1,000
Response Rate	26%	18%	35%	62%

Note: Number of contacts does not include mailed questionnaires that were undeliverable.

In order to test for nonresponse bias, a telephone interview was conducted for a random sample of nonrespondents (those who did not return a questionnaire) for each of the segments contacted with mailed self-administered questionnaires. The responses of these groups were similar to those of the initial respondents. Through these telephone interviews, additional detail was gathered with regard to where to the allocation of expenditures -- before, during, or in the community closest to where the recreation activity occurred. The additional information was used to allocate expenditures at the county-level.

Generally, representative samples of 1,000 or more provide very reliable results. Confidence levels for respondent segments are shown in the table below. Appendix E describes the sampling design for the study and describes the approach taken to produce findings from the completed questionnaires.

Segment	Sample Size	Confidence Level (%)	
		90% Level (+/-)	95% Level (+/-)
Hunters	5,200	1.2	1.4
Fishers	4,533	1.3	1.5
Shellfishers	1,122	2.6	3.0
Oregon Households	1,000	2.6	3.1

Types of Expenditures Included

All of the expenditures associated with overnight and day trips where fishing, hunting, and shellfish harvest occurred in Oregon are included in the scope of this analysis. Expenditures made by both Oregon residents and nonresidents are included. For wildlife viewing, all of the expenditures associated with trips where wildlife viewing was a planned activity - *the primary reason* or *one of several reason*s for the trip – are included. Wildlife viewing expenditures made by nonresidents were estimated based on the data provided by survey participants and the U.S. Department of the Interior, Fish and Wildlife Service 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

The analysis distinguishes between *travel-generated expenditures* – defined as those expenditures associated with overnight trips and day trips 50 + miles (*one-way)* – and *local recreation expenditures*, associated with activities occurring in locations under 50 miles from the participant's home. In addition, expenditures made for equipment used while participating in the above activities, if the equipment was purchased from a retailer or supplier located in Oregon during 2008 – such as gear, clothing, campers, recreational vehicles, boats etc. – are reported as *equipment expenditures*. Expenditures made by Oregon residents associated with trips, recreation, or equipment purchases that occurred or were made in locations <u>outside of Oregon</u> are <u>not</u> included.

The specific categories of expenditures included in this analysis are as follows:

Expenditure Categories	Description
Travel-Generated	Travel-generated expenditures associated with *all* overnight trips and *all* day trips 50^{+} miles (one-way) from a participant's home.
Local Recreation	Local Recreation expenditures associated with *all* day recreation less than 50 miles *(one-way)* from a participant's home.
Equipment purchases	Equipment expenditures made for specific activity-related equipment, as well as special clothing, tents, boats, campers, recreational vehicles and other, additional assorted purchases.

Report Contents

Following this introductory section, Section II provides a statewide review. Section III provides detailed expenditures by region (based on Travel Oregon regions). Section IV provides detailed expenditures for each of Oregon's 36 counties. Appendices A through C shows detailed trip characteristics, demographics, and number of trips by type of fish and wildlife. Copies of the survey questionnaires are shown in Appendix D. Appendix E describes the sampling design in more detail and highlights the steps taken to produce estimates from the completed questionnaires.

II. Oregon Statewide Summary



Participation and Expenditures in Oregon

In 2008, 2.8 million Oregon residents and nonresidents participated in fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. Of the total number of participants, 631 thousand fished, 282 thousand hunted, 175 thousand harvested shellfish, and 1.7 million participated in outdoor recreation where wildlife viewing was a planned activity, which includes observing, feeding, and photographing any kind of wildlife (not including visits to zoos or aquariums).

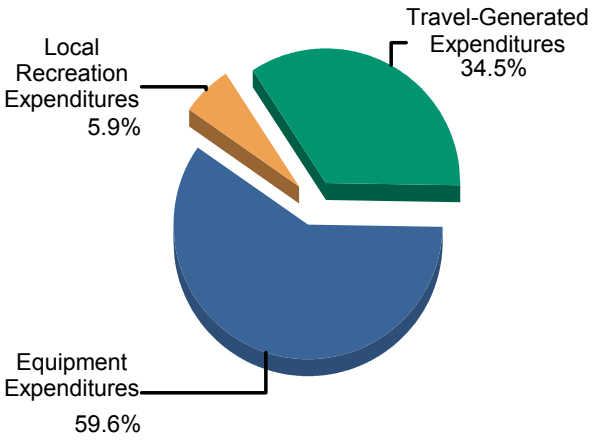
In 2008, state residents and nonresidents made three distinct types of wildlife recreation expenditures: travel-generated, local recreation, and equipment purchases. Oregon residents and nonresidents who traveled overnight and on day trips of 50+ miles (one-way) from home made *travel-generated expenditures* of $862 million. Local recreation expenditures of $147 million were made by Oregon residents while participating in these activities less than 50 miles from home. State residents and nonresidents also spent an additional $1.5 billion on equipment and activity-related purchases from retail establishments and suppliers based in Oregon.

Statewide Participants, Trips and Expenditures in Oregon, 2008

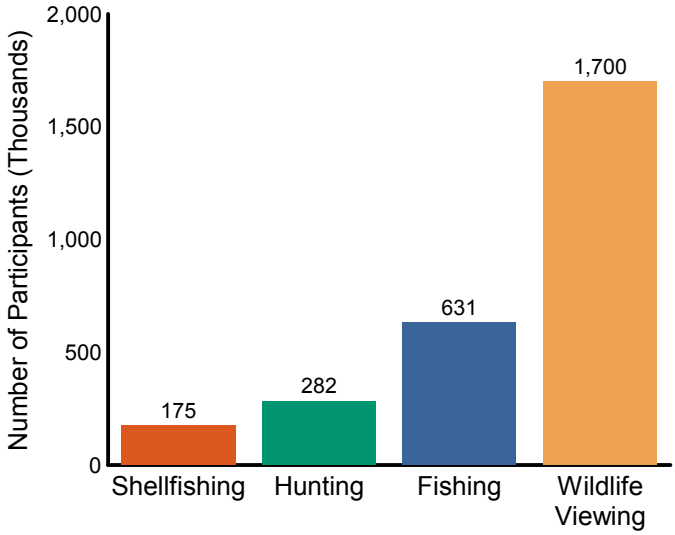
Total	***(in thousands)***
Participants in Oregon	2,788
Trips in Oregon	21,163
Travel-Generated Expenditures	$862,188
Local Recreation Expenditures	$146,908
Equipment Expenditures	$1,486,932

Notes: Resident and nonresident expenditures associated with all reported activities in Oregon. Travel-Generated expenditures associated with overnight and day trips 50+ miles (one-way).
Source: Dean Runyan Associates.

Fish and Wildlife Recreation Expenditures in Oregon, 2008
(Total: $2.5 billion)



Total Participants by Activity, 2008



Participants, Trips and Expenditures in Oregon by Activity, 2008

Fishing	***(in thousands)***
Anglers in Oregon	631
Angler Trips in Oregon	5,241
Travel-Generated Expenditures	$264,605
Local Recreation Expenditures	$76,905
Equipment Expenditures	$441,356

Shellfishing	***(in thousands)***
Shellfishers in Oregon	175
Shellfisher Trips in Oregon	471
Travel-Generated Expenditures	$31,039
Local Recreation Expenditures	$5,256
Equipment Expenditures	$135,688

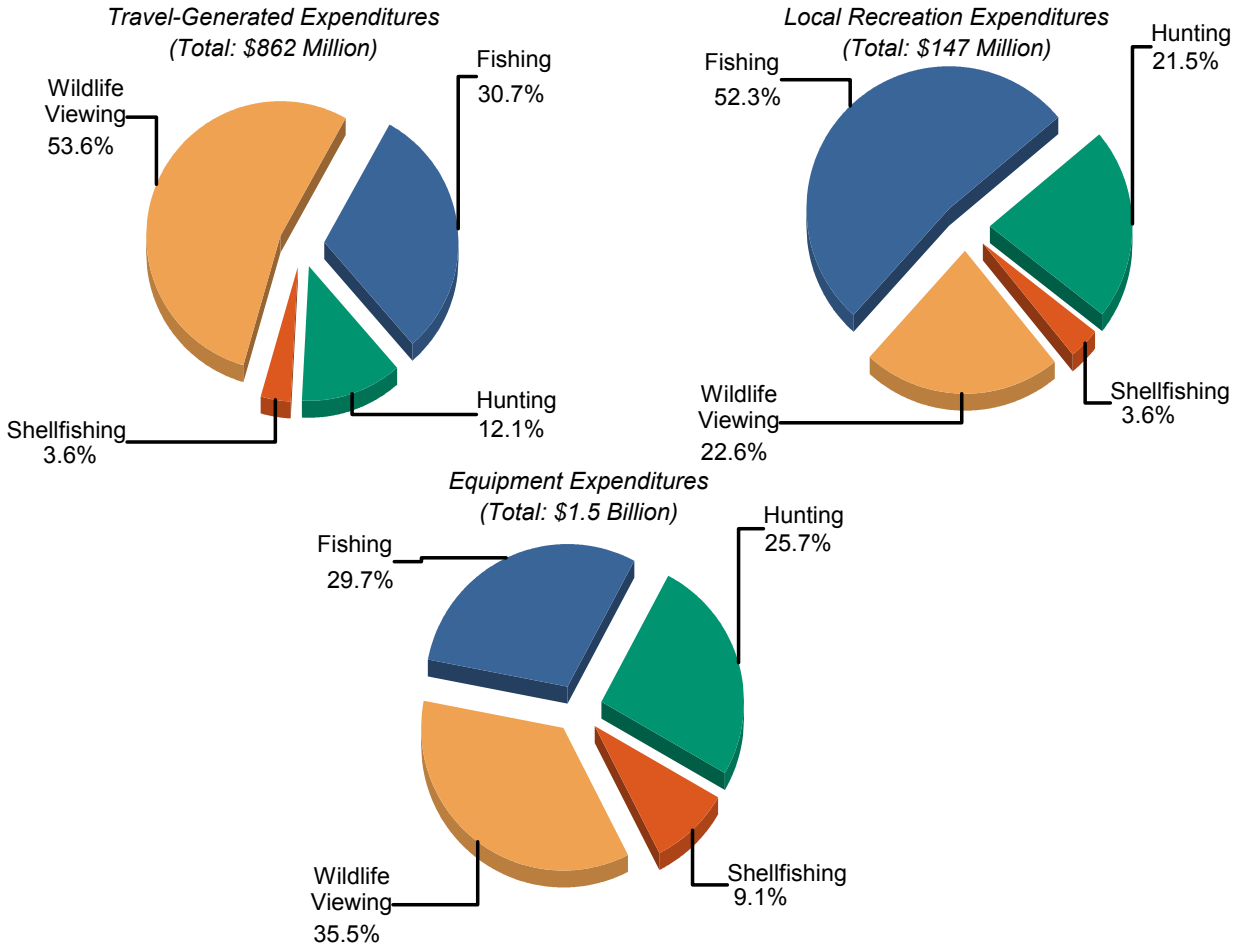
Hunting	
Hunters in Oregon	282
Hunter Trips in Oregon	1,754
Travel-Generated Expenditures	$104,458
Local Recreation Expenditures	$31,574
Equipment Expenditures	$381,908

Wildlife Viewing*	
Wildlife-Viewing Participants in Oregon	1,700
Wildlife Viewing Trips in Oregon	13,697
Travel-Generated Expenditures	$462,087
Local Recreation Expenditures	$33,173
Equipment Expenditures	$527,980

* Trips and Expenditures where wildlife viewing was a planned activity -- *the primary reason* or *one of several reasons* for the trip. Does not include expenditures associated with trip where incidental wildlife viewing occured.

Notes: Resident and nonresident expenditures associated with all reported activities in Oregon.
Travel-Generated expenditures associated with overnight and day trips 50+ miles (one-way).
Source: Dean Runyan Associates.

Expenditures in Oregon by Type and Activity, 2008



Note: Wildlife viewing expenditures on trips where wildlife viewing was a planned activity.
Source: Dean Runyan Associates.

Table 1. Expenditures for Fishing in Oregon, 2008

Freshwater Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$31,378
Food & Beverage Services	$31,059
Food Stores	$42,032
Ground Transportation	$43,876
Retail	$17,871
Outfitter/Guide/Charter Fees	$20,680
Other Recreation & Entertainment	$8,692
Total Travel Expenditures	$195,587
*Local Recreation Expenditures***	$74,293

Saltwater Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$12,217
Food & Beverage Services	$13,394
Food Stores	$9,842
Ground Transportation	$13,646
Retail	$6,981
Outfitter/Guide/Charter Fees	$8,074
Other Recreation & Entertainment	$4,864
Total Travel Expenditures	$69,018
*Local Recreation Expenditures***	$2,612

Total, All Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$43,595
Food & Beverage Services	$44,453
Food Stores	$51,873
Ground Transportation	$57,522
Retail	$24,852
Outfitter/Guide/Charter Fees	$28,754
Other Recreation & Entertainment	$13,556
Total Travel Expenditures	$264,605
*Local Recreation Expenditures***	$76,905

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with fishing in Oregon. Additionally, an estimated $5.3 million was made in airfares (round-trip) by those visitors who traveled to Oregon by air.
Source: Dean Runyan Associates.

Table 2. Expenditures for Shellfishing in Oregon, 2008

Shellfishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$6,848
Food & Beverage Services	$7,570
Food Stores	$6,496
Ground Transportation	$4,975
Retail	$2,996
Outfitter/Guide/Charter Fees	$580
Other Recreation & Entertainment	$1,574
Total Travel Expenditures	$31,039
*Local Recreation Expenditures***	$5,256

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 3. Expenditures for Hunting in Oregon, 2008

Hunting	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$10,664
Food & Beverage Services	$16,579
Food Stores	$33,381
Ground Transportation	$17,212
Retail	$21,199
Outfitter/Guide/Charter Fees	$2,435
Other Recreation & Entertainment	$2,989
Total Travel Expenditures	$104,458
*Local Recreation Expenditures***	$31,574

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 4. Expenditures for Wildlife Viewing in Oregon, 2008

Wildlife Viewing	*(Thousands)*
*Travel-Generated Expenditures**	
Accommodations	$129,033
Food & Beverage Services	$102,369
Food Stores	$88,780
Ground Transportation	$71,905
Retail	$44,542
Outfitter/Guide/Charter Fees	...
Other Recreation & Entertainment	$25,459
Total Travel Expenditures	$462,087
*Local Recreation Expenditures***	$33,173

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.
... Sample size too small to report data reliably.

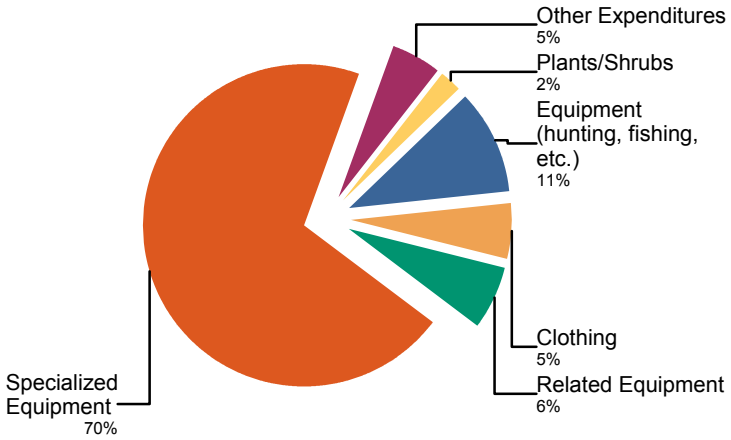
Note: Expenditures where wildlife viewing was a planned activity -- *the primary reason* or *one of several reasons* for the trip. Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

Table 5. Equipment Expenditures in Oregon, 2008 ($Millions)

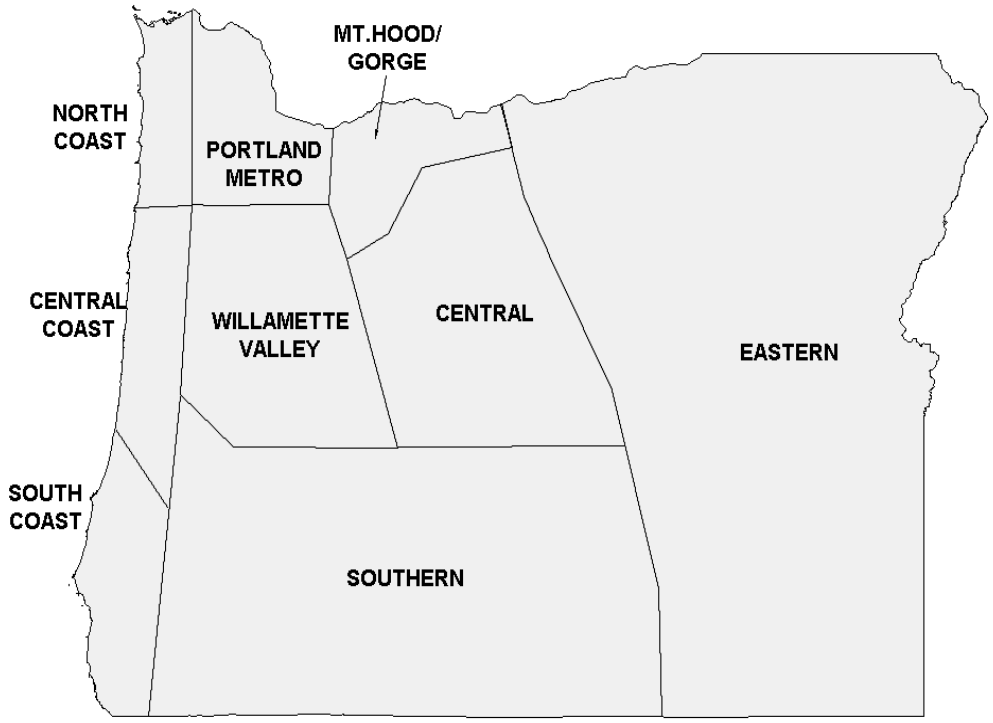
	Fishing	Hunting	Shellfishing	Wildlife Viewing	Combined Activities
Equipment (hunting, fishing, etc.)	$41.2	$73.7	$4.9	$37.6	$157.4
Clothing	$17.8	$26.7	$4.4	$31.6	$80.6
Related Equipment	$32.8	$22.7	$4.3	$36.8	$96.6
Specialized Equipment	$342.7	$234.3	$117.8	$349.4	$1,044.1
Other Expenditures	$6.8	$24.6	$4.3	$38.3	$74.0
Plants/Shrubs	$0.0	$0.0	$0.0	$34.2	$34.2
Total Equipment Expenditures	$441.4	$381.9	$135.7	$528.0	$1,486.9

Note: Special Equipment includes boats, campers, ATVs and other recreation vehicles.
For Hunting, Other Expenditures may include meat processing, and taxidermy.
Plants/Shrubs include plants and materials purchased for wildlife habitat areas.
Source: Dean Runyan Associates.

Equipment Expenditures in Oregon, 2008



III. Oregon Travel Regions



Counties by Oregon Travel Region

North Coast
- Clatsop
- Tillamook

Central Coast
- Douglas (West)
- Lincoln
- Lane (West)

South Coast
- Coos
- Curry

Willamette Valley
- Benton
- Clackamas (South)
- Lane (East)
- Linn
- Marion
- Polk
- Yamhill

Portland Metro
- Clackamas (West)
- Columbia
- Multnomah (West)
- Washington

Southern
- Douglas (East)
- Jackson
- Josephine
- Klamath
- Lake

Central
- Crook
- Deschutes
- Jefferson
- Wasco (South)

Mt.Hood/Gorge
- Clackamas (East)
- Multnomah (East)
- Hood River
- Wasco (North)

Eastern
- Baker
- Gilliam
- Grant
- Harney
- Malheur
- Morrow
- Sherman
- Umatilla
- Union
- Wallowa
- Wheeler

The tables in this section provide detailed estimates for the regions of Oregon for 2008.

Table 6. Travel-Generated Expenditures by Activity for Oregon Travel Regions, 2008 ($Million)

Region	Shell-fishing	Fishing	Hunting	Wildlife Viewing *	Combined Activities	All Oregon Travel**	Combined Activities (%)
Willamette Valley		$26.7	$17.3	$52.1	$96.1	$1,337.9	7.2%
North Coast	$13.3	$44.4	$4.7	$74.1	$136.5	$551.0	24.8%
Central Coast	$12.2	$50.1	$2.9	$61.0	$126.2	$624.5	20.2%
South Coast	$5.5	$21.7	$3.3	$24.1	$54.6	$283.0	19.3%
Portland Metro/Columbia		$18.1	$12.3	$56.6	$87.0	$3,567.3	2.4%
Southern		$28.3	$17.9	$52.8	$99.0	$831.3	11.9%
Central		$35.4	$11.4	$63.6	$110.4	$581.4	19.0%
Eastern		$27.6	$32.8	$46.3	$106.7	$361.1	29.5%
Mt. Hood/Gorge		$12.3	$1.8	$31.6	$45.7	$279.2	16.4%
State	**$31.0**	**$264.6**	**$104.4**	**$462.2**	**$862.2**	**$8,416.7**	**10.2%**

* Expenditures associated with overnight and day trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

** All Oregon Travel expenditures based on Oregon Travel Impacts, 1991-2008p (statewide preliminary estimates).

Note: Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way). Resident and nonresident expenditures associated with all reported activities in Oregon.
The estimates of travel-generated expenditures by county in this report will necessarily differ somewhat from estimates generated from different models, methodologies, and data sources, including Oregon Travel Impacts.

Source: Dean Runyan Associates.

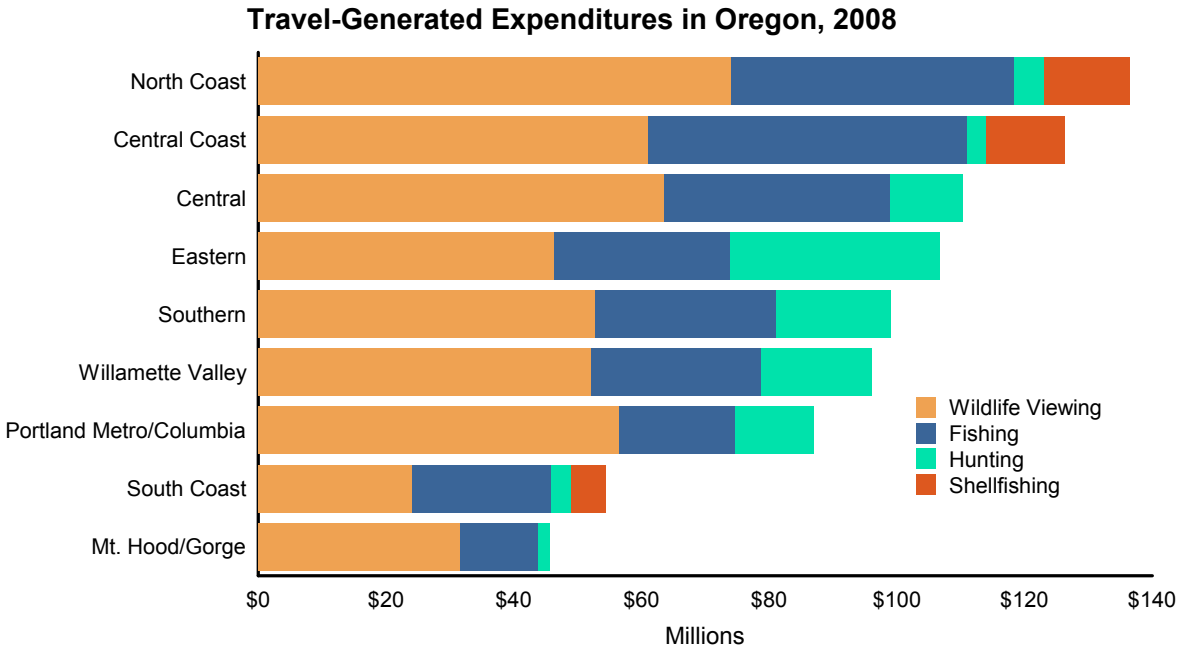


Table 7. Local Recreation Expenditures by Activity for Oregon Travel Regions, 2008 ($Million)

Region	Shell-fishing	Fishing	Hunting	Wildlife Viewing *	Combined Activites
Willamette Valley		$17.6	$9.7	$4.6	$31.9
North Coast	$2.0	$3.6	$1.2	$4.3	$11.1
Central Coast	$1.7	$5.0	$0.9	$4.9	$12.5
South Coast	$1.6	$3.5	$1.3	$1.9	$8.3
Portland Metro/Columbia		$16.6	$4.8	$3.0	$24.4
Southern		$11.3	$5.6	$4.2	$21.1
Central		$7.3	$2.9	$1.9	$12.1
Eastern		$6.1	$3.9	$1.8	$11.8
Mt. Hood/Gorge		$6.0	$1.3	$6.6	$13.9
State	**$5.3**	**$77.0**	**$31.6**	**$33.2**	**$147.1**

* Expenditures associated with local trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

Note: Any Nonresidents, who reported less than 50 miles, are included in Travel-Generated Expenditures. Local Recreation expenditures associated with trips under 50 miles.

Source: Dean Runyan Associates.

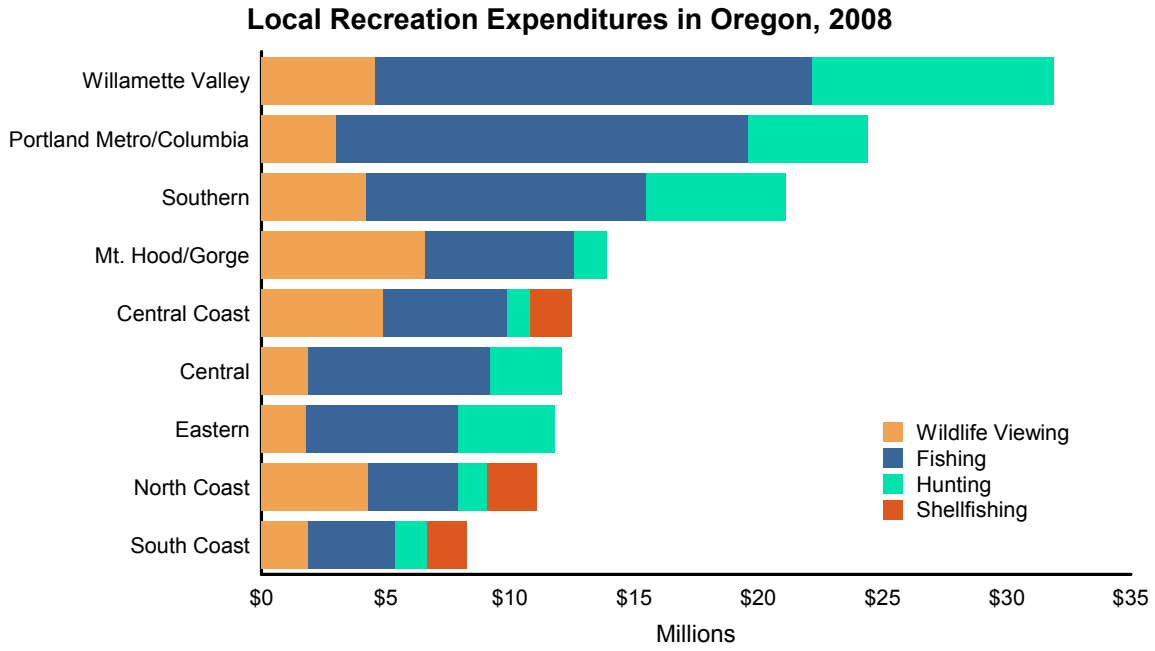


Table 8. Expenditures for Freshwater Fishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
Willamette Valley	$14.4	$12.3	$26.7	$17.6
North Coast	$9.1	$8.9	$18.0	$3.0
Central Coast	$12.0	$8.1	$20.1	$3.9
South Coast	$6.3	$2.7	$9.0	$2.6
Portland Metro/Columbia	$8.9	$9.2	$18.1	$16.6
Southern	$16.8	$11.5	$28.3	$11.3
Central	$25.8	$9.6	$35.4	$7.3
Eastern	$20.6	$7.0	$27.6	$6.1
Mt. Hood/Gorge	$6.9	$5.4	$12.3	$6.0
State	**$120.8**	**$74.8**	**$195.6**	**$74.3**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with freshwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 9. Expenditures for Saltwater Fishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
North Coast	$18.3	$8.1	$26.4	$0.6
Central Coast	$19.9	$10.1	$30.0	$1.1
South Coast	$7.6	$5.0	$12.6	$0.9
State	**$45.8**	**$23.2**	**$69.0**	**$2.6**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with saltwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 10. Expenditures for Shellfishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
North Coast	$10.1	$3.2	$13.3	$2.0
Central Coast	$9.3	$2.9	$12.2	$1.7
South Coast	$4.7	$0.8	$5.5	$1.6
State	**$24.1**	**$6.9**	**31.0**	**$5.3**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 11. Expenditures for Hunting by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
Willamette Valley	$11.9	$5.4	$17.3	$9.7
North Coast	$3.4	$1.3	$4.7	$1.2
Central Coast	$2.2	$0.7	$2.9	$0.9
South Coast	$2.4	$0.9	$3.3	$1.3
Portland Metro/Columbia	$8.5	$3.8	$12.3	$4.8
Southern	$13.5	$4.4	$17.9	$5.6
Central	$9.0	$2.4	$11.4	$2.9
Eastern	$29.0	$3.8	$32.8	$3.9
Mt. Hood/Gorge	$1.4	$0.4	$1.8	$1.3
State	**$81.3**	**$23.1**	**$104.4**	**$31.6**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 12. Expenditures for Wildlife Viewing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million)			Local Recreation Expenditures** ($Million)
	Overnight	Day	Total	
Willamette Valley	$40.7	$11.4	$52.1	$4.6
North Coast	$67.5	$6.6	$74.1	$4.3
Central Coast	$53.7	$7.3	$61.0	$4.9
South Coast	$20.8	$3.3	$24.1	$1.9
Portland Metro/Columbia	$44.2	$12.4	$56.6	$3.0
Southern	$44.2	$8.6	$52.8	$4.2
Central	$59.6	$4.0	$63.6	$1.9
Eastern	$42.8	$3.5	$46.3	$1.8
Mt. Hood/Gorge	$22.0	$9.6	$31.6	$6.6
State	**$395.5**	**$66.7**	**$462.2**	**$33.2**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

IV. Oregon Counties



A description of the expenditure impact categories used in the detailed county tables follows:

Travel-Generated Expenditures by Activity includes the total travel spending made by Oregon residents and nonresidents in the county of destination, plus other specific trip-related purchases such as gasoline, food and beverages, and other retail purchases made before or while traveling to the destination. Expenditures for gasoline, food, and retail items made *before* the trip are allocated to the participant's home county. All other expenditures are allocated to the county in which the recreation activity occurred.

Local Recreation Expenditures by Activity includes the total recreation-related expenditures made by Oregon residents for day recreation activities less than 50 miles (one-way) from a participant's home.

The next five tables show detailed *Expenditures by Trip Type by County* for each of the five activities: freshwater fishing, saltwater fishing, shellfishing, hunting, and wildlife viewing. Trip types include overnight, day, and local recreation (less than 50 miles from participant's home).

Table 13. Travel-Generated Expenditures by Activity for Counties, 2008 ($000s)

County	Shellfishing	Fishing	Hunting	Wildlife Viewing*	Combined Activities	All Oregon Travel **	Combined Activites (%)
Baker		$5,670	$4,524	$8,259	$18,452	$47,851	38.6%
Benton		$1,677	$953	$4,941	$7,572	$91,532	8.3%
Clackamas		$7,158	$4,421	$21,632	$33,211	$435,661	7.6%
Clatsop	$5,661	$9,693	$2,313	$55,481	$73,147	$389,494	18.8%
Columbia		$790	$1,177	$3,367	$5,333	$31,220	17.1%
Coos	$4,552	$12,253	$2,535	$14,111	$33,452	$183,020	18.3%
Crook		$3,010	$2,584	$6,769	$12,363	$29,663	41.7%
Curry	$1,020	$9,374	$728	$10,022	$21,145	$100,025	21.1%
Deschutes		$20,410	$6,663	$42,771	$69,844	$475,684	14.7%
Douglas	$2,616	$19,112	$6,233	$9,698	$37,658	$247,649	15.2%
Gilliam		...	...	...	$548	$3,812	14.4%
Grant		$3,279	$5,138	$3,147	$11,564	$9,107	***
Harney		$2,812	$4,564	$7,953	$15,329	$19,645	78.0%
Hood River		$4,117	$789	$13,005	$17,910	$67,622	26.5%
Jackson		$8,520	$5,096	$18,664	$32,280	$380,721	8.5%
Jefferson		$4,010	$730	$9,596	$14,336	$55,014	26.1%
Josephine		$3,432	$1,558	$6,695	$11,685	$121,530	9.6%
Klamath		$5,741	$3,179	$13,993	$22,913	$130,820	17.5%
Lake		$2,560	$2,490	$4,940	$9,991	$11,272	88.6%
Lane	$1,840	$17,642	$7,907	$27,570	$54,959	$580,771	9.5%
Lincoln	$7,660	$32,478	$1,607	$53,229	$94,974	$453,023	21.0%
Linn		$3,070	$2,776	$4,114	$9,959	$117,906	8.4%
Malheur		$3,996	$2,157	$1,345	$7,498	$47,102	15.9%
Marion		$8,601	$3,718	$16,360	$28,679	$357,095	8.0%
Morrow		$921	$2,652	$4,942	$8,514	$13,251	64.3%
Multnomah		$7,955	$3,387	$31,511	$42,853	$2,803,647	1.5%
Polk		$925	$957	$2,375	$4,256	$139,551	3.0%
Sherman		$2,032	$746	$1,193	$3,970	$10,582	37.5%
Tillamook	$7,689	$34,710	$2,477	$18,569	$63,446	$161,523	39.3%
Umatilla		$2,576	$3,543	$9,703	$15,821	$146,254	10.8%
Union		$1,729	$5,435	$4,318	$11,481	$33,194	34.6%
Wallowa		$2,821	$2,771	$5,172	$10,765	$26,778	40.2%
Wasco		$13,607	$2,099	$7,800	$23,506	$85,449	27.5%
Washington		$4,816	$3,727	$15,226	$23,769	$514,450	4.6%
Wheeler		$1,462	$1,168	...	$2,776	$3,539	78.4%
Yamhill		$1,341	$1,580	$3,308	$6,229	$91,252	6.8%
State	**$31,039**	**$264,605**	**$104,458**	**$462,087**	**$862,188**	**$8,416,710**	**10.2%**

* Expenditures associated with overnight and day trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

** All Oregon Travel expenditures based on Oregon Travel Impacts, 1991-2008p (statewide preliminary estimates).

*** Percent FHW exceeds 100 due to dispersed camping related activity not included in Oregon Travel Impacts.

.... Sample size too small to report data reliably.

Note: Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way). Resident and nonresident expenditures associated with all reported activities in Oregon. The estimates of travel-generated expenditures by county in this report will necessarily differ somewhat from estimates generated from different models, methodologies, and data sources, including Oregon Travel Impacts.

Source: Dean Runyan Associates.

Table 14. Local Recreation Expenditures by Activity for Counties, 2008 ($000s)

County	Shellfishing	Fishing	Hunting	Wildlife Viewing*	Combined Activities
Baker		$640	$491	$317	$1,448
Benton		$1,353	$1,075	...	$2,428
Clackamas		$8,704	$2,496	$621	$11,820
Clatsop	$1,016	$1,515	$666	$2,715	$5,912
Columbia		...	...	$134	$133
Coos	$1,081	$2,551	$905	$1,637	$6,175
Crook		$999	$683	$218	$1,900
Curry	$483	$935	$413	$309	$2,140
Deschutes		$5,321	$1,817	$1,520	$8,657
Douglas	$175	$3,577	$1,785	$835	$6,373
Gilliam		...	...	$106	$106
Grant		$377	$391	...	$768
Harney		$330	$262	...	$654
Hood River		$1,960	$282	$3,249	$5,492
Jackson		$4,512	$2,025	$1,906	$8,443
Jefferson		$822	$288	$170	$1,280
Josephine		$1,600	$745	$648	$2,993
Klamath		$2,134	$1,035	$938	$4,108
Lake		$339	$283	...	$660
Lane	$324	$7,689	$3,047	$2,714	$13,774
Lincoln	$1,185	$2,408	$482	$3,557	$7,631
Linn		$3,699	$1,392	$391	$5,482
Malheur		$1,062	$460	$167	$1,689
Marion		$3,586	$1,660	$1,408	$6,654
Morrow		$593	$185	...	$857
Multnomah		$8,215	$2,662	$3,835	$14,712
Polk		$507	$830	$883	$2,220
Sherman		$198	$223	...	$420
Tillamook	$992	$2,080	$541	$1,607	$5,221
Umatilla		$1,541	$990	$741	$3,271
Union		$700	$596	$170	$1,465
Wallowa		$567	$217	$115	$898
Wasco		$645	$278	$945	$1,868
Washington		$3,584	$1,489	$796	$5,868
Wheeler		$139	$103	...	$255
Yamhill		$2,025	$778	$330	$3,133
State	**$5,256.33**	**$76,905.23**	**$31,574**	**$33,172.99**	**$146,908.27**

* Expenditures associated with local trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

.... Sample size too small to report data reliably.

Note: Any Nonresidents, who reported less than 50 miles, are included in Travel-Generated Expenditures. Local Recreation expenditures associated with trips under 50 miles.

Source: Dean Runyan Associates.

Table 15. Expenditures for Freshwater Fishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$4,773	$896	$5,670	$640
Benton	$395	$1,282	$1,677	$1,353
Clackamas	$3,997	$3,161	$7,158	$8,704
Clatsop	$2,080	$1,989	$4,069	$1,363
Columbia	$423	$367	$790	...
Coos	$2,714	$1,842	$4,555	$1,885
Crook	$2,300	$710	$3,010	$999
Curry	$3,545	$907	$4,452	$673
Deschutes	$15,854	$4,557	$20,410	$5,321
Douglas	$7,247	$5,187	$12,434	$3,258
Gilliam	...	...	...	...
Grant	$2,934	$346	$3,279	$377
Harney	$2,362	$450	$2,812	$330
Hood River	$1,238	$2,879	$4,117	$1,960
Jackson	$4,720	$3,801	$8,520	$4,512
Jefferson	$2,558	$1,452	$4,010	$822
Josephine	$1,926	$1,507	$3,432	$1,600
Klamath	$3,853	$1,889	$5,741	$2,134
Lake	$1,938	$623	$2,560	$339
Lane	$8,957	$6,331	$15,288	$7,415
Lincoln	$6,516	$4,992	$11,508	$1,932
Linn	$1,581	$1,489	$3,070	$3,699
Malheur	$2,811	$1,185	$3,996	$1,062
Marion	$4,923	$3,678	$8,601	$3,586
Morrow	$685	$236	$921	$593
Multnomah	$4,079	$3,876	$7,955	$8,215
Polk	$505	$420	$925	$507
Sherman	$1,785	$247	$2,032	$198
Tillamook	$7,026	$6,913	$13,939	$1,618
Umatilla	$1,054	$1,522	$2,576	$1,541
Union	$872	$857	$1,729	$700
Wallowa	$2,082	$740	$2,821	$567
Wasco	$9,056	$4,551	$13,607	$645
Washington	$2,207	$2,609	$4,816	$3,584
Wheeler	$948	$514	$1,462	$139
Yamhill	$573	$768	$1,341	$2,025
State	**$120,798**	**$74,789**	**$195,587**	**$74,293**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with freshwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 16. Expenditures for Saltwater Fishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Clatsop	$3,991	$1,633	$5,624	$152
Coos	$3,587	$4,111	$7,698	$667
Curry	$4,019	$902	$4,921	$262
Douglas	$4,643	$2,036	$6,679	$319
Lane	$909	$1,445	$2,354	$274
Lincoln	$14,355	$6,615	$20,970	$476
Tillamook	$14,344	$6,428	$20,772	$463
State	**$45,848**	**$23,170**	**$69,018**	**$2,612**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with saltwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 17. Expenditures for Shellfishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Clatsop	$3,999	$1,662	$5,661	$1,016
Coos	$3,770	$782	$4,552	$1,081
Curry	$972	$48	$1,020	$483
Douglas	$1,894	$721	$2,616	$175
Lane	$1,487	$353	$1,840	$324
Lincoln	$5,876	$1,784	$7,659	$1,185
Tillamook	$6,145	$1,545	$7,689	$992
State	**$24,143**	**$6,896**	**$31,039**	**$5,256**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 18. Expenditures for Hunting by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$4,010	$514	$4,524	$491
Benton	$612	$341	$953	$1,075
Clackamas	$3,112	$1,309	$4,421	$2,496
Clatsop	$1,661	$652	$2,313	$666
Columbia	$840	$337	$1,177	...
Coos	$1,834	$701	$2,535	$905
Crook	$2,060	$524	$2,584	$683
Curry	$519	$209	$728	$413
Deschutes	$5,495	$1,167	$6,663	$1,817
Douglas	$4,758	$1,475	$6,233	$1,785
Gilliam	...	...	...	...
Grant	$4,748	$390	$5,138	$391
Harney	$4,215	$349	$4,564	$262
Hood River	$632	$157	$789	$282
Jackson	$3,879	$1,217	$5,096	$2,025
Jefferson	$512	$217	$730	$288
Josephine	$1,032	$526	$1,558	$745
Klamath	$2,321	$858	$3,179	$1,035
Lake	$2,114	$377	$2,490	$283
Lane	$5,687	$2,220	$7,907	$3,047
Lincoln	$1,167	$441	$1,607	$482
Linn	$1,879	$897	$2,776	$1,392
Malheur	$1,704	$453	$2,157	$460
Marion	$2,473	$1,245	$3,718	$1,660
Morrow	$2,377	$275	$2,652	$185
Multnomah	$2,320	$1,067	$3,387	$2,662
Polk	$647	$310	$957	$830
Sherman	$448	$298	$746	$223
Tillamook	$1,789	$688	$2,477	$541
Umatilla	$2,851	$692	$3,543	$990
Union	$4,896	$539	$5,435	$596
Wallowa	$2,553	$217	$2,771	$217
Wasco	$1,459	$640	$2,099	$278
Washington	$2,516	$1,211	$3,727	$1,489
Wheeler	$1,101	...	$1,168	$103
Yamhill	$1,051	$529	$1,580	$778
State	**$81,326**	**$23,132**	**$104,458**	**$31,574**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 19. Expenditures for Wildlife Viewing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$7,709	$550	$8,259	$317
Benton	$4,556	$385	$4,941	...
Clackamas	$19,013	$2,619	$21,632	$621
Clatsop	$51,349	$4,132	$55,481	$2,715
Columbia	$2,914	$453	$3,367	$134
Coos	$11,376	$2,735	$14,111	$1,637
Crook	$6,331	$439	$6,769	$218
Curry	$9,438	$585	$10,022	$309
Deschutes	$39,719	$3,052	$42,771	$1,520
Douglas	$7,909	$1,788	$9,698	$835
Gilliam	...	$163	$163	$106
Grant	$3,107	...	$3,147	...
Harney	$7,825	$128	$7,953	...
Hood River	$8,214	$4,791	$13,005	$3,249
Jackson	$14,803	$3,861	$18,664	$1,906
Jefferson	$9,247	$349	$9,596	$170
Josephine	$5,292	$1,403	$6,695	$648
Klamath	$12,269	$1,725	$13,993	$938
Lake	$4,842	...	$4,940	...
Lane	$21,961	$5,609	$27,570	$2,714
Lincoln	$47,820	$5,409	$53,229	$3,557
Linn	$3,010	$1,104	$4,114	$391
Malheur	$961	$384	$1,345	$167
Marion	$12,949	$3,412	$16,360	$1,408
Morrow	$4,774	$168	$4,942	...
Multnomah	$22,487	$9,025	$31,511	$3,835
Polk	$762	$1,613	$2,375	$883
Sherman	$1,183	...	$1,193	...
Tillamook	$16,104	$2,465	$18,569	$1,607
Umatilla	$8,264	$1,439	$9,703	$741
Union	$3,934	$384	$4,318	$170
Wallowa	$4,967	$205	$5,172	$115
Wasco	$6,305	$1,495	$7,800	$945
Washington	$11,535	$3,691	$15,226	$796
Wheeler	$117	...	$146	...
Yamhill	$2,389	$919	$3,308	$330
State	**$395,430**	**$66,657**	**$462,087**	**$33,173**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

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APPENDIX A

Trip Characteristics by Activity

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Table A-1. Travel Characteristics of Oregon Freshwater Anglers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	63.7%	87.4%	74.9%	93.1%	72.5%	85.4%	78.2%
One Of Several Reasons	33.3%	11.3%	22.9%	5.9%	24.8%	8.6%	17.7%
Incidental Activity	2.9%	1.3%	2.1%	1.1%	2.7%	6.0%	4.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	72.3%	NA	72.3%	NA	51.4%	NA	51.4%
Campground/Camping	20.4%	NA	20.4%	NA	39.4%	NA	39.4%
Friends/Relatives	11.3%	NA	11.3%	NA	19.0%	NA	19.0%
Second Home	7.4%	NA	7.4%	NA	2.9%	NA	2.9%
Total *	111.4%		111.4%		112.7%		112.7%
Number of Nights							
1 Night	9.6%	NA	9.6%	NA	7.4%	NA	7.4%
2 Nights	28.8%	NA	28.8%	NA	16.9%	NA	16.9%
3-4 Nights	32.3%	NA	32.3%	NA	32.7%	NA	32.7%
5-6 Nights	13.1%	NA	13.1%	NA	23.0%	NA	23.0%
7-13 Nights	11.7%	NA	11.7%	NA	13.4%	NA	13.4%
14+ Nights	4.5%	NA	4.5%	NA	6.5%	NA	6.5%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	10.3%	NA	5.4%	100.0%	4.2%	20.5%	11.2%
50-99	28.7%	72.5%	49.5%	NA	11.3%	44.7%	25.6%
100-199	41.8%	22.8%	32.8%	NA	21.5%	16.9%	19.5%
200-299	12.1%	4.3%	8.4%	NA	12.9%	4.0%	9.1%
300+	7.1%	0.3%	3.9%	NA	50.1%	13.9%	34.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.6	2.2	2.4	2.0	2.6	2.0	2.3
with Oregon License	2.3	2.0	2.2	1.7	2.2	1.7	2.0
Number of Children	0.8	0.5	0.7	0.4	0.2	0.3	0.2
Travel Companions							
Just Myself	5.0%	6.7%	5.8%	12.8%	7.8%	5.5%	6.8%
Immediate Family Only	46.2%	38.0%	42.4%	36.1%	37.2%	30.3%	34.1%
Multiple Families	22.0%	20.3%	21.2%	14.8%	25.0%	27.0%	25.9%
Other Adult Friends	23.6%	29.6%	26.4%	30.2%	26.2%	32.2%	29.0%
Other	3.3%	5.5%	4.3%	6.0%	3.7%	4.9%	4.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Freshwater Species Fished							
Trout	66.6%	54.8%	61.0%	54.9%	46.9%	53.6%	49.9%
Salmon	21.2%	35.4%	27.9%	34.1%	24.4%	26.9%	25.5%
Steelhead	23.3%	34.3%	28.5%	35.9%	35.8%	29.5%	33.0%
Bass	22.6%	18.0%	20.4%	23.3%	17.9%	24.0%	20.6%
Sturgeon	7.1%	10.4%	8.6%	10.5%	6.2%	6.7%	6.4%
Other	13.6%	10.4%	12.1%	7.8%	14.9%	13.7%	14.3%
Total *	154.4%	163.3%	158.5%	166.5%	146.1%	154.4%	149.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-2. Travel Characteristics of Oregon Saltwater Anglers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	80.5%	87.1%	83.4%	94.2%	69.8%	85.1%	75.2%
One Of Several Reasons	19.5%	12.9%	16.6%	5.8%	30.2%	10.6%	23.3%
Incidental Activity	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	1.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	36.2%	NA	36.2%	NA	39.2%	NA	39.2%
Campground/Camping	50.1%	NA	50.1%	NA	24.3%	NA	24.3%
Friends/Relatives	17.5%	NA	17.5%	NA	32.4%	NA	32.4%
Second Home	13.7%	NA	13.7%	NA	18.9%	NA	18.9%
Total *	117.5%		117.5%		114.8%		114.8%
Number of Nights							
1 Night	12.8%	NA	12.8%	NA	7.1%	NA	7.1%
2 Nights	31.9%	NA	31.9%	NA	21.2%	NA	21.2%
3-4 Nights	27.6%	NA	27.6%	NA	30.6%	NA	30.6%
5-6 Nights	6.0%	NA	6.0%	NA	9.4%	NA	9.4%
7-13 Nights	15.6%	NA	15.6%	NA	5.9%	NA	5.9%
14+ Nights	6.2%	NA	6.2%	NA	25.9%	NA	25.9%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	1.5%	NA	0.8%	100.0%	2.4%	18.4%	8.2%
50-99	43.9%	63.1%	52.7%	NA	25.9%	6.1%	18.7%
100-199	44.7%	34.9%	40.2%	NA	20.0%	20.4%	20.1%
200-299	7.0%	1.7%	4.6%	NA	22.4%	42.9%	29.9%
300+	3.0%	0.2%	1.7%	NA	29.4%	12.2%	23.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.8	2.6	2.7	2.1	2.6	1.3	1.3
with Oregon License	2.5	2.4	2.4	2.0	2.6	1.1	1.1
Number of Children	0.6	0.5	0.6	0.3	0.1	0.4	0.4
Travel Companions							
Just Myself	2.1%	0.8%	1.6%	6.3%	1.4%	2.0%	1.7%
Immediate Family Only	47.3%	38.9%	43.7%	22.5%	39.4%	22.4%	32.5%
Multiple Families	26.2%	17.5%	22.4%	16.2%	32.4%	28.6%	30.8%
Other Adult Friends	19.8%	38.0%	27.6%	51.5%	26.8%	46.9%	35.0%
Other	4.6%	4.8%	4.7%	3.5%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Saltwater Species Fished							
Salmon	65.0%	63.8%	43.5%	62.6%	69.8%	67.5%	70.4%
Halibut	22.8%	35.2%	19.2%	22.2%	26.7%	57.5%	34.1%
Tuna	17.5%	21.9%	13.2%	17.4%	27.9%	55.0%	39.3%
Rock/Bottom	49.2%	55.1%	35.0%	69.5%	45.3%	75.0%	57.8%
Perch	12.8%	13.7%	8.9%	11.9%	4.7%	7.5%	5.2%
Other	18.7%	17.0%	12.1%	13.7%	9.3%	5.0%	7.4%
Total *	186.0%	206.7%	131.8%	197.3%	183.7%	267.5%	214.1%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-3. Travel Characteristics of Oregon Shellfishers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	39.6%	74.3%	56.0%	89.5%	25.4%	40.8%	28.9%
One Of Several Reasons	54.5%	21.5%	38.9%	10.0%	60.2%	45.1%	56.8%
Incidental Activity	5.9%	4.3%	5.1%	0.6%	14.3%	14.1%	14.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	22.8%	NA	22.8%	NA	30.7%	NA	30.7%
Campground/Camping	50.4%	NA	50.4%	NA	58.2%	NA	58.2%
Friends/Relatives	15.2%	NA	15.2%	NA	19.3%	NA	19.3%
Second Home	20.3%	NA	20.3%	NA	9.4%	NA	9.4%
Total *	108.7%		108.7%		117.6%		117.6%
Number of Nights							
1 Night	13.5%	NA	13.5%	NA	1.7%	NA	1.7%
2 Nights	30.7%	NA	30.7%	NA	9.4%	NA	9.4%
3-4 Nights	24.5%	NA	24.5%	NA	17.1%	NA	17.1%
5-6 Nights	10.4%	NA	10.4%	NA	15.4%	NA	15.4%
7-13 Nights	9.8%	NA	9.8%	NA	25.2%	NA	25.2%
14+ Nights	11.2%	NA	11.2%	NA	31.2%	NA	31.2%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	3.4%	NA	1.8%	100.0%	0.4%	50.0%	12.3%
50-99	49.5%	69.9%	59.2%	NA	2.1%	9.2%	3.8%
100-199	35.6%	28.4%	32.2%	NA	16.7%	35.5%	21.2%
200-299	8.6%	1.2%	5.1%	NA	8.8%	0.0%	6.6%
300+	2.9%	0.5%	1.8%	NA	72.1%	5.3%	56.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	3.0	2.7	2.8	2.5	2.9	3.3	3.0
with Oregon License	2.7	2.5	2.6	2.5	2.4	2.9	2.5
Number of Children	0.7	0.5	0.6	0.5	0.6	0.3	0.5
Travel Companions							
Just Myself	1.9%	4.1%	3.0%	15.3%	4.3%	3.5%	4.2%
Immediate Family Only	39.6%	40.6%	40.1%	41.7%	59.7%	31.6%	54.2%
Multiple Families	22.0%	8.6%	15.6%	7.6%	20.3%	7.0%	17.7%
Other Adult Friends	33.4%	44.8%	38.8%	34.8%	15.6%	57.9%	24.0%
Other Travel Party	3.1%	1.8%	2.5%	0.7%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Shellfish Harvested							
Crabs	79.8%	71.4%	75.9%	70.0%	91.8%	92.4%	91.9%
Razor Clams	26.9%	28.7%	27.8%	30.1%	13.5%	22.7%	15.5%
Bay Clams	25.5%	12.8%	19.6%	28.5%	27.0%	34.8%	28.7%
Mussels	5.4%	2.1%	3.9%	3.4%	0.4%	1.5%	0.6%
Rock Scallops	0.7%	1.1%	0.9%	0.0%	0.0%	0.0%	0.0%
Sand/Mud Shrimps	6.1%	6.2%	6.1%	10.6%	0.0%	0.0%	0.0%
Other	0.9%	2.8%	1.8%	2.4%	0.4%	7.6%	1.9%
Total *	145.3%	125.1%	135.9%	145.0%	133.1%	159.0%	138.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-4. Travel Characteristics of Oregon Hunters: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	91.5%	90.4%	91.1%	93.3%	93.6%	88.5%	91.6%
One Of Several Reasons	8.1%	9.1%	8.5%	6.1%	6.3%	9.3%	7.4%
Incidental Activity	0.4%	0.6%	0.5%	0.6%	0.1%	2.2%	0.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	13.3%	NA	13.3%	NA	30.1%	NA	30.1%
Campground/Camping	80.3%	NA	80.3%	NA	54.3%	NA	54.3%
Friends/Relatives	9.5%	NA	9.5%	NA	29.7%	NA	29.7%
Second Home	6.8%	NA	6.8%	NA	6.1%	NA	6.1%
Total *	109.9%		109.9%		120.2%		120.2%
Number of Nights							
1 Night	3.5%	NA	3.5%	NA	3.7%	NA	3.7%
2 Nights	13.9%	NA	13.9%	NA	13.6%	NA	13.6%
3-4 Nights	20.3%	NA	20.3%	NA	19.8%	NA	19.8%
5-6 Nights	20.3%	NA	20.3%	NA	19.7%	NA	19.7%
7-13 Nights	33.2%	NA	33.2%	NA	31.3%	NA	31.3%
14+ Nights	8.8%	NA	8.8%	NA	11.9%	NA	11.9%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	11.5%	NA	7.4%	100.0%	4.0%	17.6%	9.3%
50-99	22.4%	69.4%	39.0%	NA	9.0%	43.6%	22.4%
100-199	25.4%	24.3%	25.0%	NA	15.0%	20.0%	16.9%
200-299	20.5%	3.3%	14.4%	NA	14.0%	5.6%	10.7%
300+	20.1%	3.1%	14.1%	NA	58.1%	13.3%	40.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.8	2.2	2.5	2.0	2.5	2.3	2.4
with Oregon License	2.7	2.1	2.2	1.9	2.3	2.3	2.4
Number of Children	0.5	0.4	0.4	0.4	0.2	0.2	0.2
Travel Companions							
Just Myself	16.2%	6.5%	12.8%	3.2%	10.2%	2.2%	7.1%
Immediate Family Only	29.5%	41.7%	33.9%	36.1%	25.5%	24.3%	25.0%
Multiple Families	44.9%	38.1%	42.5%	38.1%	55.1%	58.3%	56.3%
Other Adult Friends	3.8%	2.4%	3.3%	2.2%	2.6%	3.2%	2.8%
Other Travel Party	5.6%	11.3%	7.6%	20.4%	6.6%	12.1%	8.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Game Hunted During Trip							
Deer	54.0%	54.2%	54.1%	68.0%	41.2%	20.8%	33.4%
Elk	58.3%	35.3%	50.3%	36.2%	39.3%	20.4%	32.1%
Wild Turkey	5.0%	5.8%	5.3%	5.9%	3.2%	2.2%	2.8%
Other Big Game	9.1%	10.2%	9.5%	9.1%	2.5%	1.5%	2.1%
Upland Game Birds	15.8%	23.7%	18.6%	18.2%	25.7%	48.0%	34.2%
Waterfowl	6.3%	11.0%	7.9%	18.3%	16.9%	22.2%	18.9%
Other	5.4%	7.9%	6.3%	4.2%	4.5%	6.0%	5.1%
Total *	153.9%	148.1%	151.8%	159.9%	133.3%	121.1%	128.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-5. Travel Characteristics of Oregon Wildlife Viewers: 2008
(where wildlife viewing activity occurred)

	Oregon Residents			
	Travel Characteristics			Local
	Overnight	Day	Total	Recreation
Purpose of Trip				
Primary Reason	15.7%	20.5%	17.4%	22.5%
One Of Several Reasons	38.3%	38.6%	38.4%	47.9%
Incidental Activity	46.0%	40.9%	44.2%	29.6%
Total	100.0%	100.0%	100.0%	100.0%
Type of Accommodation				
Hotel, Motel, Rented Cabin	36.6%	NA	36.6%	NA
Campground/Camping	35.7%	NA	35.7%	NA
Friends/Relatives	13.7%	NA	13.7%	NA
Second Home	4.8%	NA	4.8%	NA
Other	15.2%	NA	15.2%	NA
Total *	106.0%		106.0%	
Number of Nights				
1 Night	24.3%	NA	24.3%	NA
2 Nights	37.3%	NA	37.3%	NA
3-4 Nights	21.3%	NA	21.3%	NA
5-6 Nights	8.2%	NA	8.2%	NA
7-13 Nights	5.9%	NA	5.9%	NA
14+ Nights	3.0%	NA	3.0%	NA
Total	100.0%		100.0%	
Miles Traveled				
less than 50	10.4%	NA	6.7%	100.0%
50-99	29.7%	76.2%	46.1%	NA
100-199	30.6%	17.8%	26.0%	NA
200-299	17.2%	2.8%	12.1%	NA
300+	12.2%	3.2%	9.0%	NA
Total	100.0%	100.0%	100.0%	100.0%
Average Party Size				
Number of Adults	2.8	2.6	2.7	2.4
Number of Children	1.2	0.5	0.9	0.8
Travel Companions				
Just Myself	7.4%	9.9%	8.3%	15.1%
Immediate Family Only	52.6%	58.3%	54.6%	56.8%
Multiple Families	15.7%	5.7%	12.1%	7.6%
Other Adult Friends	20.6%	25.6%	22.4%	18.2%
Other Travel Party	3.7%	0.6%	2.6%	2.3%
Total	100.0%	100.0%	100.0%	100.0%
Wildlife Viewed				
Birds	90.6%	88.4%	89.8%	85.4%
Land Animals	83.5%	76.9%	81.1%	71.4%
Marine Mammals	18.4%	17.1%	17.9%	10.5%
Marine Life/Tidepools	16.9%	14.4%	16.0%	9.0%
Fish	29.2%	23.3%	27.1%	27.2%
Amphibians/Reptiles	17.3%	8.7%	14.2%	11.9%
Other	4.4%	2.7%	3.8%	4.8%
Total *	260.3%	231.5%	250.0%	220.2%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-6. Travel Characteristics of Oregon Wildlife Viewers : 2008

(where wildlife viewing was the primary reason of trip)

	Oregon Residents			
	Travel Characteristics			Local
	Overnight	Day	Total	Recreation
Purpose of Trip				
Primary Reason	100.0%	100.0%	100.0%	100.0%
One Of Several Reasons	0.0%	0.0%	0.0%	0.0%
Incidental Activity	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%
Type of Accommodation				
Hotel, Motel, Rented Cabin	16.4%	NA	16.4%	NA
Campground/Camping	48.0%	NA	48.0%	NA
Friends/Relatives	7.5%	NA	7.5%	NA
Second Home	0.0%	NA	0.0%	NA
Other	30.1%	NA	30.1%	NA
Total *	102.0%		102.0%	
Number of Nights				
1 Night	8.9%	NA	8.9%	NA
2 Nights	34.2%	NA	34.2%	NA
3-4 Nights	26.0%	NA	26.0%	NA
5-6 Nights	14.4%	NA	14.4%	NA
7-13 Nights	6.8%	NA	6.8%	NA
14+ Nights	9.6%	NA	9.6%	NA
Total	100.0%		100.0%	
Miles Traveled				
less than 50	10.6%	NA	6.5%	100.0%
50-99	36.2%	91.1%	57.6%	NA
100-199	23.4%	4.4%	16.0%	NA
200-299	16.3%	1.1%	10.4%	NA
300+	13.5%	3.3%	9.5%	NA
Total	100.0%	100.0%	100.0%	100.0%
Average Party Size				
Number of Adults	2.6	2.8	2.7	2.1
Number of Children	1.1	0.6	0.9	1.0
Travel Companions				
Just Myself	7.5%	16.8%	11.5%	31.3%
Immediate Family Only	45.9%	52.3%	48.6%	42.2%
Multiple Families	13.7%	9.3%	11.9%	7.8%
Other Adult Friends	24.7%	21.5%	23.3%	3.1%
Other Travel Party	8.2%	0.0%	4.7%	15.6%
Total	100.0%	100.0%	100.0%	100.0%
Wildlife Viewed				
Birds	82.9%	83.2%	83.0%	57.8%
Land Animals	80.8%	57.0%	70.8%	95.3%
Marine Mammals	12.3%	15.9%	13.8%	0.0%
Marine Life/Tidepools	9.6%	11.2%	10.3%	0.0%
Fish	29.5%	29.9%	29.6%	15.6%
Amphibians/Reptiles	19.2%	2.8%	12.3%	0.0%
Other	9.6%	5.6%	7.9%	0.0%
Total *	243.9%	205.6%	227.7%	168.7%

* Detail may total more than 100% due to multiple response.

Note: Local Recreation represents local trips of less than 50 miles (one-way).

Source: Dean Runyan Associates.

APPENDIX B

Demographics

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Table B-1. Demographic Characteristics and Preferred Communication: Residents versus Nonresidents

	Hunters		Shellfishers		Anglers		Wildlife Viewers*
	Res.	Nonres.	Res.	Nonres.	Res.	Nonres.	Res.
Household Income							
UNDER $25,000	8.3%	2.3%	10.7%	9.0%	13.4%	4.4%	16.2%
$25,000-$49,999	25.0%	11.3%	26.0%	16.0%	27.6%	15.8%	30.5%
$50,000-$74,999	28.2%	23.2%	29.1%	34.0%	25.5%	24.2%	21.9%
$75,000-$99,999	18.5%	19.5%	15.2%	23.0%	16.8%	20.5%	13.1%
$100,000 OR MORE	20.0%	43.6%	19.0%	18.0%	16.7%	35.1%	18.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Education							
Some High School Or H.S. Diploma	32.3%	20.7%	28.5%	23.1%	29.6%	20.1%	23.1%
Some College Or 2-Year Degree	40.3%	33.9%	40.0%	43.3%	39.6%	31.2%	36.5%
Bachelors Degree	18.5%	27.7%	18.9%	20.2%	18.1%	24.9%	23.6%
Advanced Degree	8.9%	17.7%	12.6%	13.5%	12.6%	23.7%	16.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Preferred Communication with ODFW							
Email	14.4%	18.0%	14.7%	16.7%	13.0%	17.7%	24.3%
ODFW Printed Brochures	22.9%	16.9%	19.8%	23.5%	21.9%	14.8%	6.2%
Information At License Vendors	14.3%	6.0%	14.2%	14.7%	15.6%	14.0%	3.4%
ODFW Website	20.8%	30.5%	23.9%	19.6%	24.3%	26.4%	64.2%
Direct Mail	25.2%	26.1%	24.0%	23.5%	21.6%	24.1%	0.6%
Other	2.4%	2.5%	3.4%	2.0%	3.7%	3.0%	1.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

* Oregon Residents who reported either planned or unplanned wildlife viewing activity in 2008.
Note: Detail may total more than 100% due to multiple response.

Source: Dean Runyan Associates.

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APPENDIX C

Number of Trips and Days of Participation by Activity

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Table C-1. Freshwater Fishing Trips in Oregon by Type of Fish (in Thousands), 2008

	Trout	Salmon	Steelhead	Bass	Sturgeon	Other	Total
Willamette Valley							
Overnight	47	4	5	4	0	7	67
Day (50+ miles)	101	20	31	9	0	11	173
Local (under 50 miles)	280	81	103	101	13	19	597
North Coast							
Overnight	15	28	13	6	5	4	72
Day (50+ miles)	34	81	71	8	10	12	216
Local (under 50 miles)	39	28	18	5	11	0	101
Central Coast							
Overnight	29	26	17	13	6	7	97
Day (50+ miles)	40	61	45	26	12	11	194
Local (under 50 miles)	38	35	33	13	5	6	132
South Coast							
Overnight	8	20	12	4	0	1	46
Day (50+ miles)	9	14	10	15	0	2	52
Local (under 50 miles)	20	23	28	16	0	0	87
Portland Metro/Columbia							
Overnight	2	5	4	2	5	0	18
Day (50+ miles)	15	26	20	7	14	1	83
Local (under 50 miles)	82	194	135	35	109	9	564
Southern							
Overnight	72	3	10	15	2	7	109
Day (50+ miles)	107	24	38	25	0	13	207
Local (under 50 miles)	125	67	109	63	5	14	382
Central							
Overnight	126	5	26	22	0	16	195
Day (50+ miles)	114	16	35	15	0	11	191
Local (under 50 miles)	161	9	21	33	0	25	248
Eastern							
Overnight	52	8	17	50	3	26	156
Day (50+ miles)	49	5	12	42	4	26	139
Local (under 50 miles)	55	23	47	56	7	21	209
Mt. Hood/Gorge							
Overnight	15	9	16	8	3	4	56
Day (50+ miles)	35	35	32	9	18	3	131
Local (under 50 miles)	43	55	46	21	24	14	204
Statewide Total							
Overnight	367	107	119	125	25	74	817
Day (50+ miles)	505	283	294	156	60	90	1,386
Local (under 50 miles)	842	516	540	343	173	109	2,523
Total Trips	1,713	906	953	624	258	272	4,726

.... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-2. Saltwater Fishing Trips in Oregon by Type of Fish (in Thousands), 2008

	Salmon	Other Marine/Saltwater	Total
North Coast			
Overnight	64	11	76
Day (50+ miles)	68	35	103
Local (under 50 miles)	4	3	7
Central Coast			
Overnight	49	33	82
Day (50+ miles)	89	40	128
Local (under 50 miles)	11	1	12
South Coast			
Overnight	13	19	31
Day (50+ miles)	26	38	64
Local (under 50 miles)	4	7	11
Statewide Total			
Overnight	126	63	189
Day (50+ miles)	182	113	295
Local (under 50 miles)	20	11	31
Total Trips	328	186	514

.... Sample size too small to report data reliably.
Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

Table C-3. Shellishing Trips in Oregon by Type of Harvest (in Thousands), 2008

	Crabs	Razor Clams	Bay Clams	Mussels	Rock Scallops	Sand/Mud Shrimps	Other	Total
North Coast								
Overnight	30	19	10	1	1	1	1	63
Day (50+ miles)	26	28	7	1	0	7	4	72
Local (under 50 miles)	27	20	11	0	0	6	0	64
Central Coast								
Overnight	38	6	9	3	0	1	0	57
Day (50+ miles)	49	3	4	5	1	1	1	64
Local (under 50 miles)	34	6	7	3	0	3	0	54
South Coast								
Overnight	17	4	6	1	0	2	0	29
Day (50+ miles)	11	1	5	0	0	1	1	19
Local (under 50 miles)	28	6	12	2	0	2	0	50
Statewide Total								
Overnight	84	30	26	5	1	4	1	149
Day (50+ miles)	86	32	16	5	1	9	6	155
Local (under 50 miles)	89	32	30	5	0	11	0	167
Total Trips	259	93	72	15	2	24	7	471

.... Sample size too small to report data reliably.
Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

Table C-4. Hunting Trips in Oregon by Type of Game (in Thousands), 2008

	Deer	Elk	Other Big Game	Game Birds	Waterfowl	Wild Turkey	Other	Total
Willamette Valley								
Overnight	7	8	2	1	0	0	1	18
Day (50+ miles)	39	14	5	8	10	6	3	85
Local (under 50 miles)	136	51	18	23	46	14	7	294
North Coast								
Overnight	4	10	0	2	2	0	0	18
Day (50+ miles)	22	17	3	3	2	1	0	50
Local (under 50 miles)	15	13	2	4	2	0	0	37
Central Coast								
Overnight	3	6	2	0	0	1	0	12
Day (50+ miles)	6	7	1	4	5	0	0	23
Local (under 50 miles)	9	10	3	2	2	0	1	27
South Coast								
Overnight	1	4	1	0	0	0	1	7
Day (50+ miles)	8	5	3	2	0	0	0	19
Local (under 50 miles)	17	8	5	4	2	2	1	40
Portland Metro/Columbia								
Overnight	1	1	0	0	0	0	0	3
Day (50+ miles)	12	13	0	0	2	0	0	28
Local (under 50 miles)	58	42	5	12	26	0	2	144
Southern								
Overnight	20	15	2	6	2	2	2	49
Day (50+ miles)	39	19	9	16	6	2	2	92
Local (under 50 miles)	78	32	11	24	15	6	4	170
Central								
Overnight	18	12	2	2	1	1	2	38
Day (50+ miles)	19	14	1	7	5	2	4	52
Local (under 50 miles)	36	24	1	7	9	4	6	87
Eastern								
Overnight	53	66	10	20	6	7	7	169
Day (50+ miles)	30	30	7	28	6	5	5	111
Local (under 50 miles)	37	26	5	23	13	10	5	119
Mt. Hood/Gorge								
Overnight	4	1	0	1	0	1	1	9
Day (50+ miles)	5	3	2	3	0	1	2	15
Local (under 50 miles)	19	10	5	3	0	1	3	41
Statewide Total								
Overnight	110	123	19	32	12	12	13	322
Day (50+ miles)	181	121	32	71	37	17	15	475
Local (under 50 miles)	404	216	55	101	115	39	28	958
Total Trips	695	460	107	204	164	68	57	1,754

.... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-5. Wildlife Viewing Trips in Oregon by Type of Wildlife Viewed (in Thousands), 2008

	Birds	Land Animals*	Marine Mammals	Tidepools	Fish	Reptiles	Other	Total
Willamette Valley								
Overnight	123	114	...	...	42	18	6	316
Day (50+ miles)	163	141	...	...	27	5	5	364
Local (under 50 miles)	738	495	...	...	149	112	19	1,615
North Coast								
Overnight	259	192	87	139	86	34	0	797
Day (50+ miles)	120	104	28	28	40	16	8	344
Local (under 50 miles)	49	46	17	17	16	3	4	153
Central Coast								
Overnight	194	162	117	81	64	11	4	632
Day (50+ miles)	139	82	67	67	29	5	0	388
Local (under 50 miles)	111	63	44	40	36	4	4	301
South Coast								
Overnight	76	65	34	10	28	14	10	237
Day (50+ miles)	50	45	30	10	20	0	0	155
Local (under 50 miles)	69	46	33	25	25	10	5	214
Portland Metro/Columbia								
Overnight	85	63	...	...	6	0	0	154
Day (50+ miles)	119	96	...	...	16	8	0	239
Local (under 50 miles)	1,085	757	...	...	303	101	50	2,347
Southern								
Overnight	176	159	...	...	56	30	13	450
Day (50+ miles)	132	151	...	...	25	19	0	334
Local (under 50 miles)	451	419	...	...	63	73	31	1,048
Central								
Overnight	274	252	...	...	86	54	16	687
Day (50+ miles)	55	59	...	...	25	8	0	152
Local (under 50 miles)	167	202	...	...	63	35	0	480
Eastern								
Overnight	183	210	...	...	39	31	16	494
Day (50+ miles)	68	62	...	...	8	3	0	141
Local (under 50 miles)	170	188	...	...	23	6	6	393
Mt. Hood/Gorge								
Overnight	89	84	...	...	42	28	0	262
Day (50+ miles)	217	166	...	...	77	26	13	524
Local (under 50 miles)	192	156	...	...	82	18	18	476
Statewide Total								
Overnight	1,459	1,302	278	259	448	219	64	4,029
Day (50+ miles)	1,063	906	159	129	267	90	26	2,641
Local (under 50 miles)	3,032	2,372	208	154	761	362	138	7,027
Total Trips	5,554	4,580	645	541	1,477	671	229	13,697

* Land Animals include deer, elk, bear, squirrels, chipmunks.

... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-6. Days of Participation in Oregon by Type of Activitiy (in Thousands), 2008

	Fishing					
	Shellfish	Saltwater	Freshwater	Hunting	Wildlife	Total
Willamette Valley						
Overnight			277	104	947	1,327
Day (50+ miles)			173	85	364	621
Local (under 50 miles)			597	294	1,615	2,506
North Coast						
Overnight	282	319	295	103	2,392	3,391
Day (50+ miles)	72	103	216	50	344	784
Local (under 50 miles)	64	7	101	37	153	361
Central Coast						
Overnight	257	343	398	68	1,896	2,962
Day (50+ miles)	64	128	194	23	388	799
Local (under 50 miles)	54	12	132	27	301	526
South Coast						
Overnight	132	132	189	40	712	1,205
Day (50+ miles)	19	64	52	19	155	308
Local (under 50 miles)	50	11	87	40	214	401
Portland Metro/Columbia						
Overnight			74	15	463	552
Day (50+ miles)			83	28	239	350
Local (under 50 miles)			564	144	2,347	3,055
Southern						
Overnight			447	286	1,350	2,083
Day (50+ miles)			207	92	334	634
Local (under 50 miles)			382	170	1,048	1,600
Central						
Overnight			801	218	2,060	3,079
Day (50+ miles)			191	52	152	395
Local (under 50 miles)			248	87	480	815
Eastern						
Overnight			641	981	1,481	3,103
Day (50+ miles)			139	111	141	391
Local (under 50 miles)			209	119	393	721
Mt. Hood/Gorge						
Overnight			230	51	787	1,067
Day (50+ miles)			131	15	524	670
Local (under 50 miles)			204	41	476	721
Statewide Total						
Overnight	672	794	3,351	1,865	12,088	17,304
Day (50+ miles)	155	295	1,386	475	2,641	4,502
Local (under 50 miles)	167	31	2,523	958	7,027	10,508
Total Days	994	1,119	7,260	3,298	21,756	32,313

Note: Days of participation are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

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APPENDIX D

Detailed Questionnaires

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Dear Angler License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact anglers have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing and wildlife viewing opportunities in Oregon.

As a 2008 Oregon angler license holder, we ask that you help us by providing information about your fishing experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not yet fished in 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided.** Deadline for returning the questionnaire is October 31, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, "**Fishing Trip**" is defined as:

You left your house and during the time you were away, spent at least some time fishing before returning home; include both day and overnight trips.

1. Did you fish in Oregon during the six months from **April 2008** through **September 2008**?

   ☐ **No** **(If your answer is no, please go to question #16)**

   ☐ **Yes**

2. Did you take any **saltwater fishing trips** in Oregon **between April 2008 and September 2008?**

   ☐ **No** **(If your answer is no, please go to question #3)**

   ☐ **Yes** ➔

Number of **Overnight saltwater fishing trips**	_____# overnight trips-saltwater
Number of **day trips —50 or more miles from residence**	_____# 50+mile day trips-saltwater
Number of **local trips — less than 50 miles from residence**	_____# local trips-saltwater
Number of **Total Saltwater Fishing Days**	_____# total saltwater fishing days
Number Days using a paid guide or outfitter -saltwater trips only	_____# days using guide-saltwater trips

3. Did you take any **freshwater fishing trips** in Oregon **between April 2008 and September 2008?** ***(Please do not include any trips mentioned in Question #2)***

☐ **No**

☐ **Yes** ➔ Number of **Overnight freshwater fishing trips** _____# overnight trips-freshwater

Number of **day trips —50 or more miles from residence** _____# 50+mile day trips-freshwater

Number of **local trips — less than 50 miles from residence** _____# local trips-freshwater

Number of **Total Freshwater Fishing Days** _____# total freshwater fishing days

Number Days using a paid guide or outfitter -freshwater trips only _____# days using guide-freshwater trips

Please tell us about a **single specific overnight fishing trip** that is most typical of any overnight trips that you may have taken from April 2008 through September 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question #10a)**

4a. How many nights did you stay **overnight** in Oregon on this particular trip? _____# number of nights

4b. Using the community list on the back page (**pg. 4**), please write the **number** of the community (or nearest community) where you stayed overnight (if you stayed in more than one place please indicate your PRIMARY location):

_____ # of community

4c. Approximately how many miles, (**one way**) from your residence did you travel on this overnight trip?
_____# miles one way

4d. What type of accommodations in Oregon did you use while on this particular trip? *(Check **✓ all that apply**)*

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

5. For this overnight trip, was fishing: *(Check **✓ the one that best applies**)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

6. Which of the following best describes the people that accompanied you on this trip: *(Check **✓ the one that best applies**)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify)_____

7. How many people were in your travel group on this overnight fishing trip?
(Count yourself but do not include other families or fishing partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with fishing license
_____ # of **children** (age 17 or younger)

8. Please indicate the species fished for during this overnight trip. *(Check **✓ all that apply**)*

Freshwater		**Marine/Saltwater**	
☐ Bass/Warm water	☐ Sturgeon	☐ Halibut	☐ Salmon
☐ Salmon	☐ Trout	☐ Perch	☐ Tuna
☐ Steelhead	☐ Other _____	☐ Rock/Bottom	☐ Other_____

9. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day** (total # of people in your answer to Q.7.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Overnight Fishing Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (bait, lures, gifts, clothing, souvenirs, etc.)	☐	$ _____ per day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about a **single specific day fishing trip** that is most typical of **any** day trips that you may have taken from April 2008 through September 2008.

☐ **No Day Trips – (Please go to Question #16)**

10a. Using the community list on the back page (**page 4**), please write the **number** of the community (or closest community) to where you made the ***most*** trip-related purchases (e.g., restaurants, food stores, gasoline, etc). _____ # of community

10b. Approximately how many miles, (**one way**) from your residence did you travel on this day trip? _____ # miles one way

11. For this day trip, was fishing: *(Check ✓ **the one that best applies**)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

12. Which of the following best describes the people that accompanied you on this day trip: *(Check ✓ **the one that best applies**)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

13. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or fishing partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with fishing license
_____ # of **children** (age 17 or younger)

14. Please indicate the species fished for during this day trip. *(Check ✓ **all that apply**)*

Freshwater		**Marine/Saltwater**	
☐ Bass/Warm water	☐ Sturgeon	☐ Halibut	☐ Salmon
☐ Salmon	☐ Trout	☐ Perch	☐ Tuna
☐ Steelhead	☐ Other _____	☐ Rock/Bottom Fish	☐ Other _____

15. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day.** (total # of people in your answer to Q. 13) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Day Fishing Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (bait, lures, gifts, clothing, souvenirs, etc.)	☐	$ _____ for the day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

16. During the **six months from April 2008 through September 2008**, how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Fishing Equipment (rods, reels, poles, lines, tackle, lures, electronics, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, etc.)	☐	$ _____ total
Other Retail (processing, taxidermy costs, etc.)	☐	$ _____ total

17. Which of the following includes your total family income (before taxes) in 2007? *(Check ✓ one answer only)*

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

18. Please check your highest education level. *(Check ✓ one answer only)*

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

19. What is your preferred way of communication with ODFW for information on fishing? *(Check ✓ one answer only)*

☐ Email (please provide) _____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify) _____

Community List ➔ Use For Questions #4b and #10a

North Coast
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainier/Scappoose
31 Sauvie Island

Southern
33 Grants Pass/Cave Junction
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

Dear Hunting License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact hunters have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing and wildlife viewing opportunities in Oregon.

As a 2007 and/or 2008 Oregon hunting license holder, we ask that you help us by providing information about your hunting experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not hunted in 2007 or 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided.** Deadline for returning the questionnaire is May 19, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, "**Hunting Trip**" is defined as:

You left your house and during the time you were away, spent at least some time hunting before returning home; include both day and overnight trips.

1. Did you hunt in Oregon during the twelve months from **March 2007** through **February 2008**?

☐ **No** **(If your answer is no, please go to question # 14)**

☐ **Yes** ➔

Number of **Overnight Trips**	_____ # overnight trips
Number of **Day Trips —50 or more miles from residence**	_____ # 50+mile day trips
Number of **Local Trips — less than 50 miles from residence**	_____ # local trips
Number of **Total Hunting Days**	_____ # total days hunting
Number Days using a paid guide or outfitter	_____ # days using guide

Please tell us about a **single specific overnight hunting trip** that is most typical of any overnight trips that you may have taken from March 2007 through February 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question # 8)**

2a. How many nights did you stay **overnight** in Oregon on this particular trip? _____ # number of nights

2b. Using the community list on the back page (**pg. 4**), please write the **number** of the community (or nearest community) where you stayed overnight (if you stayed in more than one place please indicate your PRIMARY location):

_____ # of community

2c. Approximately how many miles, (**one way**) from your residence did you travel on this overnight trip?
_____ # miles one way

2d. What type of accommodations in Oregon did you use while on this particular trip? *(Check ✓ all that apply)*

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

3. For this overnight trip, was hunting: *(Check ✓ the one that best applies)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

4. Which of the following best describes the people that accompanied you on this trip: *(Check ✓ the one that best applies)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

5. How many people were in your travel group on this overnight hunting trip?
(Count yourself but do not include other families or hunting partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with hunting license
_____ # of **children** (age 17 or younger)

6. Please indicate the species hunted during this overnight trip. *(Check ✓ all that apply)*

☐ Deer ☐ Elk ☐ Other big game (specify) _____
☐ Waterfowl ☐ Upland game birds ☐ Wild turkey ☐ Other (specify) _____

7. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day** (total # of people in your answer to Q. 5.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Overnight Hunting Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (ammunition, game bags, gifts, clothing, souvenirs, etc.)	☐	$ _____ per day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about a **single specific day hunting trip** that is most typical of **any** day trips that you may have taken from March 2007 through February 2008.

☐ **No Day Trips – (Please go to Question # 14)**

8a. Using the community list on the back page (**page 4**), please write the **number** of the community (or closest community) to where you made the ***most*** trip-related purchases (e.g., restaurants, food stores, gasoline, etc). _____ # of community

8b. Approximately how many miles, (**one way**) from your residence did you travel on this day trip? _____ # miles one way

9. For this day trip, was hunting: *(Check ✓ the one that best applies)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

10. Which of the following best describes the people that accompanied you on this day trip: *(Check ✓ the one that best applies)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

11. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or hunting partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with hunting license
_____ # of **children** (age 17 or younger)

12. Please indicate the species hunted during this day trip. *(Check ✓ all that apply)*

☐ Deer ☐ Elk ☐ Other big game (specify)_____
☐ Waterfowl ☐ Upland game birds ☐ Wild turkey ☐ Other (specify) _____

13. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day**.
(total # of people in your answer to Q. 11) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Day Hunting Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (ammunition, game bags, gifts, clothing, souvenirs, etc.)	☐	$ _____ for the day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

14. During the **twelve months from March 2007 through February 2008**, how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Hunting Equipment (firearms, bows/arrows, telescopic sights, decoys, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, etc.)	☐	$ _____ total
Other Retail (meat processing, taxidermy costs, etc.)	☐	$ _____ total

15. Which of the following includes your total family income (before taxes) in 2007? *(Check ✓ one answer only)*

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

16. Please check your highest education level. *(Check ✓ one answer only)*

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

17. What is your preferred way of communication with ODFW for information on hunting? *(Check ✓ one answer only)*

☐ Email (please provide) _____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify)

Community List ➔ Use For Questions # 2b and # 8a

North Coast
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainier/Scappoose
31 Sauvie Island

Southern
33 Grants Pass/Cave Juncti
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

If there is anything else that you would like to share with ODFW, please use the space below:

_____

_____

_____

Dear Shellfish License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact that crabbing, clamming and other shellfishing have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing, shellfishing, and wildlife viewing opportunities in Oregon.

As a 2007 and/or 2008 Oregon shellfish license holder, we ask that you help us by providing information about your shellfishing experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not taken a crab, clam or other shellfish trip in 2007 or 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided**. Deadline for returning the questionnaire is October 20, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, **"Crab, Clam or Other Shellfish Trip"** is defined as:

You left your house and during the time you were away, spent at least some time shellfishing before returning home; include both day and overnight trips.

1. Did you participate in crabbing, clamming or other shellfish harvesting in Oregon during the twelve months from **September 1, 2007 through September 1, 2008?**

☐ **No** **(If your answer is no, please go to question # 14)**

☐ **Yes** ➔

Number of **Overnight Trips**	_____ # overnight trips
Number of **Day Trips —50 or more miles from residence**	_____ # 50+mile day trips
Number of **Local Trips — less than 50 miles from residence**	_____ # local trips
Number of **Total Shellfish Days**	_____ # total days shellfishing
Number Days using a paid guide or outfitter	_____ # days using guide

Please tell us about a **single specific overnight crab, clam or other shellfish trip in Oregon** that is most typical of any overnight trips that you may have taken from September 1, 2007 through September 1, 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question # 8)**

2a. How many nights did you stay **overnight** in Oregon on this particular trip? _____ # number of nights

2b. Using the community list on the back page **(page 4)**, please write the **number** of the community (or closest community) where you stayed overnight: (if you stayed in more than one place please indicate your PRIMARY location)

_____# of community

2c. Approximately how many miles, **(one way)** from your residence did you travel on this overnight trip?
_____ # miles one way

2d. What type of accommodations in Oregon did you use while on this particular trip? (Check ***✓ all that apply***)

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

3. For this overnight trip, was shellfishing? (Check ***✓ the one that best applies***)
☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

4. Which of the following best describes the people that accompanied you on this trip? (Check ✓ ***the one that best applies***)
☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

5. How many people were in your travel group on this overnight shellfishing trip?
(Count yourself but do not include other families or partners/buddies who paid their own expenses.)
_____ # of **adults** (age 18 years or older) ➔ _____ # adults with shellfish license
_____ # of **children** (age 17 or younger)

6. Please indicate the species harvested during this overnight trip: (Check ***✓ all that apply***)
☐ Crabs ☐ Bay clams ☐ Razor clams ☐ Sand/mud shrimp
☐ Mussels ☐ Abalone ☐ Rock scallops ☐ Other (specify) _____

7. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day.**
(total # of people in your answer to Q. 5) Please check ✓ **"No Expenses"** if you had no expenses for an item.

Single Specific Overnight Shellfishing Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (bait, traps, gifts, clothing, souvenirs, dive shop, etc.)	☐	$ _____ per day
Other Recreational & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about **a single specific crab, clam or other shellfish day trip** that is most typical of **any** day trips that you may have taken from September 1, 2007 through September 1, 2008.

☐ **No Day Trips – (Please go to Question # 14)**

8a. Using the community list on the back page **(page 4),** please write the **number** of the community (or closest community) to where you made the *most* trip-related purchases (e.g., restaurants, food stores, gasoline, etc.) _____ # of community

8b. Approximately how many miles, **(one way)** from your residence did you travel on this day trip? _____ # miles one way

9. For this day trip, was shellfishing? (Check ✓ ***the one that best applies***)

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

10. Which of the following best describes the people that accompanied you on this day trip? (Check ✓ ***the one that best applies***)

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify)_____

11. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with shellfish license
_____ # of **children** (age 17 or younger)

12. Please indicate the species harvested during this day trip: (Check ✓ ***all that apply***)

☐ Crabs ☐ Bay clams ☐ Razor clams ☐ Sand/mud shrimp
☐ Mussels ☐ Abalone ☐ Rock scallops ☐ Other (specify) _____

13. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day.**
(total # of people in your answer to Q. 11) Please check √ **"No Expenses"** if you had no expenses for an item.

Single Specific Day Shellfishing Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (traps, bait, gifts, clothing, souvenirs, dive shop, etc.)	☐	$ _____ for the day
Other Recreational & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

14. During the **twelve months from September 1, 2007 through September 1, 2008,** how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check √ **"No Expenses"** if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Shellfish Equipment (traps, buoys, shovel, rakes, nets, clam bags, rings, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, SCUBA, etc.)	☐	$ _____ total
Other Retail (meat processing, propane, etc.)	☐	$ _____ total

15. Which of the following includes your total family income (before taxes) in 2007? (Check ***✓ one answer only***)

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

16. Please check your highest education level: (Check ***✓ one answer only***)

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

17. What is your preferred way of communication with ODFW for information on shellfishing? (Check ***✓ one answer only***)

☐ Email (please provide)_____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify) _____

Community List ➔ Use For Questions # 2b and # 8a

North Coast
1 Astoria/Warrenton
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Netarts/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport/Yachats
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
15 Albany/Lebanon
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainer/Scappoose
31 Sauvie Island

Southern
32 Gold Hill/Rogue River
33 Grants Pass/Cave Junction
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
47 Arlington/Condon
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

APPENDIX E

Sample Design

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Sample Design

Appendix E describes the sampling design for the study and describes the approach taken to produce findings from the completed questionnaires. For each recreation activity, the sample design and timing of the questionnaire mailings and telephone interviews (in the case of wildlife viewing participants) was designed to provide the seasonal data most appropriate to represent each recreation activity, which was then reported as findings for calendar year 2008.

Fishing

The sample of self-administered questionnaires for fishing was mailed in two waves in order to collect detailed data for a twelve-month period October, 2007 through September, 2008: First, in May, 2008 for activity that occurred from October, 2007 - March, 2008 (fall/winter season), and next in November, 2008 for activity that occurred from April - September, 2008 (spring/summer season). The sample was randomly selected from the ODFW fishing license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 24,911 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW fishing license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 4,533 questionnaires were returned for a response rate of 18 percent.

Hunting

The sample of self-administered questionnaires for hunting was mailed in one wave (in March, 2008) to collect detailed data for hunting activity that occurred during the twelve-month period from March 2007 through February 2008. The sample was randomly selected from the ODFW hunting license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 19,833 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW hunting license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 5,200 questionnaires were returned for a response rate of 26 percent.

Wildlife Viewing

The sample was selected through a random digit-dial telephone survey (to include non-listed and unpublished telephone numbers) of Oregon resident 18 years and older. The sample of telephone interview was conducted in four waves to coincide with each season with the first wave conducted in March, 2008 to capture wildlife viewing activity during the winter months of the year (Dec.-Feb.), the second wave conducted in June, 2008 to capture spring activity (Mar.-May), the third wave conducted in September, 2008 to capture summer activity (Jun.-Aug.), and the final wave conducted in December, 2008 to capture fall activity (Sep.-Nov.). A sample of 1,624 Oregon residents agreed to be interviewed and 1,000 interviews were completed for a response rate of 62%. In addition, the sample was stratified geographically in order to obtain a representative sample of residents throughout the state.

Shellfishing

The sample of self-administered questionnaires for shellfish harvesting was mailed in one wave (in September, 2008) to collect detailed data for shellfish harvest activity that occurred during the twelve-month period from September 2007 through August 2008. The sample was randomly selected from the ODFW shellfish license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 3,224 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW hunting license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 1,000 questionnaires were returned for a response rate of 35 percent.

Geographic Allocation

Detailed findings for number of trips, days of participation, and expenditures are based on an allocation of the total number of trips taken during twelve-month period, as reported by the participants. Trip expenditure data was applied to locations throughout the state (regions and counties) based on the community (or nearest community) reported for as the primary location where participant spent the night overnight stay or in the case of day trip, the community where the most trip-related purchases were made.

Confidence levels

Generally, representative samples of 1,000 or more provide very reliable results. Confidence levels for respondent segments are shown in the table below.

Segment	Sample Size	Confidence Level (%)	
		90% Level (+/-)	95% Level (+/-)
Hunters	5,200	1.2	1.4
Fishers	4,533	1.3	1.5
Shellfishers	1,122	2.6	3.0
OR Households	1,000	2.6	3.1

Nonresponse Bias

The effect of nonresponse error was measured directly through the use of telephone interviews for each of the three recreation activities that were reported through use the self administered questionaires (fishing, hunting, and shellfishing). Telephone interviews were conducted for a random sample of nonrespondents (those who did not return a questionnaire) for each of the three segments. The sample of nonrespondents was 200 for fishing and hunting, and 100 for shellfish harvesting. Overall, responses for each of these groups were similar, in terms of trip characteristics and expenditures, to those reported by the initial respondents. Through these telephone interviews, additional detail was gathered with regard to where to the allocation of expenditures -- before, during, or in the community closest to where the recreation activity occurred. The additional information was used to allocate expenditures at the regional and county-level.

State of Oregon
DEQ Department of Environmental Quality

Outstanding Resource Waters 2027

Written comments

These are written comments DEQ has received from advisory committee members after the second advisory committee meeting.

Commenters

American Rivers 2

Bureau of Land Management 8

Confederated Tribes of Grand Ronde 17

DOGAMI 25

Friends of the Kalmiopsis 27

Josephine County 37

Kalmiopsis Audubon Society 43

Kalmiopsis Guides Association 53

Oregon Department of Fish and Wildlife 57

Patriot Nickel Corp. 129

Rogue River Siskiyou National Forest 140

Save the Wild Rogue Campaign 148

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

August 26, 2026

Aron Borok
Rulemaking Coordinator
Oregon Department of Environmental Quality, Water Quality Division
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Submitted via email

Re: Comments on the Draft Fiscal Impact Statement in Association with the Proposed Illinois River and Rough and Ready Creek Outstanding Resource Water Classification

Aron,

Thanks for the opportunity to review the Draft Fiscal Impact Statement (FIS) released in connection with Rulemaking Advisory Committee. I write on behalf of American Rivers both to support its central conclusions and to supplement the record with additional economic evidence that reinforces the case for adoption.

American Rivers has a direct and long-standing interest in this watershed. **ORW classification under Oregon's antidegradation policy does not preclude any economic activity while preserving existing economic benefits derived from the exceptional water quality that supports this region's fisheries, recreational economy, and drinking water supplies.**

The Draft FIS Correctly Concludes That the Proposed Rules Impose Minimal Cost While Preserving Substantial, Well-Documented Economic Benefits

American Rivers agrees with DEQ's determination that the proposed ORW designation will have little to no fiscal impact on industrial and commercial forest harvesting, on DEQ's own permitting workload, or on the public at large, because the designation locks in — rather than adds to — water quality conservation measures that are already being achieved through existing authorities. We likewise agree that the designation's principal effect is protective: it conserves the existing economic value associated with a healthy watershed, rather than creates, the economic value that clean water in these watersheds already generates.

The FIS's headline economic finding — that tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs (Visit Grants Pass, 2023) — is well supported and, if anything, understates the full regional economic case for designation. The Illinois River is the Rogue's largest tributary, and its wild, hatchery-free salmon and steelhead runs and whitewater recreation directly support recreation economies not only in Josephine County but downstream in Curry County and the

South Coast tourism region as well. We ask DEQ to consider the following additional, publicly available data points as part of the rulemaking record:

Regional Recreation Economy Tied to the Illinois–Rogue System

Geography / Metric	Figure	Source
Josephine County tourism spending (annual, Visit Grants Pass metric)	$155 million	Visit Grants Pass, 2023
Josephine County tourism jobs	2,230	Visit Grants Pass, 2023
Josephine County outdoor recreation trip spending (2019)	$174.8 million	Earth Economics/Travel Oregon, 2021
Josephine County outdoor recreation jobs (2019)	1,701	Earth Economics/Travel Oregon, 2021
Josephine County outdoor recreation trip spending (2022)	$216.5 million	Earth Economics/OPRD, 2024
Josephine County outdoor recreation jobs (2022)	2,213	Earth Economics/OPRD, 2024
Josephine County outdoor recreation GDP contribution (2022)	$158.7 million	Earth Economics/OPRD, 2024
Josephine County state & local tax revenue from recreation (2022)	$23.6 million	Earth Economics/OPRD, 2024
Curry County outdoor recreation trip spending (2022)	$533.6 million	Earth Economics/OPRD, 2024
Curry County outdoor recreation jobs (2022)	6,093	Earth Economics/OPRD, 2024
South Coast region outdoor recreation output (2019)	$1.48 billion	Earth Economics/Travel Oregon, 2021
South Coast visitor spending, all-time high (2023)	$561 million	Dean Runyan Associates / QualityInfo, 2024

These two Josephine County data sets measure related but distinct things and should be read together, not as duplicates: the Visit Grants Pass figure captures overall visitor/tourism spending countywide, while the Travel Oregon/Earth Economics figures isolate spending specifically tied to outdoor recreation trips — including local residents recreating close to home, not just overnight visitors. By this narrower, recreation-specific measure alone, outdoor recreation supported an estimated $216.5 million in trip-related spending, 2,213 jobs, and $158.7 million in GDP contribution in Josephine County in 2022, up from $174.8 million and 1,701 jobs in the 2019 baseline year — growth that occurred while the Illinois River and Rough and Ready Creek retained the high water quality the proposed ORW designation would lock in**.** This confirms that the water-dependent recreation economy the FIS highlights for Josephine County is not only substantial today but has been growing, reinforcing

the case that maintaining current water quality — rather than allowing any degradation — is the fiscally prudent course.

Sources: Visit Grants Pass (2023), 2022–23 Annual Report; Mackey, E., & Cousins, K. (2024), Economic Analysis of Outdoor Recreation in Oregon: 2022 Update, Earth Economics/OPRD; Mojica, J., Cousins, K., & Madsen, T. (2021), Economic Analysis of Outdoor Recreation in Oregon, Earth Economics/Travel Oregon; Dean Runyan Associates, Oregon Travel Impacts, as summarized by Oregon Employment Department, QualityInfo.org (2024).

Research Documents More Than $1.5 Billion in Annual Value From the Salmon That Depend on These Waters

Economics firm ECONorthwest analyzed the economic value of salmon and steelhead in the Wild & Scenic Rogue River. The resulting peer-reviewed-literature-based analysis, *Helvoigt, T.L., and D. Charlton. 2009. The Economic Value of Rogue River Salmon* remains directly relevant to this rulemaking and should be added to the record.

That analysis quantified three distinct components of the economic value that Rogue River salmon and steelhead provide to West Coast residents:

Value Component	**Estimated Annual Value (2007 USD)**
Commercial fishing value	Not less than $1.36 million
Sport (recreational) fishing value	Not less than $16 million
Non-use (existence) value to West Coast residents	Approximately $1.5 billion
Total documented annual value	Well over $1.5 billion

The report's most striking finding is that non-use value — the value West Coast residents place simply on knowing that wild Rogue River salmon continue to exist, whether or not they ever fish for them — dwarfs both commercial and recreational fishing value combined. Oregon, Washington, and California households were found to place a per-person value of $32.37 per year on the Rogue fishery, and Oregonians alone have consistently told state pollsters, across more than a decade of the Oregon Population Survey, that they are willing to pay over $70 million annually to improve salmon habitat statewide. This is the same category of public value that a permanent, cost-effective safeguard like ORW designation is uniquely suited to conserve, because non-use value depends entirely on the public's confidence that habitat will remain intact — not on any individual visiting the river at all.

The report is directly on point for this rulemaking. It identifies tributary streams — at least 100 stream miles across 14 Rogue tributaries — as providing essential cold-water refugia that Rogue salmon and steelhead depend on for survival, particularly as summer water temperatures in the mainstem Rogue rise. The Illinois River and Rough and Ready Creek are among the most significant of these tributary systems, and the report's authors concluded that “enhanced protection of the critical streams that flow into the Wild & Scenic Rogue River is a virtually costless action that will lead to significant economic benefits for both the present and future generations.” That conclusion applies with full force to the ORW designation proposed here. Notably, even using the report's conservative 2007-dollar estimates without adjusting for inflation or nearly two decades of population growth in the West Coast

willingness-to-pay base, the documented value of the salmon runs this rulemaking would help protect exceeds ten times the $155 million in annual tourism spending the Draft FIS identifies for Josephine County alone. The number of salmon and steelhead fishing guides and recreational anglers operating out of Gold Beach, Oregon, especially during summer and fall Chinook seasons is significant (See: https://goldbeachoregon.com/fishing-guides/ and https://oregondiscovery.com/rogue-river-north-jetty). Since a large portion of the Rogue River salmon is directly supported by the critical habitat in Illinois River the current ongoing contribution of this fishery to the local economy should be noted in the fiscal impact analysis.

Source: Helvoigt, T.L., and D. Charlton (2009). The Economic Value of Rogue River Salmon. ECONorthwest, Eugene, OR.

The Fishery and Recreation and Economic Values the FIS Describes Are Independently Documented by the U.S. Forest Service

The FIS's economic conclusions are corroborated by the U.S. Forest Service's own management findings for this exact river corridor. The Rogue River-Siskiyou National Forest has designated the Illinois River's fishery, water quality, scenery, and recreation as Outstandingly Remarkable Values under its Wild and Scenic River management plan, and describes the Illinois as one of the few West Coast rivers with a wild, hatchery-free salmon and steelhead population — a distinction that depends entirely on maintaining the water quality the proposed ORW rule would protect.

The Forest Service reports that Illinois River recreation use can reach 1,000 visitors on a single summer day along a five-mile stretch, illustrating the intensity of the recreation economy the FIS's tourism-spending figures reflect.

Sources: USFS Rogue River-Siskiyou National Forest, "Wild and Scenic Illinois River" (fs.usda.gov).

Protecting the Illinois–Rogue Watershed Also Protects Downstream Drinking Water — an Ecosystem Service the FIS Does Not Fully Monetize

The FIS appropriately focuses on tourism and forestry impacts, but American Rivers urges DEQ to also weigh the value of the drinking-water protection this designation provides. Water quality in the Illinois River directly affects the Lower Rogue River downstream, from which the City of Gold Beach draws its municipal drinking water supply. U.S. EPA research demonstrates that undeveloped source watersheds measurably reduce drinking-water treatment costs and EPA's Healthy Watersheds Program has documented cases in which source-water protection allowed communities to avoid tens of millions of dollars in filtration infrastructure altogether.

An ORW designation for the Illinois River and Rough and Ready Creek is a direct, low-cost way to secure these downstream water-treatment cost avoidance benefits for Gold Beach and other Rogue basin communities, in addition to the recreation and fishery benefits the FIS already identifies.

Sources: U.S. EPA, Healthy Watersheds Program, Fact Sheet: The Economic Benefits of Protecting Healthy Watersheds, EPA-841-F-26-001 (2026); Curry Watersheds Partnership/USFS Gold Beach Ranger District, Lower Rogue Watershed Action Plan (2015).

American Rivers Supports DEQ's Treatment of the City of Cave Junction and Recommends Continued Coordination

We agree with the FIS's careful, fact-specific treatment of the City of Cave Junction's wastewater treatment plant, which discharges to the Illinois River roughly five miles upstream of the proposed ORW boundary and currently operates well below its permitted design flow designed for communities up to 10,000. The latest population estimate for Cave Junction was 2,071 according to census figures. American Rivers supports DEQ's approach of evaluating any future increase through the same antidegradation analysis already required outside the ORW context. We encourage DEQ to continue engaging with Cave Junction — so that if a future plant expansion is needed, the City has access to no-cost options that are consistent with ORW classifications. We also recognize the economic values the exceotionally clean water the Illinois River provides the City, a gateway community to the river.

Supporting the U.S. Forest Service's Existing Responsibilities and Reducing Costs

An Outstanding Resource Waters (ORW) designation would classify the portions of the Illinois River and Rough and Ready Creek as outstanding waters of the State directly reinforcing the Forest Service's Wild and Scenic River management mandate, since protecting water quality and free-flowing character are core statutory obligations under the Wild and Scenic Rivers Act. First, this would support the Forest Service's own monitoring and support its requirements protect and enhance their Outstandingly Remarkable Values. Second, protecting water quality preserves recreation, fisheries, and tourism-based revenue tied to the rivers, supporting local economies and reducing pressure on the agency to fund costly remediation after any degradation occurs.

Thank you for the opportunity to comment on this important Fiscal Impact Analysis. Please do not hesitate to contact us with any questions.

Respectfully submitted,



David Moryc

Senior Director, River Protection Program

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Helvoigt, T.L., et al. (2009). Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River. ECONorthwest, prepared for the Save the Wild Rogue Campaign. [Companion report; cited in KS Wild letter of support for S. 1589, October 2021.]

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U.S. Forest Service

USDA Forest Service, Rogue River-Siskiyou National Forest. "Wild and Scenic Illinois River" [recreation site page]. fs.usda.gov/r06/rogue-siskiyou/recreation/wild-and-scenic-illinois-river.

Ecosystem Services / Drinking Water

U.S. Environmental Protection Agency, Healthy Watersheds Program. Fact Sheet: The Economic Benefits of Protecting Healthy Watersheds. EPA-841-F-26-001 (2026).

Curry Watersheds Partnership and USDA Forest Service, Gold Beach Ranger District. Lower Rogue Watershed Action Plan (2015).

State of Oregon
DEQ Department of Environmental Quality

Illinois River and Rough and Ready Creek Outstanding Resource Water Rulemaking Draft Fiscal Impact Statement

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Executive Summary

The proposed rules would preserve benefits to businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

ORW rules protect the current water quality at the time the rules become effective. Commercial forest harvesting that may occur in the two watersheds can continue without impacting water quality as long as harvest rates do not increase and Forest Practice Act rules are followed. Moreover, these watersheds are included in the Rogue River Temperature TMDL that is currently being updated. This TMDL includes load allocations for forested areas that, as they are implemented through improvements in forest harvest practices, will improve water quality in the watershed. As these are already required through the TMDL irrespective of the ORW designation, the proposed rules will not have a fiscal impact on any industrial or commercial forest harvesting.

Under the proposed rules, DEQ cannot: 1. issue a new National Pollutant Discharge Elimination System permit or expand an existing NPDES permit to discharge wastewater to the ORWs; or 2. issue or expand an NPDES permit upstream of the ORWs if the discharge will result in lowering of water quality in the ORWs. DEQ can issue a Water Pollution Control Facility permit that does not allow a direct or indirect discharge to surface waters. These requirements may increase compliance costs for facilities wishing to operate in the watershed if such measures are not already required under existing regulatory requirements.

The proposed rules may impact residents of the City of Cave Junction. The City's wastewater treatment plant has a NPDES permit to discharge into the Illinois River approximately five miles upstream of the proposed ORW designation. At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. As there are five miles between the discharge and the ORW designation, and many other considerations besides the ORW, it's

possible that future expansion will not affect the water quality in the ORWs. However, if a future plant expansion would degrade water quality in the ORW, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Statement of cost of compliance

Federal agencies

US Forest Service – Rogue River-Siskiyou National Forest

There are few direct impacts to the Rogue River-Siskiyou National Forest. The agency manages most of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. A large portion of the area that is proposed to be designated already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management standards from the Northwest Forest Plan's Aquatic Conservation Strategy. Any future planning efforts would require disclosure of the ORW designation in the public process required under the National Environmental Policy Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

US Bureau of Land Management (BLM) – Medford District

There are few direct impacts to the Medford District BLM. The agency manages a portion of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. This portion of lands already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management objectives for maintaining water quality from the Southwestern Oregon Resource Management Plan. Any future planning efforts would require disclosure of the ORW designation in the public process under the National Environmental Protection Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

State agencies

DEQ

There are few direct impacts to DEQ. The proposed rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of the Illinois River and Rough and Ready Creek from their current condition, other than construction projects with a short-term impact, which already require permits. Therefore, there should be no need to develop new permits, 401 certifications, or total maximum daily loads for these waterbodies. To the extent that Cave Junction plans for any expansion of its wastewater treatment system in the future, DEQ permitting staff will need to ensure that the expansion will not degrade water quality in waters proposed for ORW designation. The analysis needed to do so is the same or similar as what is required in any permit as part of antidegradation analysis. As a result, DEQ expects that the analysis will require little to no additional staff time.

DEQ also considers ORW designations as part of Division 33 water rights reviews that are coordinated through the Water Resources Department. However, since ORW designation is already a part of the form that DEQ staff fill out for Division 33 reviews, there will be minimal to

no additional work needed to consider water rights applications in the waters proposed for ORW designation, other than that needed to update DEQ's database of ORW waters.

Local governments

The proposed ORW designation will continue to protect the recreational values of both Rough and Ready Creek and the Illinois River. As a result, the ORW designations are expected to support local revenue related to recreation and tourism.

The city of Cave Junction has an NPDES permit for its wastewater treatment plant that discharges to the Illinois River five miles upstream of the proposed ORW designation. The wastewater treatment plant only discharges to the Illinois River from November 1 to May 31. From June 1 to October 31, the effluent from the wastewater treatment plant is used at a nearby golf course.

The city of Cave Junction last upgraded its wastewater treatment plant in 1998 to a system with an aerated activated sludge treatment plant with secondary clarifiers and an aerobic sludge digester. and is currently operating below capacity. As of the City's last permit renewal in 2022, the plant was operating at 44% of its wet weather design flow and 40% of its dry weather design flow on average.[1]

At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will conduct modeling to determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. Given the distance (about 5 miles) between the discharge and the ORW designation, it's possible that future expansion will not have an effect on the water quality in the ORW designated waters. However, if there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Public

DEQ does not expect a fiscal impact to the public as a result of this rule.

Large businesses - businesses with more than 50 employees

The rules will not impact large businesses conducting industrial forestry but may impact other types of large businesses that require wastewater permits. Large businesses that have industrial forest holdings in the waters proposed to be designated as ORWs will not be impacted by the ORW designation. There are approximately 2300 acres of industrial forestlands in these waters (Figure 1). DEQ has determined that compliance with current state forest practice rules for standard harvest are sufficient to ensure that any harvest will not lower water quality. As a result, there will be no impact on large forestry businesses.

[1] See City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp. and ODEQ, 2022. National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.

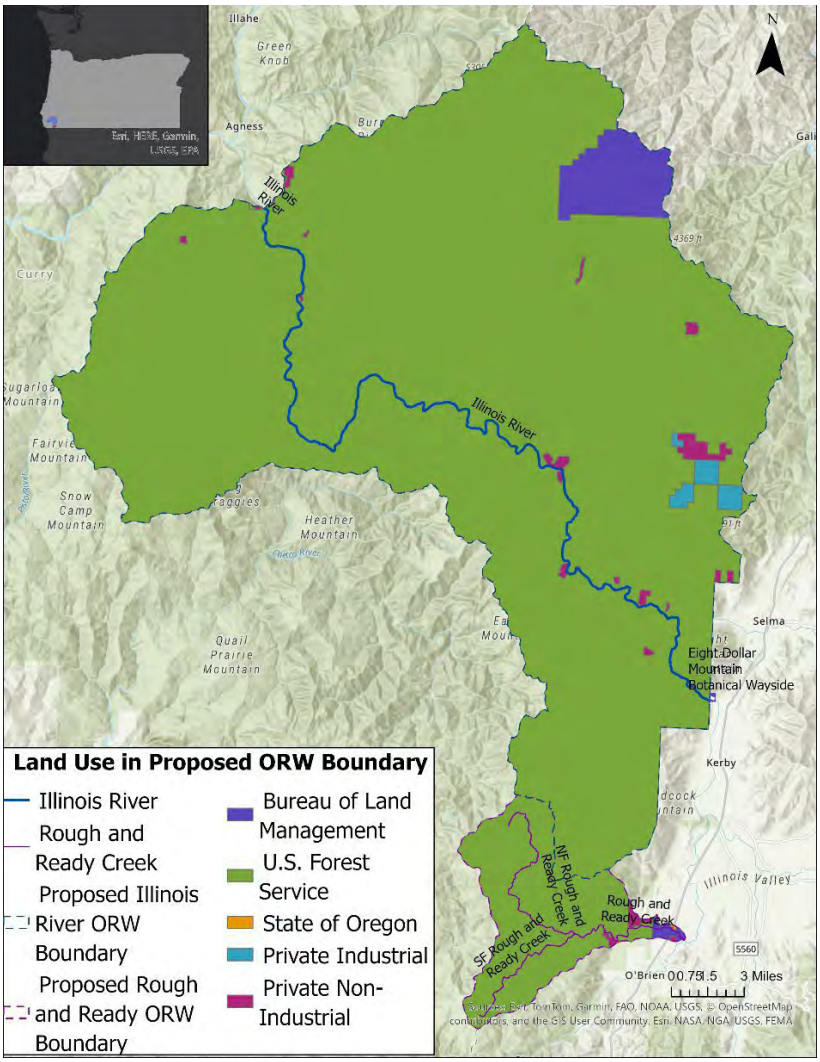

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

The rules may impact other large businesses that need a water quality permit. Absent the proposed rules, companies could obtain a National Pollutant Discharge Elimination System permit to discharge directly or indirectly to waters proposed for ORW designation. DEQ antidegradation rules allow a new NPDES permit if the discharge will meet any relevant TMDL requirements, protect endangered species, and result in no more than *de minimis* lowering of water quality, or more than *de minimis* lowering with DEQ or Environmental Quality Commission approval.[2]

Due to the proposed rules, businesses could not obtain an NPDES permit, but could apply for a WPCF permit, which does not allow direct or indirect discharge to waters of the state. For example, wastewater from operations could be placed in a lined holding pond or discharged to an underground injection well that had no connection to surface waters. Ensuring no discharge to surface waters could increase compliance costs to these companies, although compliance costs for monitoring could be less if there is no discharge.

[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

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Statement of cost of compliance

State agencies

DEQ

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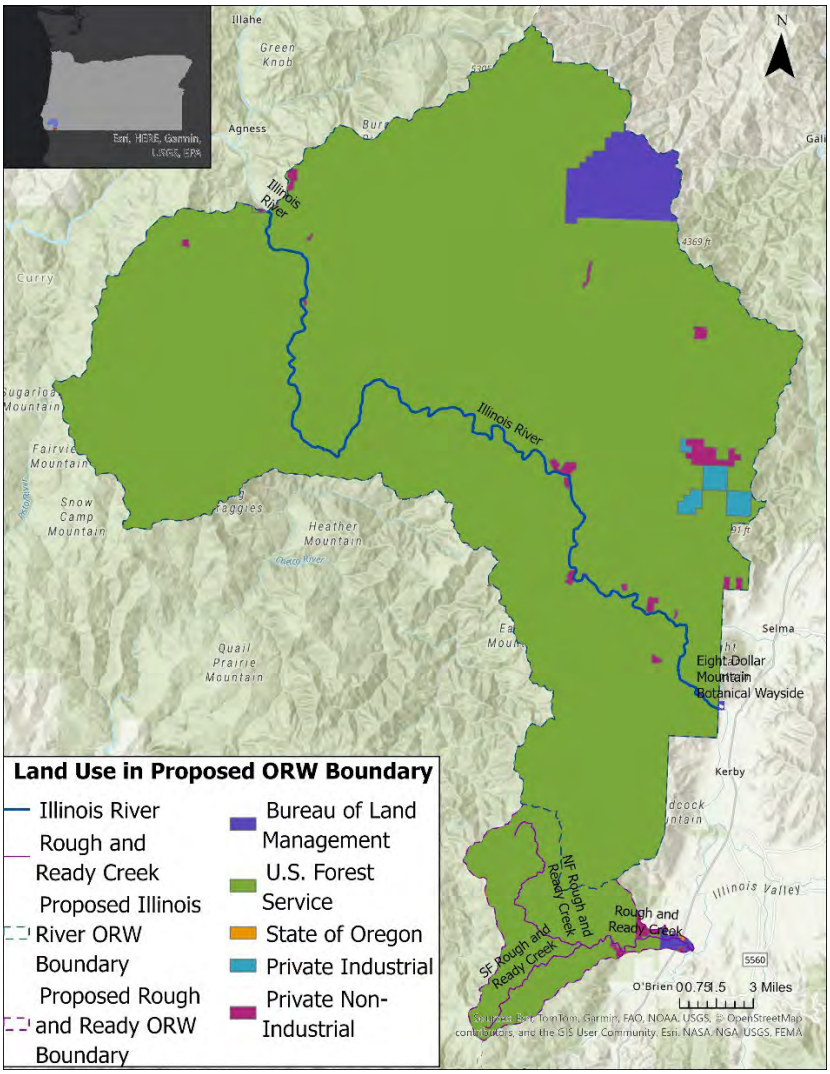

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

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[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

Oregon
Tina Kotek, Governor

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August 14, 2026

To: Aron Borok, Oregon Department of Environmental

RE: DOGAMI Comments, DEQ Outstanding Recourse Waters Rulemaking for Illinois River/Rough and Ready Creek

Dear Aron,
These DOGAMI comments are in support of DEQ's rulemaking to designate the Wild and Scenic portions of the Illinois River and Rough and Ready Creek as Outstanding Resource Waters. These comments are specifically related to existing or proposed mine sites upstream of the Illinois River Outstanding Resource Waters designation area:

DOGAMI is sharing this information for DEQ's awareness, as we do not anticipate these operations will be adversely impacted by the proposed Outstanding Resource Watershed (ORW) designations. Should any of these sites require DEQ NPDES 1200-A Industrial Stormwater General Permit (1200-A), or Water Pollution Control Facility (WPCF) 1000 General Permit coverage, the applicable permit application and review requirements should ensure that potential water quality impacts to the Illinois River and the proposed ORW area are appropriately evaluated and addressed.

There are four DOGAMI sites located in the upstream watershed of the Illinois River. One site is currently permitted under a DOGAMI Surface Mine Operating Permit, two sites are covered under DOGAMI Exclusion Certificates, and one site is a closed application that may be resubmitted to DOGAMI based on recent correspondence with the applicant:

1. **DOGAMI ID# 17-0044** (Latitude 42.238616, Longitude -123.613313): Reeves Creek Quarry is covered under a DOGAMI Exclusion Certificate (see ORS 517.753, and OAR 632-030-0016) and operated by Josephine County Road Department. The site consists of a ~4 Acre quarry site. The site is near Reeves Creek which flows into Lake Selmac. Lake Selmac flows into Deer Creek and ultimately to the Illinois River at the upstream end of the ORW area northwest of Eight Dollar Mountain. This site currently is not registered under either the 1200-A or WPCF 1000 Permits. DOGAMI does not have any concerns about this site impacting the ORW designation for Illinois River given its location. DOGAMI does not anticipate any increased costs of compliance, should this site require coverage in the future under the 1200-A or WPCF 1000 Permits. Note this site is

operated by an extension of the local government, so it is not operated by a large or small business.

2. **DOGAMI ID# 17-0137** (Latitude 42.085751, Longitude -123.652458): Freeman Quarry is covered under a DOGAMI Surface Mine Operating Permit and operated by Camps Custom Excavating which is assumed to be a small business. The site consists of a 31.6-acre rock quarry operation. This site does not currently have coverage under the 1200-A or WPCF Permits. The site is near a drainage called "Deep Gravel Cut" on the USGS topographic map, a drainage that was significantly impacted by historic hydraulic placer gold mining which created unnatural landforms and drainage patterns. Deep Gravel Cut flows into the West Fork Illinois River just downstream of the confluence of Rough and Ready Creek with the West Fork Illinois River. This is the largest and most active mine site in the area upstream of the Illinois River ORW designation area. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ NPDES 1200A or WPCF 1000 general permit.
3. **DOGAMI ID# 17-0154** (Latitude 42.191453, Longitude -123.674087): This is a withdrawn application for a Surface Mine Operating Permit for the proposed Westside Quarry. Although this application was withdrawn, the applicant (a sole proprietor and therefore a small business), has recently been in contact with DOGAMI about reapplying which is why DOGAMI is including this site in our comments. The site is located west of the Illinois River downstream of Cave Junction 2.75 miles above the ORW area. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ 1200-A or WPCF 1000 Permits.
4. **DOGAMI ID# 17-0157** (Latitude 42.102870, Longitude -123.711538): The Airport Drive mine is covered under a DOGAMI Exclusion Certificate (see ORS 517.753, and OAR 632-030-0016) and operated by Paul Cunningham (a sole proprietor and therefore a small business). The site is a 5.3-acre quarry site located northeast of Rough and Ready Creek. This site does not currently have coverage under the 1200-A or WPCF Permits. This site is near Parker Creek, however, the unnamed drainage adjacent to the site is a tributary to Mendenhall Creek (not Parker Creek) which flows into the West Fork of the Illinois River. DOGAMI does not anticipate any increased costs of compliance, should this site need future coverage under the DEQ NPDES 1200A or WPCF 1000 general permit.

Please let us know if you have any questions about these sites.

Sincerely,
Vaughn Balzer RG
Floodplain Mining Reclamationist – Rules Coordinator
DOGAMI - MLRR

August 31, 2026

To: Aron Borok
Water Quality Permitting Variance Specialist
Department of Environmental Quality

Re: Wild and Scenic Illinois River and Rough and Ready Creek Outstanding Resource Waters, Draft Fiscal Impact

Dear Mr. Borok:

Thank you for the opportunity to provide comments on the Department of Environmental Quality's draft Fiscal Impact Statement (FIS) and to serve on the Rulemaking Advisory Committee (RAC) for the proposed Rough and Ready Creek and National Wild and Scenic Illinois River Outstanding Resource Waters designation.

Based on DEQ's presentation at the last RAC meeting, we understand that the Fiscal Impact Statement (FIS) is intended to have a specific format as per ORS 183.335(2)(b)(E) which states that:

> A statement of fiscal impact identifying state agencies, units of local government and the public that may be economically affected by the adoption, amendment or repeal of the rule and an estimate of that economic impact on state agencies, units of local government and the public. In considering the economic effect of the proposed action on the public, the agency shall utilize available information to project any significant economic effect of that action on businesses which shall include a cost of compliance effect on small businesses affected…

We appreciate that DEQ has identified and included many of the economic benefits that will come from ensuring that these nationally outstanding stream systems—with the extraordinary water quality, important and often unique ecological values and the critical habitat they provide—are protected into the future.

We'd like to reiterate that that the FIS should also account for additional economic benefits of protecting these stream systems across a broader area, including in Curry County.

Economic benefits to the Wild and Scenic Rogue River and Curry County

The lower part of the Wild Section of the Wild and Scenic Illinois River is in Curry County as is its confluence with the Wild and Scenic Rogue River where the Illinois

contributes 25% of the flow to the Rogue River. That the Illinois' 25% contribution to the waters of the Rogue is exceptionally clean and clear is another benefit to the Rogue River, Curry County and Gold Beach.

Equally important, the wild anadromous fish populations of the Illinois River and its tributary, Rough and Ready Creek, are very important to the world class fishery of the Rogue Basin and to its contribution to the offshore commercial fisheries of Oregon and California. Most of the Wild and Scenic Illinois' River's wild winter steelhead are caught in the lower Rogue River in Curry County. The Illinois River's wild salmon are also primarily caught in the Rogue River or off shore in California and Oregon.

The Illinois Rivers' large lower tributaries - Collier Creek, Silver Creek, Indigo Creek, Lawson Creek and Horse Sign Creek all serve as pristine to near-pristine spawning and rearing habitat for the Illinois River's wild steelhead runs, which are counted as part of the Rogue's winter steelhead run and are caught in Curry County.

In our proposed Outstanding Resource Waters (ORW) nomination, we quoted from the U. S. Forest Service's Report to Congress for the Illinois Wild and Scenic River, which found that not only was the proposed Wild and Scenic Illinois River's water quality an outstandingly remarkable value but its fishery was as well.

> *The fish value of the Illinois is significant in variety and numbers of fish. More than 20 species of fish maintain reproducing populations in the drainage. The Illinois River, being a relatively small stream, contains a surprisingly large run of anadromous fish. Approximately 25,000 salmon and steelhead are caught by sport fishermen each year. Steelhead on this river are noted for their large size. The Illinois contributes another 85,000 salmon annually to the offshore commercial fisheries of Oregon and California.*[1]

Like other West Coast stream systems, including the greater Rogue Basin, anadromous fish populations of the Illinois River have declined. However, the Forest Service numbers in 1977 are an indicator of the relative productivity and economic importance of the Illinois Rivers' wild anadromous fishery.

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[1] U.S. Forest Service, 1977, A Proposal: Illinois Wild and Scenic River, Study Report, Siskiyou National Forest. Page 24 - https://www.fws.gov/rivers/sites/rivers/files/2023-01/illinois-study.pdf

In addition to the value of the Illinois River's significant contribution to the Rogue River's world class fishery and the offshore fishery of Oregon and California is its importance as a stronghold of wild anadromous fish populations. Here we cite again the U.S. Forest Service from our proposal for Outstanding Resource Waters designation as follows:

> *The Illinois River Basin is believed to be one of the most important and special anadromous fisheries in the Rogue Basin. The majority of wild coho salmon and winter steelhead stocks in the entire Rogue Basin spawn in the Illinois Basin. Thus, most fisheries biologist assume the Illinois River basin to be the stronghold for wild anadromous fish populations in the Rogue Basin.*[2]

To put a finer point on the importance of the wild anadromous fish populations of the Illinois River Basin, both the U.S. Forest Service and Bureau of Land Management respectively found that:

> *Illinois River anadromous fisheries are the stronghold for wild anadromous fish repopulation in the Rogue Basin.*[3]
>
> *The anadromous fishery of the Illinois River Sub-basin is viewed as a stronghold for wild anadromous fish repopulation in the Rogue River Basin.*[4]

We understand the difficulty of assigning a dollars and cents economic benefit to the significant contributions of the proposed Wild and Scenic Illinois River Outstanding Resource Waters and Rough and Ready Creek. However, others have provided numbers from studies that we hope help. It's also important to point out that these are not speculative values but ones that exist and are ongoing. Furthermore, it's important to emphasize that the U.S. Forest Service under the National Wild and Scenic Rivers Act is required to protect and enhance these values.[5]

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[2] Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands, pages 18 & 19 citing the US Forest Service, 1997, West Fork Illinois River Watershed Analysis, Illinois Valley Ranger District, Siskiyou National Forest, p. 14 and p. 2 of the Fisheries appendix.

[3] U.S. Forest Service, 1997, West Fork Illinois River Watershed Analysis Results Iteration 1, Siskiyou National Forest, June 1997, page 18.

[4] USDI, Bureau of Land Management, 2003, West Fork Illinois River Watershed Assessment, Medford District, May 2003, page 18.

[5] 16 U.S.Cl §1281 (a).

Placing a value on clean drinking water

Beyond fisheries, I'd like to emphasize the value of the Wild and Scenic Illinois and Rough and Ready Creek to drinking water. For Josephine County, the primary source of drinking water for the private inholdings along the Wild and Scenic Illinois River is surface water from its direct tributaries.

Rough and Ready Creek also provides the domestic water supply for at least one inholding. In our nomination letter proposing Rough and Ready Creek as an ORW (nomination letter) we write:

> *One social value that's impossible to quantify is the role that Rough and Ready Creek plays in recharging the local aquifer. Most residents of this corner of the Illinois Valley are dependent on wells for their domestic water supply. While the aquifer underlying Rough and Ready Creek's alluvial fan is not well understood, its highly likely most local wells are tapping into the aquifer. Therefore protecting and not allowing the degradation of Rough and Ready Creek's excellent water quality will benefit local residents who value clean drinking water.*

Contributions to recreation, quality of life and the overall health of residents

The Wild and Scenic Illinois and Rough and Ready Creek provide substantial recreational benefits for local communities and visitors. In particular, we'd like to



address in more detail Rough and Ready Creek's contribution not only to recreation but also to enhancing the quality of life of residents in the Illinois River Valley and the health and well being of residents in Josephine County generally.

Rough and Ready Creek is a highly valued as a community open space. We discuss this on page 24 of our nomination letter. Footnote 80 cites page 3 of the Bureau of Land Management's management plan for the Rough and Ready Creek Area of Critical Environmental Concern (ACEC):

> *The ACEC provides a unique open space and scenic natural area with unusual character in the Illinois Basin. The undeveloped landscape stands out here on the valley floor where much of the lowlands have been converted to residential, agricultural, industrial or commercial development.*

Since establishment of the ACEC, there has been significant investment in improving visitor experience with a corresponding increase in use by both visitors and residents. The Illinois Valley Community Development Organization (IVCDO) has spearheaded these efforts in partnership with the Bureau of Land Management, the U. S. Forest Service, the State of Oregon and NGOs. Here's what IVCDO's websites description of the project:

> *IVCanDO, in collaboration with esteemed partners such as the Rogue River-Siskiyou National Forest, the Medford District Bureau of Land Management, the State of Oregon, Travel Grants Pass, and Resource Assistance for Rural Environments (RARE), has taken the lead in enhancing the recreational offerings at the Rough and Ready Botanical Wayside. Together, they have embarked on a transformative journey to elevate the visitor experience.*
>
> *In 2021, significant improvements were made to the walking path, aimed at enhancing accessibility and comfort for all visitors. The path underwent resurfacing, effectively revitalizing its condition. Furthermore, the length of the path was doubled, providing even more opportunities to explore and immerse oneself in the natural splendor of the wayside. To ensure inclusivity, the width of the path was also increased to accommodate wheelchairs, strollers, and side-by-side walking, allowing everyone to partake in the joy of the journey.*
>
> *To enhance the charm and resting spots along the path, hand-carved benches, masterfully crafted by a local chainsaw artist, were thoughtfully placed. These benches not only provide a place to rest and soak in the awe-inspiring views but also serve as a means to promote accessibility, ensuring that more individuals can enjoy the wonders of the trail.*

The commitment to continuous improvement is unwavering. Future plans include the installation of updated interpretive signage throughout the wayside. These informative signs will offer valuable insights into the unique ecology of the area, enriching visitors' understanding of the remarkable natural wonders that surround them. Additionally, there are plans to pave the parking lot, further enhancing accessibility and ensuring that more individuals can conveniently access this haven of natural beauty.

IVCanDO and its esteemed partners are dedicated to creating an environment where all individuals can connect with nature and revel in its magnificence. The ongoing efforts to enhance the Rough and Ready Botanical Wayside serve as a testament to their unwavering commitment to fostering a welcoming and enriching recreational experience for visitors from near and far.[6]

To underscore the way that local people's lives are enhanced and improved by Rough and Ready Creek's unique hydrology and water quality, we'd like to share a collection of photographs and posts from various local Facebook pages:

The below is a photograph from the Friends of Rough and Ready Botanical Area Facebook page[7] demonstrating the quality of water that Rough and Ready Creek produces, even after big storms, as it flows from the Kalmiopsis Wilderness and the South Kalmiopsis Roadless Area.



[6] Illinois Valley Community Development Organization, Rough and Ready Creek Botanical Wayside, https://ivcdo.org/roughandready/

[7] https://www.facebook.com/groups/347239893318726/

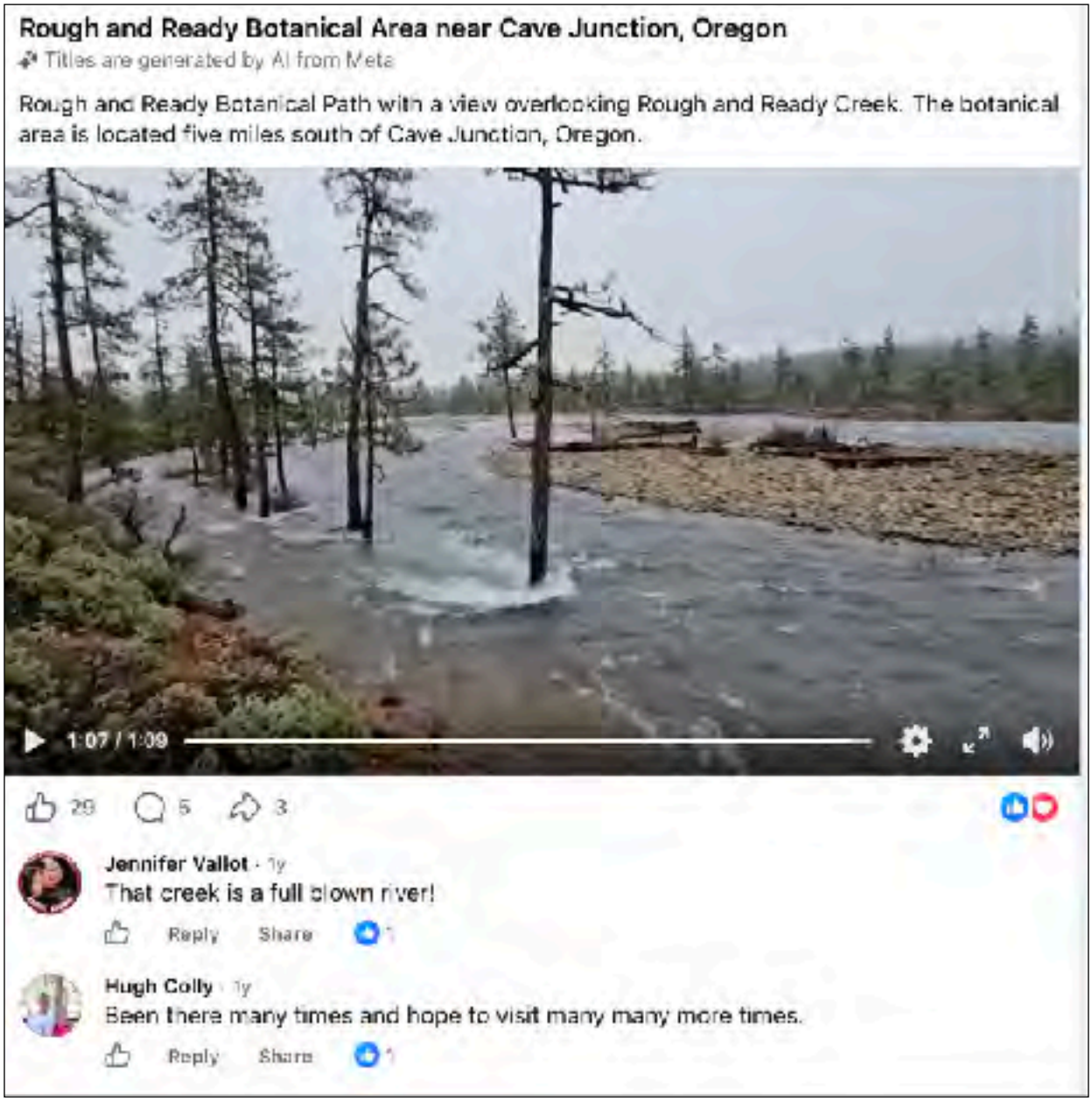
Below - Cars line a turnout along the Redwood Hwy to view the phenomena of Rough and Ready Creek after a rain storm in its headwater as it spreads out across its broad alluvial plain relatively clear in contrast to other streams in the Illinois Valley.



Below - Young and old, friends of Rough and Ready Creek come out even on rainy days to enjoy the spectacle of this unique fluvial system.



The following screen shots are from the Visit Grants Pass Facebook page.[8]



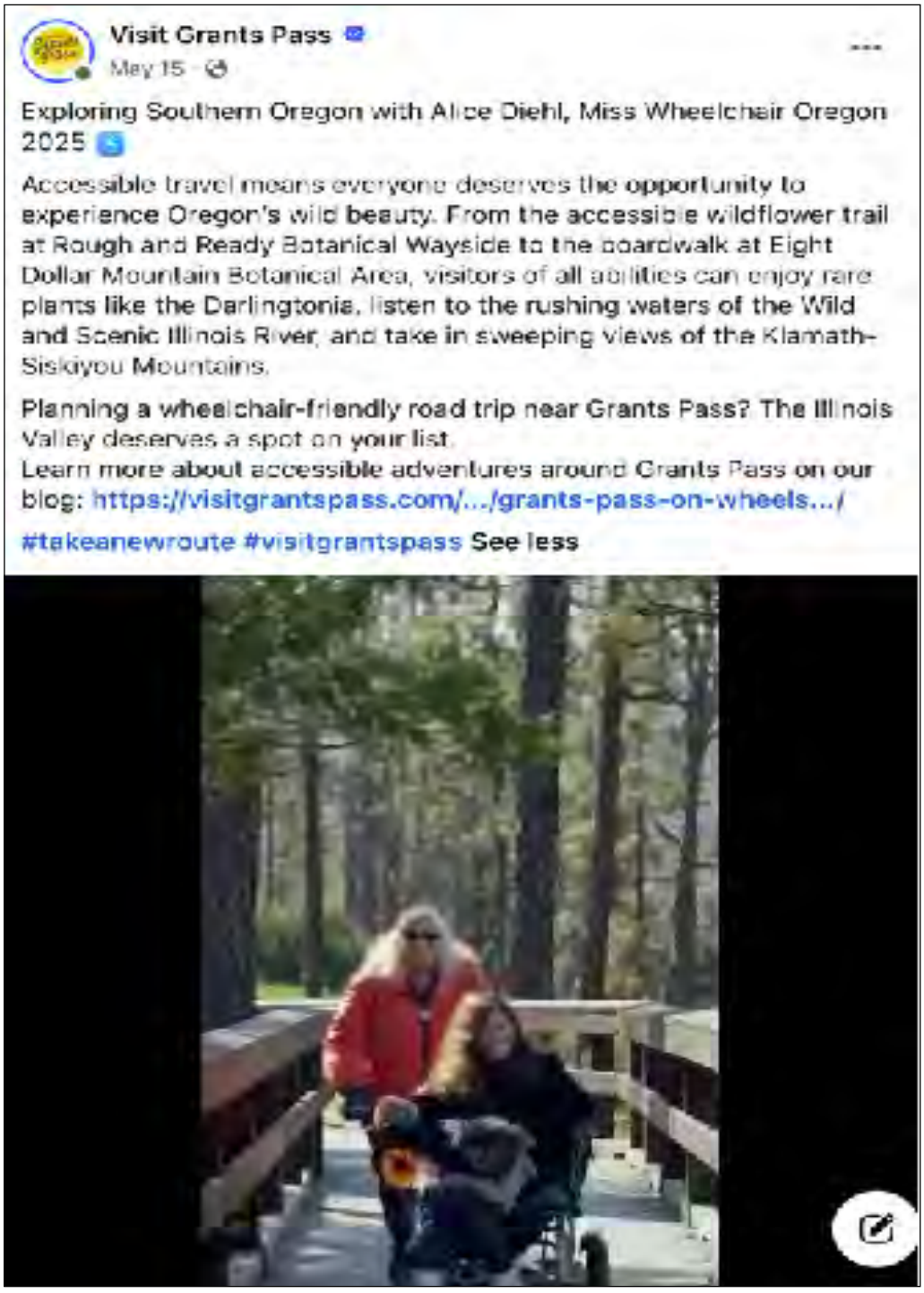
[8] https://www.facebook.com/VisitGrantsPass/

Visit Grants Pass
February 2 ·

Punxsutawney Phil might say 6 more weeks of winter, but we'll be enjoying 60+ degree days all week so get outside and explore the Rough and Ready Trail in the Illinois Valley.

Find unique plant life along this ADA accessible botanical path outside of Cave Junction. This "rainforest desert" is home to thousands of plants that thrive in its serpentine soil. During the winter, manzanita provides a sea of green while colorful wildflowers blanket the landscape throughout spring. The newly improved trail now includes interpretive signs, beautifully carved benches, widened paths, and an extended trail system. #takeanewroute #visitgrantspass **See less**





Thank you again for the opportunity to provide this additional information about the beneficial fiscal impacts of protecting the exceptional water quality, ecological values and critical habitat of the proposed Rough and Ready Creek and the National Wild and Scenic Illinois River Outstanding Resource Waters.

Barbara Ullian
Friends of the Kalmiopsis

Board of Commissioners
Ron A. Smith, Chair
Colene M. Martin, Vice-Chair
Gary L. Richardson, Commissioner
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Grants Pass, OR 97526
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September 2, 2026

Aron Borok
Water Quality Standards
Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Re: Request for Josephine County appointment to the Rulemaking Advisory Committee, and request for correction of the draft fiscal impact statement, Outstanding Resource Waters 2027 (Illinois River and Rough and Ready Creek)

Dear Mr. Borok:

Josephine County requests appointment of a County representative to the Rulemaking Advisory Committee for the Outstanding Resource Waters 2027 rulemaking, and requests that the Department correct its draft statement of fiscal and economic impact before proposing a rule.

The reason is specific. The County and the City of Cave Junction are, as of this month, jointly pursuing state funding to plan the extension of municipal water and sewer service along the Redwood Highway corridor to the county-owned Illinois Valley Airport, the former Rough and Ready mill site, and Kerby. Two applications are in progress:

- Josephine County's application to Business Oregon's Industrial Site Loan Fund, **due September 4, 2026**, for up to $250,000 in planning funds.
- The City of Cave Junction's application to Business Oregon's Regional Infrastructure Fund, **due September 16, 2026**, for up to $250,000, with the County as committed partner. The County is ineligible to apply for that program directly; the City is the applicant because it owns and operates the systems the project would extend.

The draft fiscal impact statement does not mention this project. It could not have, since it relies on the City's 2014 Wastewater Facilities Plan and the 2022 NPDES permit renewal fact sheet. But the project is real, it is on a deadline three weeks from now, and the proposed rule bears directly on its central engineering question. The County is not asking the Department to abandon the designation, and this letter assumes the designation will move forward. The County writes on one subject: publicly owned water and sewer infrastructure and the state-funded planning work required to build it. It takes no position in this letter on any private project in either watershed. It is asking the Department to look at the actual facts about that public infrastructure before writing a rule that governs it.

1. The rule reaches this project through proposed OAR 340-041-0275(4)(c)(B)

Proposed subsection (4)(c)(B) provides that no new NPDES discharge, and no increase of an existing NPDES discharge, to waters upstream or tributary to the designated waters may be allowed if the discharge would degrade the water quality of those waters. The Department's own analysis places the City's outfall

approximately five miles upstream of the proposed Illinois River designation. The City's discharge is therefore squarely within (4)(c)(B).

The draft fiscal impact statement treats this as remote. It says that at some point in the future there may be a need to increase the plant's design flow to accommodate population growth, that it is possible a future expansion would not affect the ORW, and that if it did, alternative treatment options might be required at additional cost to City ratepayers. It then concludes that the Department does not expect a fiscal impact to the public.

That framing does not match the record the County can put in front of you:

The driver is not population growth. It is a deliberate economic development project extending sewer service north to Kerby and the Kerby mill site and south to the airport and the former Rough and Ready mill site. It is scoped, it has an engineer's estimate, and it is in front of Business Oregon this month.

The binding constraint is not treatment capacity. It is effluent disposal. The City currently discharges to the Illinois River from November 1 to May 31 and routes effluent to a nearby golf course from June 1 to October 31. The City's Public Works Director advised the County on August 19, 2026 that the golf course is approaching its summer loading limit. The Kerby sewer extension adds flow toward that same constraint. Effluent disposal alternatives are accordingly the headline task of the planning scope now before Business Oregon, not an afterthought.

The most likely engineering answer runs straight into the proposed rule. If summer reuse capacity is exhausted, the obvious alternative is surface discharge during the June through October window. That is the low-flow season, when the Illinois River is water quality limited for temperature and dissolved oxygen, when dilution is least, and when OAR 340-041-0275(3)(a) already imposes the stricter May through October design criteria. A new or extended summer discharge is the alternative most likely to be barred by (4)(c)(B), and it is the alternative the City would otherwise reach for first.

Land application may not be an escape route either. The draft fiscal impact statement notes that a Water Pollution Control Facility permit remains available where there is no discharge to surface water. But the ground south of Cave Junction toward the airport and the mill site lies on or near the Rough and Ready Creek alluvial fan, which the nomination itself describes as a system of braided channels, springs, and extensive exchange between surface water and groundwater. Proposed subsection (4)(c)(C) prohibits any other new discharge to the designated waters that would degrade their water quality or ecological or recreation values. Whether a rapid infiltration or land application facility in that setting would be treated as an "other new discharge" is not answered anywhere in the draft rule or the draft fiscal impact statement, and the City cannot design around a question the Department has not answered.

The Department's capacity figures should be reconciled with the City's. The draft statement reports the plant at 44 percent of wet weather and 40 percent of dry weather design flow as of the 2022 permit renewal, and describes it as operating below capacity. The City reported to the County on August 19, 2026 that the plant treated 136.7 million gallons in 2025 against an annual design equivalent of roughly 189.8 million gallons, which is approximately 72 percent of that annual figure. These are different measures and the County does not suggest the Department's figures are wrong. It does suggest that a fiscal analysis of a municipal utility should rest on the utility's current numbers rather than on a four-year-old permit file and a facilities plan from 2014.

2. The rule's boundary cannot be located well enough to design a pipeline

Proposed subsection (4)(b)(B) would designate all tributaries, springs, associated wetlands and other waters of the Rough and Ready Creek watershed, excluding only a reach of Parker Creek. The Rough and

Ready Creek nomination states that the Redwood Highway crosses Rough and Ready Creek in its lowest reach. The southern leg of the County and City project follows that same corridor to the airport and the former mill site.

The nomination also states that most springs and the wetlands they form in that watershed have not been mapped, and that they can only be tentatively identified from aerial imagery. The nomination's own map does not show them.

A design engineer cannot route a water and sewer alignment around features that have not been mapped. A contractor cannot bid the risk. A public agency cannot certify a cost estimate. The County is not asking the Department to narrow the designation, to enumerate every tributary and spring, or to defer adoption until mapping is complete. It is asking a narrower, practical question: when a public agency designs, bids, and permits a utility project in this corridor, how does it establish where the designated waters begin and end, and who makes that determination, at what stage? This is not an abstract drafting preference. It is a condition of being able to spend the grant funds the County and City are applying for.

3. Timing

The sequence as it now stands puts public money at risk for no good reason.

Date	Event
September 4, 2026	County Industrial Site Loan Fund application due
September 16, 2026	City Regional Infrastructure Fund application due
Mid to late October 2026	Industrial Site Loan Fund decisions
Est. December 2026 to February 2027	Anticipated notice of proposed ORW rulemaking
Spring 2027	Reported target for Environmental Quality Commission action

The planning study will be produced, and the Regional Infrastructure Fund money must be spent, on essentially the same schedule as the rulemaking. The consultant will be evaluating effluent disposal alternatives while the Department is deciding which of those alternatives will remain lawful. Neither the County nor the City can plan against a moving baseline, and the state has no interest in funding an engineering study whose central recommendation a sister agency's rule may foreclose six months later.

4. Federal legislation affecting the same corridor

The County notes for the record that on July 22, 2026, Congressman Cliff Bentz, whose district includes Josephine County, introduced H.R. 9827, the Wildfire Reduction Market Expansion Act of 2026, which was referred to the House Committee on Energy and Commerce. The bill would modernize the definition of renewable biomass under the Renewable Fuel Standard to include forest management and mill residuals. It is bipartisan and bicameral, with Senators Merkley and Hyde-Smith leading the Senate companion and Congressman Thompson joining in the House.

The County takes no position on the bill's prospects. Its relevance here is that a market Congress is actively working to create would require served industrial land near the forest, and the two candidate sites in this valley are the former Rough and Ready mill site and the Kerby mill site. Those are the sites this planning project exists to make development-ready. The draft fiscal impact statement's conclusion that the rule

will not affect the timber industry rests on current Forest Service land allocations and forest practice rules. It does not consider the industrial siting question, and it does not reflect that both the state and the federal government are currently spending effort on the same ground for different purposes. Some coordination is warranted.

5. Requests

A. Appoint a Josephine County representative to the advisory committee. The County designates Gary L. Richardson, Josephine County Commissioner as primary and Rob Brandes, Director of Public Works as alternate. Under ORS 183.333 the Department must ask the committee for its recommendations on whether the rules would have a fiscal impact and the extent of it. The draft statement indicates that request has not yet been made. The County should be seated before it is.

B. Provide written determinations on the following, before notice of proposed rulemaking issues. These are the questions the County and City must answer to spend planning funds responsibly:

1. Would proposed OAR 340-041-0275(4)(c)(B) bar an increase in the City of Cave Junction's permitted design flow, and what showing would the City have to make to obtain one?

2. Would extending surface discharge into the June 1 to October 31 window, currently served by golf course reuse, be treated as a new discharge or as an increase of an existing discharge under (4)(c)(B)?

3. Would a land application, rapid infiltration, or other non-discharge facility sited on or near the Rough and Ready Creek alluvial fan constitute an "other new discharge" under (4)(c)(C)?

4. Would a water and sewer pipeline crossing of Rough and Ready Creek and its associated wetlands along the Redwood Highway qualify for the construction stormwater exception in (4)(c)(A) and (B), and who makes that determination and when?

5. Do the exceptions at OAR 340-041-0004(9) remain available for waters designated under (4), given that federal Tier 3 policy under 40 CFR 131.12(a)(3) does not authorize de minimis lowering of water quality in an Outstanding Resource Water? If they do not, the County asks the Department to say so plainly, because the draft rule's text does not.

6. For design and permitting purposes, how will the extent of the waters designated by (4)(b)(B) be determined, given that the nomination states most springs and wetlands in that watershed are unmapped?

C. Correct the statement of fiscal and economic impact to (i) identify Josephine County as an affected unit of local government, (ii) describe the Illinois Valley water and sewer planning project and the two pending applications, (iii) rest the Cave Junction analysis on the City's current operating figures rather than the 2014 facilities plan and 2022 permit file, (iv) address effluent disposal capacity rather than treatment capacity alone, and (v) revisit the finding of no fiscal impact to the public in light of the foregoing. The County requests that the two Business Oregon applications and the resulting facility planning work be added to the documents relied on.

D. Write the accommodation into the rule or sequence the rulemaking to the planning work. The County's preferred course is the first:

- Proceed on the current schedule, but include in the rule an express provision addressing municipal water and wastewater infrastructure serving the Illinois Valley, comparable in function

to the exceptions for emergency response and restoration activity at (4)(c)(C)(i) and (ii), and applicable to prohibitions (4)(c)(A) through (C); or

• If the Department concludes it cannot draft such a provision on the current record, hold the proposal until the Illinois Valley water and sewer planning study is complete, expected by mid-2027, so the rule can be written with knowledge of the disposal alternatives.

E. Provide the current committee roster, all materials distributed to the committee, and written confirmation of the next committee meeting date, the anticipated notice date, the length of the comment period, and the date and location of the Cave Junction hearing the Department has committed to hold.

6. Closing

The Department's draft fiscal impact statement observes that Cave Junction has experienced economic hardship following the closure of nearly all of the area's lumber mills, and that the area's supplemental demographic index is worse than 80 to 90 percent of the country. The County agrees with that assessment. It is precisely why the County and the City are spending staff time and pursuing two grant applications in parallel to get water and sewer to the valley's remaining industrial ground.

The County has no quarrel with protecting these waters. The Rough and Ready Creek nomination itself notes that an important source of Cave Junction's domestic water is a well on the Illinois River floodplain, and the recreation economy the Department's analysis credits with $155 million a year in this county is this county's economy. The question this letter raises is narrower: whether the rule can protect the waters without foreclosing the basic municipal infrastructure the same community needs.

A rule written without knowledge of that effort is likely to impose costs on the same community the Department's own analysis identifies as most vulnerable, and to impose them through a document that concludes there is no fiscal impact to the public. Seating the County and answering the six questions above would fix that at no cost to the designation's purpose.

Please direct correspondence to Gary L. Richardson: Email GRichardson@josephinecounty.gov or Cellphone No. 541-479-3775. The County is available to meet on short notice, including before the September application deadlines.

Sincerely,

Josephine County Board of Commissioners

Ron A. Smith, Chair

Colene M. Martin, Vice-Chair

Gary L. Richardson, Commissioner

cc:

Leah Feldon, Director, Oregon Department of Environmental Quality
Matt Donegan, Chair, and Members, Oregon Environmental Quality Commission
Jesse Dugas, Mayor, and City Council, City of Cave Junction
Alex Ponder, Public Works Director, City of Cave Junction
Rob Brandes, Director of Public Works, Josephine County
Kerby Water District
Jessica LaBerge, Southern/ South Coast Regional Solutions Coordinator Office of Governor Tina Kotek
Marta Tarantsey Business Oregon Reg Dev Officer Klamath-Lake-Jackson-Josephine
Curry County Board of Commissioners
Senator Noah Robinson, Oregon Legislative Assembly
Representative Dwayne Yunker, Oregon Legislative Assembly
Representative Alex Skarlatos, Oregon Legislative Assembly
Office of Congressman Cliff Bentz
Office of Senator Jeff Merkley
Josephine County Legal Counsel

KALMIOPSIS AUDUBON SOCIETY
P.O. Box 1265 • Port Orford OR • 97465

August 26, 2026

To: Aron Borok
Re: Illinois River and Rough and Ready Creek Outstanding Resource Waters, Draft Fiscal Impact Statement

Dear Mr. Borok:
I am writing on behalf to the Kalmiopsis Audubon Society. Our group has more than 400 members in Curry County who care about conserving habitat for birds, fish, and wildlife and stewardship of public lands in our region, including our outstanding collection of National Wild and Scenic Rivers. For that reason, we appreciate the opportunity to serve on the Outstanding Resource Waters (ORW) Rulemaking Advisory Committee and the opportunity to comment on the Oregon Department of Environmental Quality's (DEQ) draft Fiscal Impact Statement for the proposed Wild and Scenic Illinois River and Rough and Ready Creek Outstanding Resource Water (ORW) designation.

Based on DEQ's presentation at the recent ORW Rulemaking Advisory Committee meeting, we recognize that the Fiscal Impact Statement (FIS) is intended to have a very specific format. Based on ORS 183.335(2)(b)(E), it appears that economic "effect" includes both positive effects and potential impacts.

We appreciate that DEQ has identified and included some of the economic value that will come with ensuring that high-quality waters are protected into the future. We recommend that the FIS should also account for additional clean water economic values accruing across a broader area.

Economic values of exceptional water quality in Josephine County
The current draft of the FIS focuses primarily on that value in terms of recreation in Josephine County. This is important, as the Wild and Scenic corridor of the Illinois River from Eight Dollar Mountain downstream to Brigg's Creek is a cherished local recreational resource, where literally thousands of people come to swim, camp and find refreshment from summer's heat. Photos of the traffic jams are a testament to the high value that many people place upon experiencing the river –in other words, it's worth their time getting stuck in traffic! (see Attachment A).

Additionally, the U.S. Forest has made significant public investments in this beloved recreational corridor –with an estimated $1.3 million invested in campgrounds and access areas from 2005- 2014.[1] We are aware that additional monies have been invested into roadwork in this section over the past decade, too, but could not secure specific accounting.

Just downstream, the wildest part of the Illinois River also draws recreational users to exceptional and more remote whitewater and hiking experiences. Multi-day commercial and private whitewater river trips provide excitement for rafts and kayaks on this river reach that is reputed to be the most remote, inaccessible river segment in the lower 48 states, offering a wholly unique and highly-sought-after experience.

This reach of wild river also features the National Illinois River trail. Though the trail is not specifically water dependent –trail users are no doubt drawn to the scenic vistas that feature the clear or blue-tinted waters of the Illinois River and opportunities for remote swimming and camping.

Both the whitewater and trail users also contribute economic value to the local economy not only paying for guides and equipment but also by spending money in local lodging, camping, gas, and food business establishments.

The bottom line is that with all the public investment and use, the Wild and Scenic Illinois corridor in Josephine County must be regarded as a significant natural and economic asset for the public, with knock-on effects that ripple through the local economy as people stop at restaurants, shops, and gas stations coming and going.

Rough and Ready Creek contributes its own smaller scale version of outdoor recreation--including swimming, hiking, and boating, as well as botany natural history study--to the mix of activities that make up the local tourism economy and way of life of Illinois River Valley residents. Rough and Ready Creek also contributes its clear flows to the Illinois River and helps to recharge the aquifer of the Illinois Valley, which supplies drinking water via wells in the valley to residents and to the City of Cave Junction. Through its flows and fishery values, Rough and Ready Creek contributes to the values of the downstream wild and scenic recreational corridor of the Illinois, too.

Economic values for exceptional water quality <u>downstream</u> in Curry County

While economic values of the clean water provided by Rough and Ready Creek and the Wild and Scenic Illinois River in Josephine County are clearly significant, we recommend that DEQ also include recognition of the substantial economic values for the downstream benefits that will come with the proposed ORW designation. By contributing significant flows of clean water and excellent spawning habitat, the Illinois River and its tributaries and associated wetlands

[1] Correspondence, District Ranger Pam Bondi to *Grants Pass Courier*, Nov. 20, 2006; Regional Forester James Pena to Rich Nawa, Sept. 11, 2014, available upon request.

also contribute economic values to lower Rogue River communities in Curry County for outdoor recreation-related tourism, for fisheries, and for drinking water and other ecosystem services.

Regarding the economic value of outdoor based recreation, the most recent economic study on this topic in Oregon ("Economic Analysis of Outdoor Recreation in Oregon: 2022 Update") found that Curry County had outdoor recreation trip-related spending of $5.34 million overall.[2] While this includes all recreation and it is not possible to discern a sub-value directly attributable to the Illinois River, the beautiful clear water of the Illinois contributes to key local tourism businesses focused on the lower Rogue River, including dozens of fishing guide services, a sea kayaking outfitter, several lodges and campgrounds, as well as the renowned jet boats.

Also, this 2022 study identified that outdoor recreation in general contributes $12 billion to Oregon's gross domestic product, with many Oregon-based companies providing equipment and gear to recreational users who enjoy public lands in general. The study identified specific public lands, including the Siskiyou National Forest and the Forks of the Illinois State Park, as some of many sites that benefit outdoor recreation overall, thereby creating economic value in a broader sense. The Wild and Scenic Illinois and Rough and Ready Creek contribute to that larger value.

Regarding fisheries, "The Economic Value of Rogue River Salmon," (2009) provides the most up to date available information about the economic value of commercial fishing, of the recreational sport fishery, and a of "non-use values" of Rogue basin salmon.[3] "Non-use values" refers to the inherent value of salmon and more specifically the costs that Oregonians have consistently stated they'd be willing to pay more to improve salmon habitat in our state because to ensure that salmon can persist into the future. The report found that the economic value of the Rogue River for commercial salmon fishery was not less than $1.36 million annually —adjusted for inflation, that's $2,109,224 today; for sport fishing, they found it to be not less than $16 million, adjusted for inflation, that's $24,814,400 today; and for non-use value, they estimated the implicit value of all Rogue River salmon and steelhead runs to be approximately $1.5 billion —adjusted for inflation, that's $2.33 billion today. (According to the report, households in the Pacific Northwest indicated willingness to pay over eight hundred dollars per fish ($ 1,240.72 today) for salmon preservation and Oregonians consistently stated a willingness to pay at least $70 million annually ($108,563,000 in today's dollars) to enhance salmon habitat in the state.) I am attaching that report so you can review the rigorous methodology of this economic study.

Of course, this is for the whole Rogue basin. But it must be emphasized that the Illinois River contributes about 25 percent of flow to the lower Rogue, and tributaries to the Illinois are widely considered to be important habitat for both steelhead and coho. Although there is not a

[2] Earth Economics, "Economic Analysis of Outdoor Recreation in Oregon: 2022 Update"(2023).

[3] EcoNorthwest, "The Economic Value of Rogue River Salmon," (2009), 22,25. Adjustments for inflation were calculated using Bureau of Labor Statistics cumulative CPI inflation rates.

good way to figure out exactly how much of the benefit of lower Rogue River fisheries derives from the Illinois River, in asking fish biologists about the contribution of the Illinois to Rogue fisheries, I've heard estimates ranging from 10 to 25 percent. If the focus were put solely onto steelhead, it's likely that the majority caught in the lower Rogue come from the excellent steelhead-producing tributaries of the lower Illinois River, including Silver, Indigo and Lawson Creeks. Studies conducted by the U.S. Forest Service to evaluate key watersheds also underscore the importance of the Illinois tributaries to both the flow of the river and to the productivity of its fisheries to the larger Rogue basin fisheries, especially that of the lower river.[4] (See Appendix C)

Another economic study commissioned by the Oregon Department of Fish and Wildlife (ODFW) "Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon, 2008 State and County Expenditures Estimates," evaluated expenditures related to fishing throughout Oregon relying on different metrics to develop county-by-county specific estimations for 2008.[5] The economists, Runyan and Associates, determined that travel-related expenditures related to fishing in Curry County were $9.3 million. That's roughly $14.5 million adjusted for inflation. (Travel-generated expenditures include total travel spending made by Oregon residents and nonresidents in the county of destination, plus other specific trip-related purchases such as gasoline, food and beverages, and other retail purchases made before or while traveling to the destination.) The study also documented the not insubstantial share of economic value contributed by local recreational expenditures as $935,000, which adjusted for inflation would be $1.45 million. These numbers include all fishing in Curry County, which includes all rivers and both fresh and salt water (Rogue salmon become part of the ocean fishery, too). The study also parsed out travel generated expenditures related to just freshwater fishing, which they calculated to be $4.45 million, which adjusted for inflation would be $6.9 million in today's dollars. Local expenditures for freshwater fishing were determined to be $673,000 or over $1 million in today's dollars. While these estimates include fishing on all local Curry County rivers, another study found that number of guided fishing trips that occur on the Rogue River is estimated to be more than twice that of trips on other local Curry County rivers –and so, though all contribute, the lower Rogue fishery, creates a lion's share of economic benefits.[6]

Another Sea Grant study estimated the economic value of guided fishing trips on the Rogue River using the 1996-97 fishing seasons as their focus.[7] The study surveyed 42 percent of fishing guides. Extrapolating to the full number of guides, there were an average of 13,350 guided fishing day trips per year, at a cost of $257 each, which translated into $3.4 million per year of direct economic value. Adjusting for inflation, that would be approximately $7 million per year. The paper recommends using an economic multiplier of 3.0 to estimate total economic activity.

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[4] U.S. Forest Service, Siskiyou National Forest, Silver Creek Watershed Analysis (1995).

[5] Dean Runyan and Associates, "Fishing Hunting Wildlife Viewing and Shellfishing in Oregon, 2008 State and County Expenditures Estimates," (2009), 18-19, 23.

[6] Jim Waldvogel, Sea Grant, "Southern Oregon/Northern California Salmon and Steelhead Fishing Guides Use and Economic Analysis, 1996 – 1997," (2008).

[7] Ibid.

Using that multiplier and adjusting for inflation, one-day guided fishing trips on the Rogue River represent an estimated $21 million in total annual economic activity in 2026-equivalent dollars.

The water quality of the Illinois also contributes to valuable habitat for birds, fish, and wildlife in the Rogue River estuary, which hosts one of the highest concentrations of osprey in Oregon. The value of wildlife watching is also considerable in Curry County –and, on the lower Rogue River is focused through outfitters focused on sea kayaking and jet boats but also through visitors and residents who use the lower Rogue River trail and the boat basin. According to the Runyan report, travel generated expenses for wildlife watching in Curry County were $10 million in 2008, which adjusted for inflation is $15.5 million.[8]

More generally, the Southwest coast of Oregon —the area downstream of the Illinois confluence with the Rogue River— has promoted itself as "Oregon's Wild Rivers Coast," or "America's Wild Rivers Coast," with significant investment over several decades toward promoting the region based on the outstanding values of its high concentration of National Wild and Scenic rivers, which includes the National Wild and Scenic Illinois River, protected for outstanding values that depend on its exceptional water quality. (See: www.oregonswildriverscoast.com) The very identity of our region is literally tied to our wild rivers, which is a hard value to quantify economically, but it is extremely valuable.

It's also important to recognize the "ecosystem services" values of the Illinois River's excellent water quality to downstream areas. These include contributing to clean drinking water for the City of Gold Beach, which taps subsurface infiltration galleries underneath the Rogue River downstream of the Illinois confluence for its water supply. The clarity of the Illinois no doubt contributes to the high quality of this drinking water source, which helps to reduce the city's costs for water treatment, which in city's that do not have such a clean water source need to pay much more. The clean, clear water also contributes to property values for homes along the lower Illinois and Rogue rivers.

Finally, it's important to underscore, especially for the Wild and Scenic Illinois River, that its water quality was expressly determined to be exceptional –and in the parlance of the National Wild and Scenic Rivers Act –"outstandingly remarkable" –so much so as to be designated by the U.S. Congress in a bipartisan manner. The gem-like clarity of this clean water resource must be considered rare, nationally significant, and for that reason, utterly priceless. (See Appendix C).

All in all, the economic value of ensuring the high-quality waters of the Wild and Scenic reach of the Illinois River and upstream tributary Rough and Ready Creek are protected into the future for all these values is considerable and should be recognized in the Fiscal Impact Statement.

We recommend that the accounting of these values may fit best in either the executive summary section or in the section titled "Public."

[8] Dean Runyan and Associates, 23.

If the high quality of these waterways were to be degraded in the future, it would substantially reduce and put at risk the many currently existing economic values that clean water supports in our region.

Potential costs to local government

In its costs of compliance to local government section, the draft FIS suggests some potential for future cost to the community of Cave Junction if population growth would someday necessitate expanding its wastewater treatment plant. During the recent ORW RAC meeting, DEQ staff indicated that DEQ did some prospective modeling to assess the likelihood that a future wastewater treatment plant expansion would lead to impacts on the proposed Wild and Scenic Illinois River ORW (located 5 miles downstream) and found that it would be unlikely that there would be effects. This information should be included in the Fiscal Impact Statement (FIS). Also, it would be helpful to understand how the Rogue River TMDL requirements and ORW intersect in this scenario —as is described on p. 5 for the Small Businesses section.

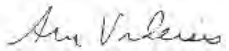
Because the City's Wastewater Treatment Master Plan indicates the city is operating at only 40 percent of its permit capacity, the size of the community would need to double before it would be necessary to consider expansion of the wastewater treatment plan. According to the City's Wastewater Treatment Master Plan (p. 2-11), there may be limitations on growth related to the availability of land within city limits, zoning, and the density of housing that would make a doubling of population unfeasible. If DEQ includes the scenario of population growth causing the need for expanding the waste water treatment plant in the FIS, it should make every effort to verify that such a scenario is actually feasible and would occur in a time frame that is within a reasonable scope of the FIS.

Racial Equity and Environmental justice

In the section about Racial Equity, we recommend that DEQ confer with the RAC Tribal representative on wording to convey that the clean water values of the proposed ORW reaches remain important today to the indigenous people whose ancestors once inhabited the project watersheds. In the section about environmental justice, we recommend a minor edit in the third paragraph for clarity: after the word "occurs," add "on private forest lands" to make the distinction between timber harvest rules on federal and private lands.

Thank you for considering our comments.

Sincerely,



Ann Vileisis
President, Kalmiopsis Audubon Society

APPENDIX A: RECREATIONAL VALUES IN THE WILD AND SCENIC ILLINOIS CORRIDOR

The Wild and Scenic Illinois River in Josephine County (from the boundary near Eight Dollar Mountain downstream) is an outstanding natural economic asset.





It’s not uncommon for 1,500 people to visit this scenic, clear-watered canyon on summer weekends.







Traffic jams are a testament to the high value that many people place upon experiencing the exceptional clear water of the Wild and Scenic Illinois River –in other words, it’s worth getting stuck in traffic!



“Congress added southwest Oregon’s Illinois River to the National Wild and Scenic River System in 1984, recognizing its nationally outstanding fisheries, water quality, scenery, recreation, and botanical values. The importance of the designation can be seen today in the visitors who travel along the river’s scenic section, where thousands seek the relief of its clear waters during hot summer days. The Illinois River shines as one of the West’s premier whitewater rivers and as a wild salmon and steelhead refuge.” —from Rivers.gov

APPENDIX B:
EXCEPTIONAL WATER QUALITY AS PRICELESS

There are certain ways in which Rough and Ready Creek and the Wild and Scenic Illinois River are simply priceless –in that they have rare values that must be considered exceptional or in the parlance of the National Wild and Scenic Rivers Act "outstandingly remarkable."



For example, the color of the utterly clear water is breathtaking!

"The color of the water is exceptional. The blue-green color provides striking contrasts with the surrounding environment.*"—From, U.S. Forest Service, 1977, A Proposal: Illinois Wild and Scenic River, Study Report, Siskiyou National Forest.*

APPENDIX C:
VALUE OF ILLINOIS RIVER AND ITS TRIBUTARIES TO ROGUE FISHERIES

While we could find no specific economic studies related to the fisheries values of the Wild and Scenic Illinois River, the river and its tributaries contribute significantly to the lower Rogue River fishery, which has known, substantial economic values. These excerpts from some U.S. Forest Service watershed analyses document the contributions of the Illinois River and some of its tributaries to the fishery values of the Rogue.

*"The very clear water in **Josephine Creek** and its major tributaries is a key component to the beneficial uses of fisheries and Recreation (visual quality) in the watershed."*

*"The **Josephine Creek** watershed is very important to survival of wild salmonid genetic diversity in the Illinois River drainage. The cool, clean water and favorable habitat conditions in Fiddler Gulch and Canyon Creek are particularly important. Canyon Creek is considered a key stream for the maintenance of wild salmonid fish in the Illinois River by the Oregon Department of Fish and Wildlife and American Fisheries Society*."
--U.S. Forest Service, Siskiyou N.F., "Wild and Scenic River Eligibility Study for Josephine Creek and Tributaries," (1992), 9-12.

*"**Silver Creek** is one of two most important tributaries (Indigo Creek is the other), in terms of wild fish production, in the Illinois River Basin. The large size of the basin provides an extensive amount of high quality habitat. These pristine conditions, large, deep pools, excellent water quality, and cascade habitat with pocket pools provide excellent rearing conditions for salmonids. In addition, inaccessibility to fishermen provide juvenile steelhead excellent conditions to rear to smolt size without fishing pressure. Water temperatures are cooler than most other tributaries in the basin."*
-- U.S. Forest Service, Siskiyou National Forest, Silver Creek Watershed Analysis, 1995.

*"[T]he **Indigo Creek** drainage is locally known to be of exceptional quality for fisheries. The water quality is good to excellent; which is one main reason for the exceptional quality and productivity for fisheries; and the scenic values inherent in Indigo Creek."*

*"**Indigo Creek** is a major tributary to the lower Illinois River. It, along with other major tributaries of the Illinois River, are producers of anadromous salmonids that contribute to the world famous Rogue River fishery.**"***
-- U.S. Forest Service, Siskiyou National Forest, Wild and Scenic River Eligibility Study: Indigo Creek and Its Tributaries, 1994, 9-10.

*"The primary beneficial use [of Lawson Creek] is the andromous fishery….**Lawson Creek** has about 4 miles of habitat that fall chinook salmon can access, and winter steelhead can access about 9 miles of habitat."*
--U.S. Forest Service, Siskiyou National Forest, Lawson Creek Watershed Analysis, 1995.

*"Fish habitat in **Lawson Creek** is diverse and can qualitatively be considered excellent*."
--U.S. Forest Service, Siskiyou National Forest, Lawson Creek and its Tributaries Wild and Scenic River Eligibility Assessment, 199X.

Comments on the Fiscal Impact Analysis for the Proposed ORW Rulemaking for the Illinois River and Rough and Ready Creek

Zach Collier
President, Kalmiopsis Guides Association
Owner and Operator, Northwest Rafting Company

I am submitting these comments on my own behalf and on behalf of the two other commercial outfitters currently permitted by the U.S. Forest Service to run rafting trips on the Wild and Scenic Illinois River, ARTA River Trips and Momentum River Expeditions. Together, our three companies make up the entire commercial rafting industry on the Illinois River.

We strongly support DEQ's proposed rulemaking to designate the Illinois River and Rough and Ready Creek as Outstanding Resource Waters (ORW). I also want to add some perspective to the Draft Fiscal Impact Statement (FIS) from businesses that depend directly on the clean water and wild character of this watershed.

I have guided and outfitted trips on the Illinois River for close to two decades, and it remains my favorite river in the world. The Kalmiopsis Guides Association worked with Friends of the Kalmiopsis to formally nominate Rough and Ready Creek for ORW designation in 2024. We did that because those of us who make our living on these rivers understand that clean water and wild places are not simply a backdrop to our businesses. They are what we sell.

Clean Water Is the Product We Sell

The Illinois is one of the last rivers on the West Coast without a hatchery program, which means the fish our guests see are truly wild. It flows through the Kalmiopsis Wilderness with water that has a clarity and color our guests consistently tell us they have never seen anywhere else.

That exceptional water quality is a big part of why people travel from around the country, and sometimes around the world, to raft the Illinois River.

People do not book a three- or four-day wilderness rafting trip on the Illinois because it looks like every other river. They come because it is exceptional. Protecting the existing water quality helps make sure it stays that way.

The Draft FIS concludes that the ORW designation would have minimal to no fiscal impact on existing businesses because it does not impose significant new requirements. From the perspective of the rafting industry, that is exactly right.

This designation costs us nothing to comply with. We do not need to discharge anything into the river to operate our trips. At the same time, it helps protect the resource our businesses depend on.

The Illinois River Supports Jobs and Spending in Josephine and Curry Counties

Our guests travel from across the country and internationally to raft the Illinois River. Their economic impact begins well before they get on the water.

Guests stay in Grants Pass and other nearby communities, eat at local restaurants, buy last-minute gear and supplies, and purchase fuel. Our companies purchase food, equipment, vehicle services, lodging, fuel, and other supplies locally. We also hire guides, shuttle drivers, and other seasonal employees.

At the end of an Illinois River trip, that economic activity moves downstream into Curry County. Trips finish near the confluence with the Rogue River near Agness, with guests, guides, shuttle drivers, and support vehicles continuing through communities such as Gold Beach.

A single Illinois River trip brings economic activity to both Josephine and Curry Counties.

Commercial trips are only part of this economic impact. Many private groups also run the Illinois River each year. Those boaters stay in hotels, eat at restaurants, buy fuel and supplies, and hire local shuttle services.

What a Guest Actually Pays to Raft the Illinois

Based on 2026 published rates among the permitted Illinois River outfitters, a typical four-day, three-night wilderness rafting trip costs roughly $1,900 to $2,500 per person. That generally includes transportation from Grants Pass, professional guides, camping equipment, and meals.

The Illinois River is not a high-volume commercial rafting destination. Wild and Scenic River regulations limit group sizes and commercial use, so the number of trips we can operate each year is limited.

A typical commercial trip represents roughly $15,000 to $20,000 in direct guest spending with an outfitter. That does not include what those guests spend before and after the trip on hotels, restaurants, fuel, supplies, and other local services.

For our three companies, the economic value of the Illinois River is straightforward. We earn revenue by taking people down one of the cleanest and wildest rivers in the country. If the qualities that make the Illinois River exceptional are degraded, the value of the experience we provide is degraded along with it.

The Illinois River Is Part of a Larger River Recreation Economy

The economic importance of clean rivers in southwest Oregon extends well beyond the Illinois.

The *Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River* report by ECONorthwest estimated that river-based recreation on the Wild Rogue supported approximately $30 million in economic output and 445 full- and part-time jobs. The report also found that 91 percent of outfitters were based in Oregon.

The Illinois flows directly into the Rogue River near Agness. Our businesses, guides, shuttle drivers, hotels, restaurants, and other local businesses are part of this same recreation economy.

The numbers may show up as hotel stays, restaurant meals, guide wages, shuttle fees, or outfitter revenue, but all of that economic activity starts with the river.

Exceptional Water Quality Has Real Business Value

The exceptionally clear water is one of the river's defining characteristics and one of the things guests remember most about their trips. The undeveloped watershed also contributes to the sense of wilderness that makes a multi-day Illinois River trip different from almost any other rafting trip in the country.

Our reputations depend on providing that experience year after year. Much of our business comes from repeat guests, referrals, reviews, and people who have heard about the Illinois River from someone who has been there.

If the water quality or wild character of the river were degraded, our guests would notice.

We agree with the Draft FIS's conclusion that the proposed ORW designation would not impose significant new costs on compliant forestry operations, DEQ, or small businesses like ours. From our perspective, the rule does something much more important. It protects the existing water quality that our businesses and the broader recreation economies of Josephine and Curry Counties depend on.

On behalf of Northwest Rafting Company, ARTA River Trips, and Momentum River Expeditions, I respectfully submit these comments in support of the proposed ORW designation.

For our industry, this rule does not create a new cost. It helps protect what our businesses are already built around: exceptionally clean water and one of the wildest river corridors in the country.

Thank you for the opportunity to comment. I am happy to answer any questions about commercial rafting on the Illinois River or how our businesses depend on the river and its water quality.

Sincerely,

Zach Collier
Owner, Northwest Rafting Company

On behalf of Northwest Rafting Company, ARTA River Trips, and Momentum River Expeditions

(541) 450-9855
nwrafting.com

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Dean Runyan Associates

Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon

2008 State and County Expenditure Estimates

May 2009



Summer Lake Wildlife Area
Photo Credit: Oregon Department of Fish and Wildlife

Prepared for the

Oregon Department of Fish and Wildlife
Travel Oregon

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Fishing, Hunting, Wildlife Viewing, and Shellfishing in Oregon, 2008

May 2009

Prepared for

Oregon Department of Fish and Wildlife
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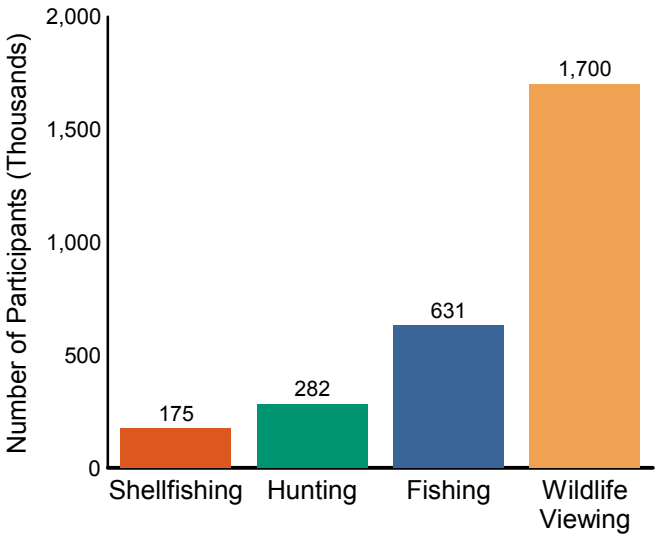
Executive Summary

This study, the result of a comprehensive effort by the Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon, describes hunting, fishing, wildlife viewing, and shellfish harvest participation and related expenditures made throughout Oregon and the state's travel regions and counties.

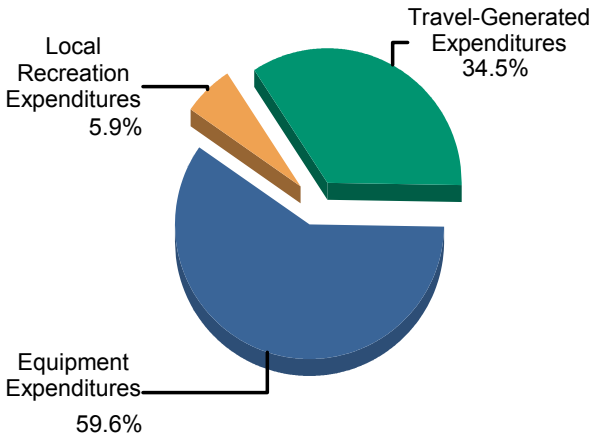
Participation and Expenditures in Oregon

In 2008, nearly 2.8 million Oregon residents and nonresidents participated in fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. Of the total number of participants, 631 thousand fished, 282 thousand hunted, 175 thousand harvested shellfish, and 1.7 million participated in outdoor recreation where wildlife viewing was a planned activity.

Total Participants by Activity, 2008



Fish and Wildlife Recreation Expenditures in Oregon, 2008
(Total: $2.5 billion)



In 2008, state residents and nonresidents made three distinct types of fish and wildlife recreation expenditures:

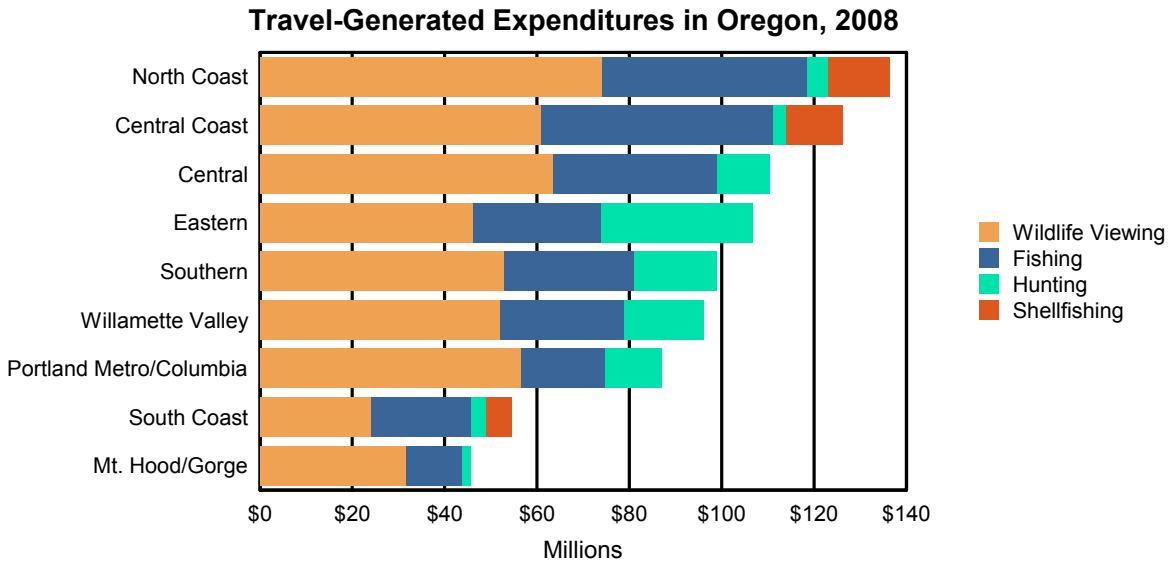
- Travel-Generated
- Local Recreation (less than 50 miles from home)
- Equipment Purchases (includes boats and recreation vehicles)

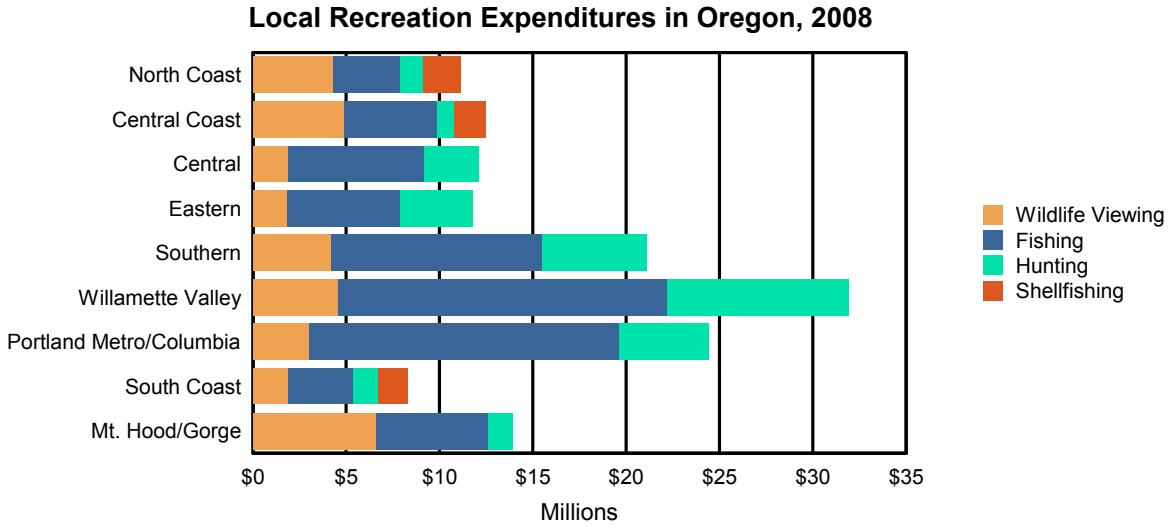
When all three categories are combined, fish and wildlife recreation resulted in expenditures of $2.5 billion in 2008. Oregon residents and nonresidents who traveled overnight and on day trips of 50 or more miles (one-way) from home made travel-generated expenditures of $862 million. Local recreation expenditures of $147 million were made by Oregon residents while participating in these activities less than 50 miles from home. State residents and nonresidents also spent an additional $1.5 billion on specialty equipment and other activity-related purchases from retail establishments and suppliers based in Oregon.

Fish and Wildlife Activities Benefit All Regions of Oregon

During 2008, travel-generated expenditures accounted for over $100 million in four of Oregon's travel regions (North Coast, Central Coast, Central, and Eastern). In all nine travel regions, travel-generated expenditures for wildlife viewing and fishing were particularly notable. While travel-generated expenditures for hunting occurred in each of the nine travel regions of the state, spending made in the Eastern, Southern, and Willamette Valley travel regions accounted for nearly two-thirds of the total.

Local recreation expenditures occurred most notably in travel regions with large urban-centered populations (Willamette Valley, Portland Metro/Columbia, and Southern), with fishing, hunting, and wildlife viewing representing the bulk of all local recreation expenditures made throughout the state.





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Preface

This study, the result of a comprehensive effort by the Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon, documents the economic significance of fishing, hunting, wildlife viewing and shellfish harvest in Oregon and its 36 counties in 2008. The report is intended to assist ODFW watershed and regional managers, state and local officials, as well as local chapters of sports groups or other organizations interested in fish and wildlife.

Dean Runyan Associates and The Pulse Group prepared this study for ODFW and Travel Oregon. Dean Runyan Associates has specialized in research and planning services for the travel, tourism, and recreation industry since 1984. Dean Runyan Associates also has extensive experience in project feasibility analysis, market evaluation, survey research, and travel and recreation planning. The Pulse Group is a market research and strategic planning firm specializing in large-scale study design and implementation.

In preparing this report, we have received essential guidance and assistance from numerous ODFW staff, whom we thankfully acknowledge. Stephen Williams, *Deputy Administrator Fish Division*, Larry Cooper, *Deputy Administrator Wildlife Division*, Dave Fox, *Marine Resource Program Assessment and Management Section Leader*, Tom Thornton, *Game Program Manager*, Dave Budeau, *Upland Game Bird Coordinator*, Christine Broniak, *Economist*, Christopher Carter, Ph.D., *Natural Resource Economist*, as well as many others who provided information and advice for this report.

In addition, we want to express our thanks for the cooperation of over 11,000 individuals who voluntarily provided detailed information about their hunting, fishing, wildlife viewing or shellfish harvest activity in Oregon.

Finally, special thanks are due to Roger Fuhrman, Administrator, Information and Education Division, ODFW, and Todd Davidson, CEO, Travel Oregon for their project support and assistance.

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I. Introduction

In Oregon, fishing, hunting, wildlife viewing, and shellfish harvesting generates economic activity for regions and counties throughout the state. Many locations within Oregon serve as appealing overnight and day destinations for both Oregon residents and out-of-state visitors (nonresidents) who participate in fishing, hunting, wildlife viewing, and shellfish harvesting activities while traveling away from home. In addition, many Oregon residents participate in these same fish and wildlife recreation activities close to home, supporting local businesses by spending dollars within their region and county of residence.

Based on results reported from detailed questionnaires and phone interviews, this study describes detailed expenditures made by Oregon residents and nonresidents for fishing, hunting, wildlife viewing and shellfish harvesting in Oregon during 2008. This study also estimates the retail expenditures for fish and wildlife activity-related equipment purchased in Oregon during 2008.

Detailed statewide information on trip characteristics and demographics for each recreation activity type is also included, providing details such as the purpose and length of the trips, the distance traveled, the type of fish or wildlife pursued or viewed, travel party size, as well as other associated trip-related characteristics (shown in Appendix A).

Objectives

This study represents a comprehensive effort by Oregon Department of Fish and Wildlife (ODFW) and Travel Oregon to document the economic significance of fishing, hunting, wildlife viewing, and shellfish harvest in Oregon. Other previous research, including the U.S. Department of the Interior, Fish and Wildlife Service 2006 National Survey of Fishing, Hunting and Wildlife-Associated Recreation, provide economic information at the statewide level. While this information is helpful, many of the decisions that directly affect fish and wildlife, habitat and recreation are made at the local level – by ODFW watershed or regional managers, by state and local officials, by local chapters of sports groups, or by other organizations interested in fish and wildlife.

The information contained in this help will help further the following objectives:

- Highlight the economic impact of decisions that may affect fishing, hunting or wildlife viewing opportunities. This information will help local decision makers more accurately evaluate the impact of changes in regulations, habitat, invasive species, land use, fish passage and other activities that could affect recreation and fish and wildlife.

- Provide additional information to help secure grants and other funding to improve fishing, hunting and wildlife viewing opportunities such as handicap access, boat launches, fishing piers, viewing blinds, and public access. The information may also be used for

grants for habitat improvement projects and other efforts to improve fish and wildlife habitat.

- Increase understanding of who is involved in fishing, hunting, shellfish harvest, and wildlife viewing. This will help ODFW prioritize efforts to meet public demand for fishing, hunting, shellfish, and wildlife viewing activities.

- Increase understanding of where individuals fish, hunt, harvest shellfish, and view wildlife. This will help ODFW prioritize funding for restoration, enhancement, and development of fishing, hunting, shellfish, and wildlife viewing opportunities.

- Provide communities, industry, groups and others information on the economic value of fish and wildlife recreation and how they may benefit from these activities.

- Help ODFW more effectively target outreach efforts to contact hunters, anglers and wildlife viewers in their home communities and where they recreate.

Survey Method

Four separate surveys were conducted in 2008 in order to accurately assess the economic significance of fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. For fishing, hunting and shellfishing, survey participants were selected at random from license sales records – more than 50,000 questionnaires were mailed to ODFW resident and non-resident license holders (see Appendix D for self-administered questionnaires). For wildlife viewing, participants were identified through random digit dialing of Oregon telephone numbers. Those agreeing to participate were asked questions similar to those in the written questionnaires. Samples were stratified by certain portions of the state (groups of counties) and by collection period (quarterly). Overall, nearly 12,000 individuals provided information about their fishing, hunting, shellfishing, and wildlife viewing trips.

Survey Sample and Respondents

	Hunting	Fishing	Shellfish	Wildlife
Survey Method	Mail	Mail	Mail	Telephone
Collection Period	Annual	Bi-Annual	Annual	Quarterly
Number of Contacts	19,833	24,911	3,224	1,624
Completed Questionnaires	5,200	4,533	1,122	1,000
Response Rate	26%	18%	35%	62%

Note: Number of contacts does not include mailed questionnaires that were undeliverable.

In order to test for nonresponse bias, a telephone interview was conducted for a random sample of nonrespondents (those who did not return a questionnaire) for each of the segments contacted with mailed self-administered questionnaires. The responses of these groups were similar to those of the initial respondents. Through these telephone interviews, additional detail was gathered with regard to where to the allocation of expenditures -- before, during, or in the community closest to where the recreation activity occurred. The additional information was used to allocate expenditures at the county-level.

Generally, representative samples of 1,000 or more provide very reliable results. Confidence levels for respondent segments are shown in the table below. Appendix E describes the sampling design for the study and describes the approach taken to produce findings from the completed questionnaires.

Segment	**Sample Size**	**Confidence Level (%)**	
		90% Level (+/-)	**95% Level (+/-)**
Hunters	5,200	1.2	1.4
Fishers	4,533	1.3	1.5
Shellfishers	1,122	2.6	3.0
Oregon Households	1,000	2.6	3.1

Types of Expenditures Included

All of the expenditures associated with overnight and day trips where fishing, hunting, and shellfish harvest occurred in Oregon are included in the scope of this analysis. Expenditures made by both Oregon residents and nonresidents are included. For wildlife viewing, all of the expenditures associated with trips where wildlife viewing was a planned activity - *the primary reason* or *one of several reason*s for the trip – are included. Wildlife viewing expenditures made by nonresidents were estimated based on the data provided by survey participants and the U.S. Department of the Interior, Fish and Wildlife Service 2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

The analysis distinguishes between *travel-generated expenditures* – defined as those expenditures associated with overnight trips and day trips 50 + miles (*one-way)* – and *local recreation expenditures*, associated with activities occurring in locations under 50 miles from the participant's home. In addition, expenditures made for equipment used while participating in the above activities, if the equipment was purchased from a retailer or supplier located in Oregon during 2008 – such as gear, clothing, campers, recreational vehicles, boats etc. – are reported as *equipment expenditures*. Expenditures made by Oregon residents associated with trips, recreation, or equipment purchases that occurred or were made in locations <u>outside of Oregon</u> are <u>not</u> included.

The specific categories of expenditures included in this analysis are as follows:

Expenditure Categories	Description
Travel-Generated	Travel-generated expenditures associated with *all* overnight trips and *all* day trips 50^{+} miles (one-way) from a participant's home.
Local Recreation	Local Recreation expenditures associated with *all* day recreation less than 50 miles *(one-way)* from a participant's home.
Equipment purchases	Equipment expenditures made for specific activity-related equipment, as well as special clothing, tents, boats, campers, recreational vehicles and other, additional assorted purchases.

Report Contents

Following this introductory section, Section II provides a statewide review. Section III provides detailed expenditures by region (based on Travel Oregon regions). Section IV provides detailed expenditures for each of Oregon's 36 counties. Appendices A through C shows detailed trip characteristics, demographics, and number of trips by type of fish and wildlife. Copies of the survey questionnaires are shown in Appendix D. Appendix E describes the sampling design in more detail and highlights the steps taken to produce estimates from the completed questionnaires.

II. Oregon Statewide Summary



Participation and Expenditures in Oregon

In 2008, 2.8 million Oregon residents and nonresidents participated in fishing, hunting, wildlife viewing, and shellfish harvesting in Oregon. Of the total number of participants, 631 thousand fished, 282 thousand hunted, 175 thousand harvested shellfish, and 1.7 million participated in outdoor recreation where wildlife viewing was a planned activity, which includes observing, feeding, and photographing any kind of wildlife (not including visits to zoos or aquariums).

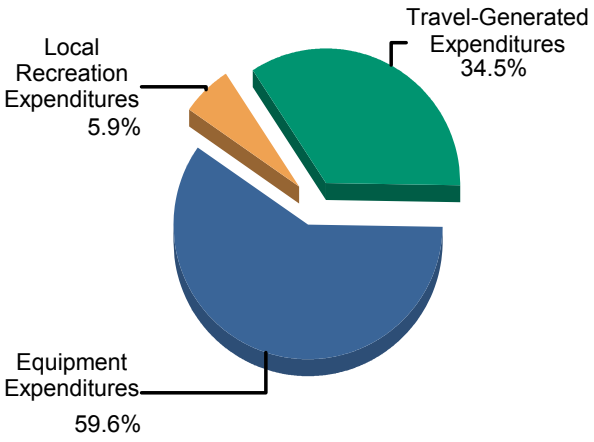
In 2008, state residents and nonresidents made three distinct types of wildlife recreation expenditures: travel-generated, local recreation, and equipment purchases. Oregon residents and nonresidents who traveled overnight and on day trips of 50+ miles (one-way) from home made *travel-generated expenditures* of $862 million. Local recreation expenditures of $147 million were made by Oregon residents while participating in these activities less than 50 miles from home. State residents and nonresidents also spent an additional $1.5 billion on equipment and activity-related purchases from retail establishments and suppliers based in Oregon.

Statewide Participants, Trips and Expenditures in Oregon, 2008

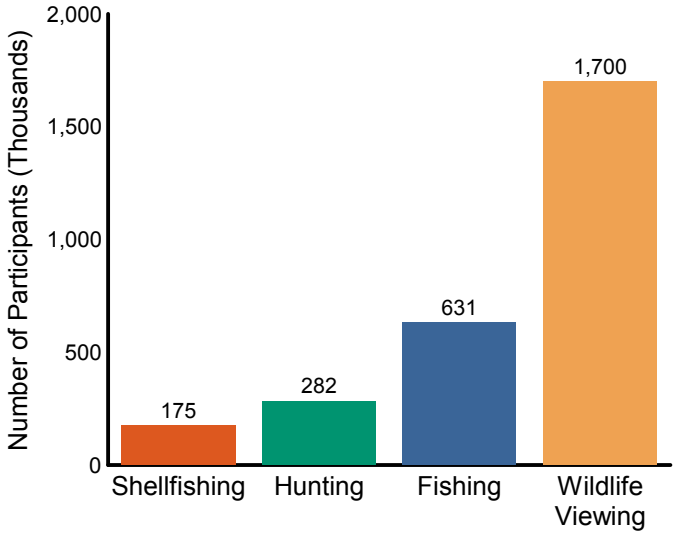
Total	***(in thousands)***
Participants in Oregon	2,788
Trips in Oregon	21,163
Travel-Generated Expenditures	$862,188
Local Recreation Expenditures	$146,908
Equipment Expenditures	$1,486,932

Notes: Resident and nonresident expenditures associated with all reported activities in Oregon. Travel-Generated expenditures associated with overnight and day trips 50+ miles (one-way).
Source: Dean Runyan Associates.

Fish and Wildlife Recreation Expenditures in Oregon, 2008
(Total: $2.5 billion)



Total Participants by Activity, 2008



Participants, Trips and Expenditures in Oregon by Activity, 2008

Fishing	***(in thousands)***
Anglers in Oregon	631
Angler Trips in Oregon	5,241
Travel-Generated Expenditures	$264,605
Local Recreation Expenditures	$76,905
Equipment Expenditures	$441,356

Shellfishing	***(in thousands)***
Shellfishers in Oregon	175
Shellfisher Trips in Oregon	471
Travel-Generated Expenditures	$31,039
Local Recreation Expenditures	$5,256
Equipment Expenditures	$135,688

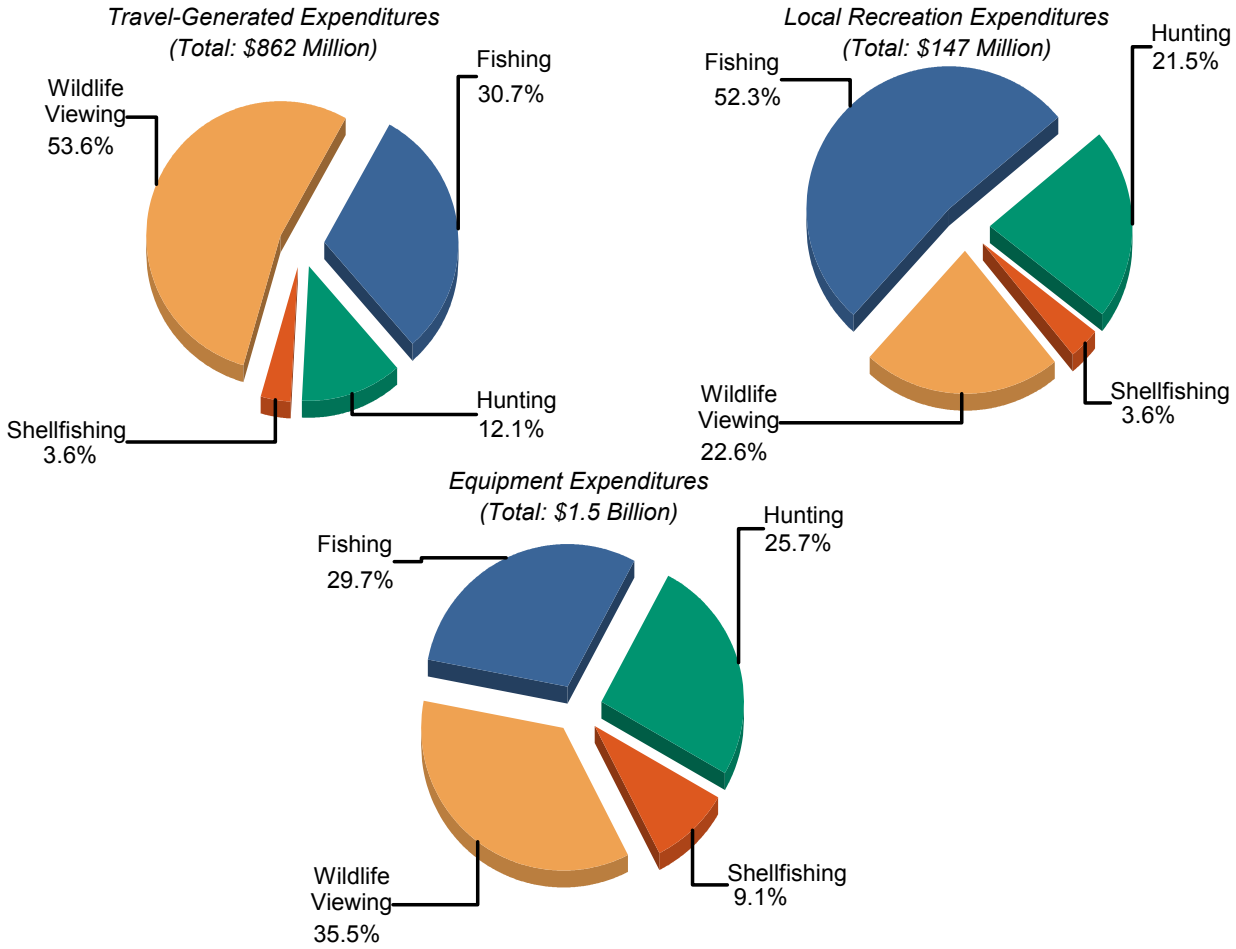
Hunting	
Hunters in Oregon	282
Hunter Trips in Oregon	1,754
Travel-Generated Expenditures	$104,458
Local Recreation Expenditures	$31,574
Equipment Expenditures	$381,908

Wildlife Viewing*	
Wildlife-Viewing Participants in Oregon	1,700
Wildlife Viewing Trips in Oregon	13,697
Travel-Generated Expenditures	$462,087
Local Recreation Expenditures	$33,173
Equipment Expenditures	$527,980

* Trips and Expenditures where wildlife viewing was a planned activity -- *the primary reason* or *one of several reasons* for the trip. Does not include expenditures associated with trip where incidental wildlife viewing occured.

Notes: Resident and nonresident expenditures associated with all reported activities in Oregon.
Travel-Generated expenditures associated with overnight and day trips 50+ miles (one-way).
Source: Dean Runyan Associates.

Expenditures in Oregon by Type and Activity, 2008



Note: Wildlife viewing expenditures on trips where wildlife viewing was a planned activity.
Source: Dean Runyan Associates.

Table 1. Expenditures for Fishing in Oregon, 2008

Freshwater Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$31,378
Food & Beverage Services	$31,059
Food Stores	$42,032
Ground Transportation	$43,876
Retail	$17,871
Outfitter/Guide/Charter Fees	$20,680
Other Recreation & Entertainment	$8,692
Total Travel Expenditures	$195,587
*Local Recreation Expenditures***	$74,293

Saltwater Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$12,217
Food & Beverage Services	$13,394
Food Stores	$9,842
Ground Transportation	$13,646
Retail	$6,981
Outfitter/Guide/Charter Fees	$8,074
Other Recreation & Entertainment	$4,864
Total Travel Expenditures	$69,018
*Local Recreation Expenditures***	$2,612

Total, All Fishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$43,595
Food & Beverage Services	$44,453
Food Stores	$51,873
Ground Transportation	$57,522
Retail	$24,852
Outfitter/Guide/Charter Fees	$28,754
Other Recreation & Entertainment	$13,556
Total Travel Expenditures	$264,605
*Local Recreation Expenditures***	$76,905

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with fishing in Oregon. Additionally, an estimated $5.3 million was made in airfares (round-trip) by those visitors who traveled to Oregon by air.
Source: Dean Runyan Associates.

Table 2. Expenditures for Shellfishing in Oregon, 2008

Shellfishing	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$6,848
Food & Beverage Services	$7,570
Food Stores	$6,496
Ground Transportation	$4,975
Retail	$2,996
Outfitter/Guide/Charter Fees	$580
Other Recreation & Entertainment	$1,574
Total Travel Expenditures	$31,039
*Local Recreation Expenditures***	$5,256

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 3. Expenditures for Hunting in Oregon, 2008

Hunting	***(Thousands)***
*Travel-Generated Expenditures**	
Accommodations	$10,664
Food & Beverage Services	$16,579
Food Stores	$33,381
Ground Transportation	$17,212
Retail	$21,199
Outfitter/Guide/Charter Fees	$2,435
Other Recreation & Entertainment	$2,989
Total Travel Expenditures	$104,458
*Local Recreation Expenditures***	$31,574

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 4. Expenditures for Wildlife Viewing in Oregon, 2008

Wildlife Viewing	*(Thousands)*
*Travel-Generated Expenditures**	
Accommodations	$129,033
Food & Beverage Services	$102,369
Food Stores	$88,780
Ground Transportation	$71,905
Retail	$44,542
Outfitter/Guide/Charter Fees	...
Other Recreation & Entertainment	$25,459
Total Travel Expenditures	$462,087
*Local Recreation Expenditures***	$33,173

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Recreation expenditures associated with local trips under 50 miles.
... Sample size too small to report data reliably.

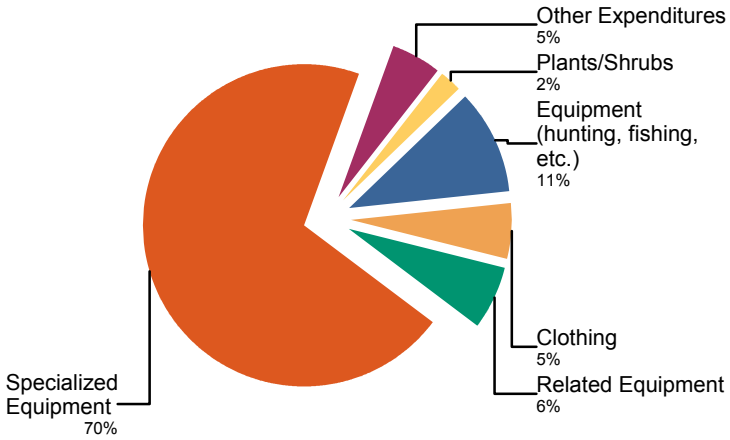
Note: Expenditures where wildlife viewing was a planned activity -- *the primary reason* or *one of several reasons* for the trip. Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

Table 5. Equipment Expenditures in Oregon, 2008 ($Millions)

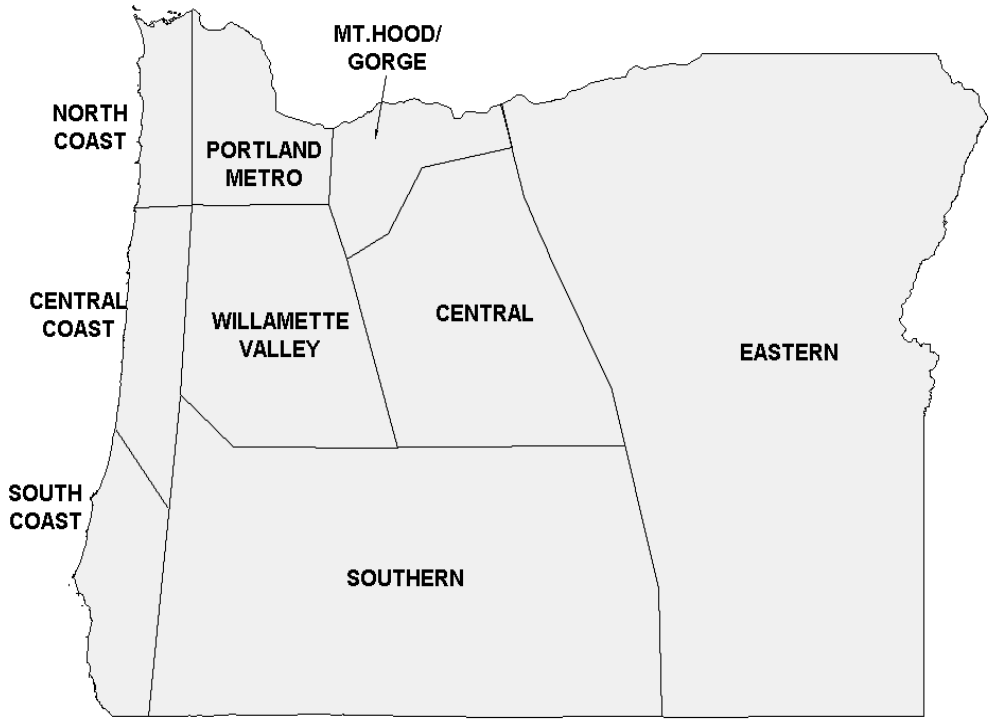
	Fishing	Hunting	Shellfishing	Wildlife Viewing	Combined Activities
Equipment (hunting, fishing, etc.)	$41.2	$73.7	$4.9	$37.6	$157.4
Clothing	$17.8	$26.7	$4.4	$31.6	$80.6
Related Equipment	$32.8	$22.7	$4.3	$36.8	$96.6
Specialized Equipment	$342.7	$234.3	$117.8	$349.4	$1,044.1
Other Expenditures	$6.8	$24.6	$4.3	$38.3	$74.0
Plants/Shrubs	$0.0	$0.0	$0.0	$34.2	$34.2
Total Equipment Expenditures	$441.4	$381.9	$135.7	$528.0	$1,486.9

Note: Special Equipment includes boats, campers, ATVs and other recreation vehicles.
For Hunting, Other Expenditures may include meat processing, and taxidermy.
Plants/Shrubs include plants and materials purchased for wildlife habitat areas.
Source: Dean Runyan Associates.

Equipment Expenditures in Oregon, 2008



III. Oregon Travel Regions



Counties by Oregon Travel Region

North Coast
- Clatsop
- Tillamook

Central Coast
- Douglas (West)
- Lincoln
- Lane (West)

South Coast
- Coos
- Curry

Willamette Valley
- Benton
- Clackamas (South)
- Lane (East)
- Linn
- Marion
- Polk
- Yamhill

Portland Metro
- Clackamas (West)
- Columbia
- Multnomah (West)
- Washington

Southern
- Douglas (East)
- Jackson
- Josephine
- Klamath
- Lake

Central
- Crook
- Deschutes
- Jefferson
- Wasco (South)

Mt.Hood/Gorge
- Clackamas (East)
- Multnomah (East)
- Hood River
- Wasco (North)

Eastern
- Baker
- Gilliam
- Grant
- Harney
- Malheur
- Morrow
- Sherman
- Umatilla
- Union
- Wallowa
- Wheeler

The tables in this section provide detailed estimates for the regions of Oregon for 2008.

Table 6. Travel-Generated Expenditures by Activity for Oregon Travel Regions, 2008 ($Million)

Region	Shell-fishing	Fishing	Hunting	Wildlife Viewing *	Combined Activities	All Oregon Travel**	Combined Activities (%)
Willamette Valley		$26.7	$17.3	$52.1	$96.1	$1,337.9	7.2%
North Coast	$13.3	$44.4	$4.7	$74.1	$136.5	$551.0	24.8%
Central Coast	$12.2	$50.1	$2.9	$61.0	$126.2	$624.5	20.2%
South Coast	$5.5	$21.7	$3.3	$24.1	$54.6	$283.0	19.3%
Portland Metro/Columbia		$18.1	$12.3	$56.6	$87.0	$3,567.3	2.4%
Southern		$28.3	$17.9	$52.8	$99.0	$831.3	11.9%
Central		$35.4	$11.4	$63.6	$110.4	$581.4	19.0%
Eastern		$27.6	$32.8	$46.3	$106.7	$361.1	29.5%
Mt. Hood/Gorge		$12.3	$1.8	$31.6	$45.7	$279.2	16.4%
State	**$31.0**	**$264.6**	**$104.4**	**$462.2**	**$862.2**	**$8,416.7**	**10.2%**

* Expenditures associated with overnight and day trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

** All Oregon Travel expenditures based on Oregon Travel Impacts, 1991-2008p (statewide preliminary estimates).

Note: Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way). Resident and nonresident expenditures associated with all reported activities in Oregon.
The estimates of travel-generated expenditures by county in this report will necessarily differ somewhat from estimates generated from different models, methodologies, and data sources, including Oregon Travel Impacts.

Source: Dean Runyan Associates.

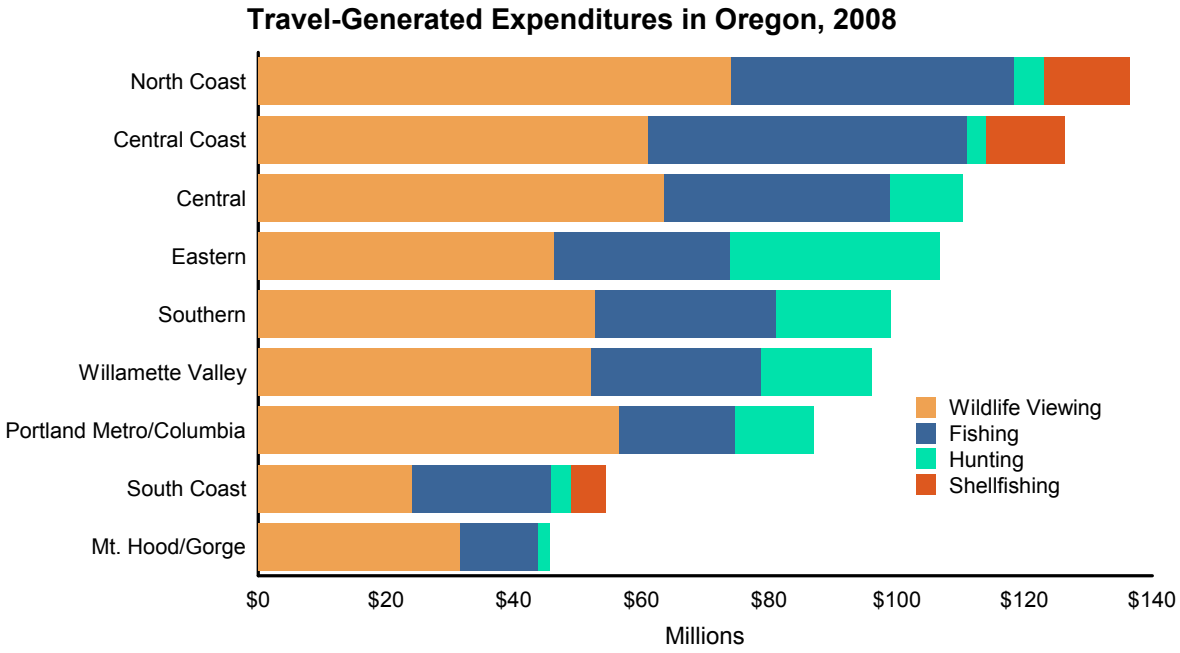


Table 7. Local Recreation Expenditures by Activity for Oregon Travel Regions, 2008 ($Million)

Region	Shell-fishing	Fishing	Hunting	Wildlife Viewing *	Combined Activites
Willamette Valley		$17.6	$9.7	$4.6	$31.9
North Coast	$2.0	$3.6	$1.2	$4.3	$11.1
Central Coast	$1.7	$5.0	$0.9	$4.9	$12.5
South Coast	$1.6	$3.5	$1.3	$1.9	$8.3
Portland Metro/Columbia		$16.6	$4.8	$3.0	$24.4
Southern		$11.3	$5.6	$4.2	$21.1
Central		$7.3	$2.9	$1.9	$12.1
Eastern		$6.1	$3.9	$1.8	$11.8
Mt. Hood/Gorge		$6.0	$1.3	$6.6	$13.9
State	**$5.3**	**$77.0**	**$31.6**	**$33.2**	**$147.1**

* Expenditures associated with local trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

Note: Any Nonresidents, who reported less than 50 miles, are included in Travel-Generated Expenditures. Local Recreation expenditures associated with trips under 50 miles.

Source: Dean Runyan Associates.

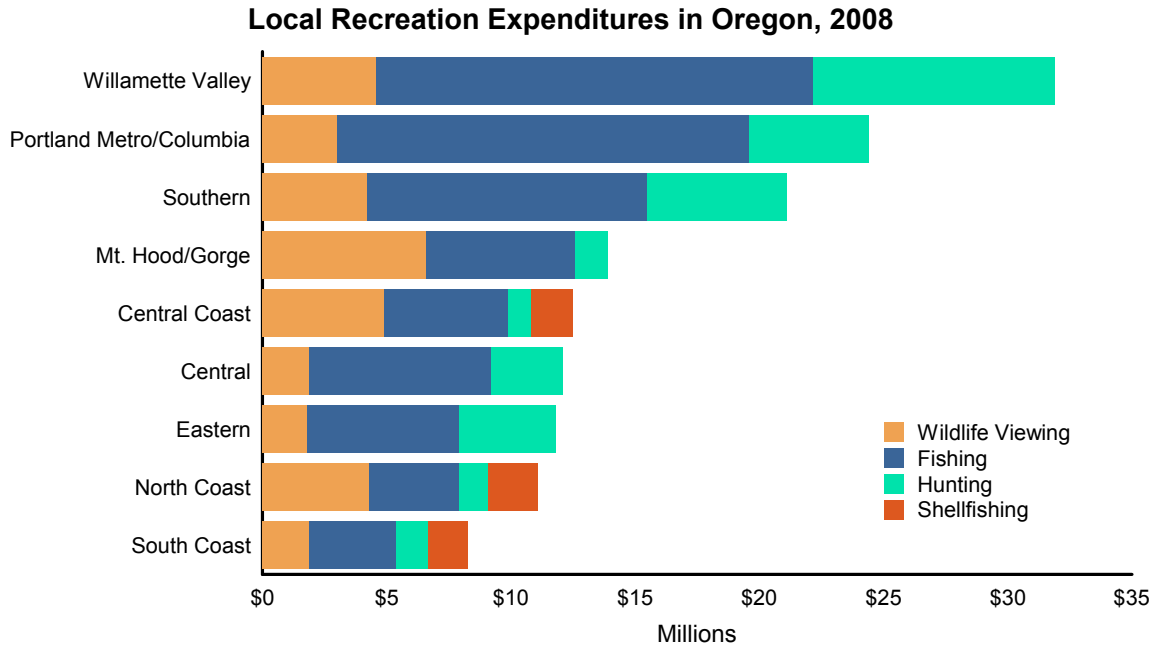


Table 8. Expenditures for Freshwater Fishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
Willamette Valley	$14.4	$12.3	$26.7	$17.6
North Coast	$9.1	$8.9	$18.0	$3.0
Central Coast	$12.0	$8.1	$20.1	$3.9
South Coast	$6.3	$2.7	$9.0	$2.6
Portland Metro/Columbia	$8.9	$9.2	$18.1	$16.6
Southern	$16.8	$11.5	$28.3	$11.3
Central	$25.8	$9.6	$35.4	$7.3
Eastern	$20.6	$7.0	$27.6	$6.1
Mt. Hood/Gorge	$6.9	$5.4	$12.3	$6.0
State	**$120.8**	**$74.8**	**$195.6**	**$74.3**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with freshwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 9. Expenditures for Saltwater Fishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
North Coast	$18.3	$8.1	$26.4	$0.6
Central Coast	$19.9	$10.1	$30.0	$1.1
South Coast	$7.6	$5.0	$12.6	$0.9
State	**$45.8**	**$23.2**	**$69.0**	**$2.6**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with saltwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 10. Expenditures for Shellfishing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
North Coast	$10.1	$3.2	$13.3	$2.0
Central Coast	$9.3	$2.9	$12.2	$1.7
South Coast	$4.7	$0.8	$5.5	$1.6
State	**$24.1**	**$6.9**	**31.0**	**$5.3**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 11. Expenditures for Hunting by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million) Overnight	Day	Total	Local Recreation Expenditures** ($Million)
Willamette Valley	$11.9	$5.4	$17.3	$9.7
North Coast	$3.4	$1.3	$4.7	$1.2
Central Coast	$2.2	$0.7	$2.9	$0.9
South Coast	$2.4	$0.9	$3.3	$1.3
Portland Metro/Columbia	$8.5	$3.8	$12.3	$4.8
Southern	$13.5	$4.4	$17.9	$5.6
Central	$9.0	$2.4	$11.4	$2.9
Eastern	$29.0	$3.8	$32.8	$3.9
Mt. Hood/Gorge	$1.4	$0.4	$1.8	$1.3
State	**$81.3**	**$23.1**	**$104.4**	**$31.6**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 12. Expenditures for Wildlife Viewing by Trip Type for Oregon Travel Regions, 2008

Region	Travel-Generated Expenditures* ($Million)			Local Recreation Expenditures** ($Million)
	Overnight	Day	Total	
Willamette Valley	$40.7	$11.4	$52.1	$4.6
North Coast	$67.5	$6.6	$74.1	$4.3
Central Coast	$53.7	$7.3	$61.0	$4.9
South Coast	$20.8	$3.3	$24.1	$1.9
Portland Metro/Columbia	$44.2	$12.4	$56.6	$3.0
Southern	$44.2	$8.6	$52.8	$4.2
Central	$59.6	$4.0	$63.6	$1.9
Eastern	$42.8	$3.5	$46.3	$1.8
Mt. Hood/Gorge	$22.0	$9.6	$31.6	$6.6
State	**$395.5**	**$66.7**	**$462.2**	**$33.2**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

IV. Oregon Counties



A description of the expenditure impact categories used in the detailed county tables follows:

Travel-Generated Expenditures by Activity includes the total travel spending made by Oregon residents and nonresidents in the county of destination, plus other specific trip-related purchases such as gasoline, food and beverages, and other retail purchases made before or while traveling to the destination. Expenditures for gasoline, food, and retail items made *before* the trip are allocated to the participant's home county. All other expenditures are allocated to the county in which the recreation activity occurred.

Local Recreation Expenditures by Activity includes the total recreation-related expenditures made by Oregon residents for day recreation activities less than 50 miles (one-way) from a participant's home.

The next five tables show detailed *Expenditures by Trip Type by County* for each of the five activities: freshwater fishing, saltwater fishing, shellfishing, hunting, and wildlife viewing. Trip types include overnight, day, and local recreation (less than 50 miles from participant's home).

Table 13. Travel-Generated Expenditures by Activity for Counties, 2008 ($000s)

County	Shellfishing	Fishing	Hunting	Wildlife Viewing*	Combined Activities	All Oregon Travel **	Combined Activites (%)
Baker		$5,670	$4,524	$8,259	$18,452	$47,851	38.6%
Benton		$1,677	$953	$4,941	$7,572	$91,532	8.3%
Clackamas		$7,158	$4,421	$21,632	$33,211	$435,661	7.6%
Clatsop	$5,661	$9,693	$2,313	$55,481	$73,147	$389,494	18.8%
Columbia		$790	$1,177	$3,367	$5,333	$31,220	17.1%
Coos	$4,552	$12,253	$2,535	$14,111	$33,452	$183,020	18.3%
Crook		$3,010	$2,584	$6,769	$12,363	$29,663	41.7%
Curry	$1,020	$9,374	$728	$10,022	$21,145	$100,025	21.1%
Deschutes		$20,410	$6,663	$42,771	$69,844	$475,684	14.7%
Douglas	$2,616	$19,112	$6,233	$9,698	$37,658	$247,649	15.2%
Gilliam		...	...	...	$548	$3,812	14.4%
Grant		$3,279	$5,138	$3,147	$11,564	$9,107	***
Harney		$2,812	$4,564	$7,953	$15,329	$19,645	78.0%
Hood River		$4,117	$789	$13,005	$17,910	$67,622	26.5%
Jackson		$8,520	$5,096	$18,664	$32,280	$380,721	8.5%
Jefferson		$4,010	$730	$9,596	$14,336	$55,014	26.1%
Josephine		$3,432	$1,558	$6,695	$11,685	$121,530	9.6%
Klamath		$5,741	$3,179	$13,993	$22,913	$130,820	17.5%
Lake		$2,560	$2,490	$4,940	$9,991	$11,272	88.6%
Lane	$1,840	$17,642	$7,907	$27,570	$54,959	$580,771	9.5%
Lincoln	$7,660	$32,478	$1,607	$53,229	$94,974	$453,023	21.0%
Linn		$3,070	$2,776	$4,114	$9,959	$117,906	8.4%
Malheur		$3,996	$2,157	$1,345	$7,498	$47,102	15.9%
Marion		$8,601	$3,718	$16,360	$28,679	$357,095	8.0%
Morrow		$921	$2,652	$4,942	$8,514	$13,251	64.3%
Multnomah		$7,955	$3,387	$31,511	$42,853	$2,803,647	1.5%
Polk		$925	$957	$2,375	$4,256	$139,551	3.0%
Sherman		$2,032	$746	$1,193	$3,970	$10,582	37.5%
Tillamook	$7,689	$34,710	$2,477	$18,569	$63,446	$161,523	39.3%
Umatilla		$2,576	$3,543	$9,703	$15,821	$146,254	10.8%
Union		$1,729	$5,435	$4,318	$11,481	$33,194	34.6%
Wallowa		$2,821	$2,771	$5,172	$10,765	$26,778	40.2%
Wasco		$13,607	$2,099	$7,800	$23,506	$85,449	27.5%
Washington		$4,816	$3,727	$15,226	$23,769	$514,450	4.6%
Wheeler		$1,462	$1,168	...	$2,776	$3,539	78.4%
Yamhill		$1,341	$1,580	$3,308	$6,229	$91,252	6.8%
State	**$31,039**	**$264,605**	**$104,458**	**$462,087**	**$862,188**	**$8,416,710**	**10.2%**

* Expenditures associated with overnight and day trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

** All Oregon Travel expenditures based on Oregon Travel Impacts, 1991-2008p (statewide preliminary estimates).

*** Percent FHW exceeds 100 due to dispersed camping related activity not included in Oregon Travel Impacts.

.... Sample size too small to report data reliably.

Note: Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way). Resident and nonresident expenditures associated with all reported activities in Oregon. The estimates of travel-generated expenditures by county in this report will necessarily differ somewhat from estimates generated from different models, methodologies, and data sources, including Oregon Travel Impacts.

Source: Dean Runyan Associates.

Table 14. Local Recreation Expenditures by Activity for Counties, 2008 ($000s)

County	Shellfishing	Fishing	Hunting	Wildlife Viewing*	Combined Activities
Baker		$640	$491	$317	$1,448
Benton		$1,353	$1,075	...	$2,428
Clackamas		$8,704	$2,496	$621	$11,820
Clatsop	$1,016	$1,515	$666	$2,715	$5,912
Columbia		...	...	$134	$133
Coos	$1,081	$2,551	$905	$1,637	$6,175
Crook		$999	$683	$218	$1,900
Curry	$483	$935	$413	$309	$2,140
Deschutes		$5,321	$1,817	$1,520	$8,657
Douglas	$175	$3,577	$1,785	$835	$6,373
Gilliam		...	...	$106	$106
Grant		$377	$391	...	$768
Harney		$330	$262	...	$654
Hood River		$1,960	$282	$3,249	$5,492
Jackson		$4,512	$2,025	$1,906	$8,443
Jefferson		$822	$288	$170	$1,280
Josephine		$1,600	$745	$648	$2,993
Klamath		$2,134	$1,035	$938	$4,108
Lake		$339	$283	...	$660
Lane	$324	$7,689	$3,047	$2,714	$13,774
Lincoln	$1,185	$2,408	$482	$3,557	$7,631
Linn		$3,699	$1,392	$391	$5,482
Malheur		$1,062	$460	$167	$1,689
Marion		$3,586	$1,660	$1,408	$6,654
Morrow		$593	$185	...	$857
Multnomah		$8,215	$2,662	$3,835	$14,712
Polk		$507	$830	$883	$2,220
Sherman		$198	$223	...	$420
Tillamook	$992	$2,080	$541	$1,607	$5,221
Umatilla		$1,541	$990	$741	$3,271
Union		$700	$596	$170	$1,465
Wallowa		$567	$217	$115	$898
Wasco		$645	$278	$945	$1,868
Washington		$3,584	$1,489	$796	$5,868
Wheeler		$139	$103	...	$255
Yamhill		$2,025	$778	$330	$3,133
State	**$5,256.33**	**$76,905.23**	**$31,574**	**$33,172.99**	**$146,908.27**

* Expenditures associated with local trips where wildlife viewing was *primary* or *one of several reasons* for the trip.

.... Sample size too small to report data reliably.

Note: Any Nonresidents, who reported less than 50 miles, are included in Travel-Generated Expenditures. Local Recreation expenditures associated with trips under 50 miles.

Source: Dean Runyan Associates.

Table 15. Expenditures for Freshwater Fishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$4,773	$896	$5,670	$640
Benton	$395	$1,282	$1,677	$1,353
Clackamas	$3,997	$3,161	$7,158	$8,704
Clatsop	$2,080	$1,989	$4,069	$1,363
Columbia	$423	$367	$790	...
Coos	$2,714	$1,842	$4,555	$1,885
Crook	$2,300	$710	$3,010	$999
Curry	$3,545	$907	$4,452	$673
Deschutes	$15,854	$4,557	$20,410	$5,321
Douglas	$7,247	$5,187	$12,434	$3,258
Gilliam	...	...	...	...
Grant	$2,934	$346	$3,279	$377
Harney	$2,362	$450	$2,812	$330
Hood River	$1,238	$2,879	$4,117	$1,960
Jackson	$4,720	$3,801	$8,520	$4,512
Jefferson	$2,558	$1,452	$4,010	$822
Josephine	$1,926	$1,507	$3,432	$1,600
Klamath	$3,853	$1,889	$5,741	$2,134
Lake	$1,938	$623	$2,560	$339
Lane	$8,957	$6,331	$15,288	$7,415
Lincoln	$6,516	$4,992	$11,508	$1,932
Linn	$1,581	$1,489	$3,070	$3,699
Malheur	$2,811	$1,185	$3,996	$1,062
Marion	$4,923	$3,678	$8,601	$3,586
Morrow	$685	$236	$921	$593
Multnomah	$4,079	$3,876	$7,955	$8,215
Polk	$505	$420	$925	$507
Sherman	$1,785	$247	$2,032	$198
Tillamook	$7,026	$6,913	$13,939	$1,618
Umatilla	$1,054	$1,522	$2,576	$1,541
Union	$872	$857	$1,729	$700
Wallowa	$2,082	$740	$2,821	$567
Wasco	$9,056	$4,551	$13,607	$645
Washington	$2,207	$2,609	$4,816	$3,584
Wheeler	$948	$514	$1,462	$139
Yamhill	$573	$768	$1,341	$2,025
State	**$120,798**	**$74,789**	**$195,587**	**$74,293**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with freshwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 16. Expenditures for Saltwater Fishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Clatsop	$3,991	$1,633	$5,624	$152
Coos	$3,587	$4,111	$7,698	$667
Curry	$4,019	$902	$4,921	$262
Douglas	$4,643	$2,036	$6,679	$319
Lane	$909	$1,445	$2,354	$274
Lincoln	$14,355	$6,615	$20,970	$476
Tillamook	$14,344	$6,428	$20,772	$463
State	**$45,848**	**$23,170**	**$69,018**	**$2,612**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with saltwater fishing in Oregon.
Source: Dean Runyan Associates.

Table 17. Expenditures for Shellfishing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Clatsop	$3,999	$1,662	$5,661	$1,016
Coos	$3,770	$782	$4,552	$1,081
Curry	$972	$48	$1,020	$483
Douglas	$1,894	$721	$2,616	$175
Lane	$1,487	$353	$1,840	$324
Lincoln	$5,876	$1,784	$7,659	$1,185
Tillamook	$6,145	$1,545	$7,689	$992
State	**$24,143**	**$6,896**	**$31,039**	**$5,256**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).
** Local Recreation expenditures associated with trips under 50 miles.

Note: Resident and nonresident expenditures associated with shellfishing in Oregon.
Source: Dean Runyan Associates.

Table 18. Expenditures for Hunting by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$4,010	$514	$4,524	$491
Benton	$612	$341	$953	$1,075
Clackamas	$3,112	$1,309	$4,421	$2,496
Clatsop	$1,661	$652	$2,313	$666
Columbia	$840	$337	$1,177	...
Coos	$1,834	$701	$2,535	$905
Crook	$2,060	$524	$2,584	$683
Curry	$519	$209	$728	$413
Deschutes	$5,495	$1,167	$6,663	$1,817
Douglas	$4,758	$1,475	$6,233	$1,785
Gilliam	...	...	...	...
Grant	$4,748	$390	$5,138	$391
Harney	$4,215	$349	$4,564	$262
Hood River	$632	$157	$789	$282
Jackson	$3,879	$1,217	$5,096	$2,025
Jefferson	$512	$217	$730	$288
Josephine	$1,032	$526	$1,558	$745
Klamath	$2,321	$858	$3,179	$1,035
Lake	$2,114	$377	$2,490	$283
Lane	$5,687	$2,220	$7,907	$3,047
Lincoln	$1,167	$441	$1,607	$482
Linn	$1,879	$897	$2,776	$1,392
Malheur	$1,704	$453	$2,157	$460
Marion	$2,473	$1,245	$3,718	$1,660
Morrow	$2,377	$275	$2,652	$185
Multnomah	$2,320	$1,067	$3,387	$2,662
Polk	$647	$310	$957	$830
Sherman	$448	$298	$746	$223
Tillamook	$1,789	$688	$2,477	$541
Umatilla	$2,851	$692	$3,543	$990
Union	$4,896	$539	$5,435	$596
Wallowa	$2,553	$217	$2,771	$217
Wasco	$1,459	$640	$2,099	$278
Washington	$2,516	$1,211	$3,727	$1,489
Wheeler	$1,101	...	$1,168	$103
Yamhill	$1,051	$529	$1,580	$778
State	**$81,326**	**$23,132**	**$104,458**	**$31,574**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with hunting in Oregon.
Source: Dean Runyan Associates.

Table 19. Expenditures for Wildlife Viewing by Trip Type for Counties, 2008

County	Travel-Generated Expenditures* ($000s) Overnight	Day	Total	Local Recreation Expenditures** ($000s)
Baker	$7,709	$550	$8,259	$317
Benton	$4,556	$385	$4,941	...
Clackamas	$19,013	$2,619	$21,632	$621
Clatsop	$51,349	$4,132	$55,481	$2,715
Columbia	$2,914	$453	$3,367	$134
Coos	$11,376	$2,735	$14,111	$1,637
Crook	$6,331	$439	$6,769	$218
Curry	$9,438	$585	$10,022	$309
Deschutes	$39,719	$3,052	$42,771	$1,520
Douglas	$7,909	$1,788	$9,698	$835
Gilliam	...	$163	$163	$106
Grant	$3,107	...	$3,147	...
Harney	$7,825	$128	$7,953	...
Hood River	$8,214	$4,791	$13,005	$3,249
Jackson	$14,803	$3,861	$18,664	$1,906
Jefferson	$9,247	$349	$9,596	$170
Josephine	$5,292	$1,403	$6,695	$648
Klamath	$12,269	$1,725	$13,993	$938
Lake	$4,842	...	$4,940	...
Lane	$21,961	$5,609	$27,570	$2,714
Lincoln	$47,820	$5,409	$53,229	$3,557
Linn	$3,010	$1,104	$4,114	$391
Malheur	$961	$384	$1,345	$167
Marion	$12,949	$3,412	$16,360	$1,408
Morrow	$4,774	$168	$4,942	...
Multnomah	$22,487	$9,025	$31,511	$3,835
Polk	$762	$1,613	$2,375	$883
Sherman	$1,183	...	$1,193	...
Tillamook	$16,104	$2,465	$18,569	$1,607
Umatilla	$8,264	$1,439	$9,703	$741
Union	$3,934	$384	$4,318	$170
Wallowa	$4,967	$205	$5,172	$115
Wasco	$6,305	$1,495	$7,800	$945
Washington	$11,535	$3,691	$15,226	$796
Wheeler	$117	...	$146	...
Yamhill	$2,389	$919	$3,308	$330
State	**$395,430**	**$66,657**	**$462,087**	**$33,173**

* Travel-generated expenditures associated with overnight and day trips 50+ miles (one-way).

** Local Recreation expenditures associated with trips under 50 miles.

.... Sample size too small to report data reliably.

Note: Resident and nonresident expenditures associated with wildlife viewing in Oregon.
Source: Dean Runyan Associates.

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APPENDIX A

Trip Characteristics by Activity

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Table A-1. Travel Characteristics of Oregon Freshwater Anglers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	63.7%	87.4%	74.9%	93.1%	72.5%	85.4%	78.2%
One Of Several Reasons	33.3%	11.3%	22.9%	5.9%	24.8%	8.6%	17.7%
Incidental Activity	2.9%	1.3%	2.1%	1.1%	2.7%	6.0%	4.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	72.3%	NA	72.3%	NA	51.4%	NA	51.4%
Campground/Camping	20.4%	NA	20.4%	NA	39.4%	NA	39.4%
Friends/Relatives	11.3%	NA	11.3%	NA	19.0%	NA	19.0%
Second Home	7.4%	NA	7.4%	NA	2.9%	NA	2.9%
Total *	111.4%		111.4%		112.7%		112.7%
Number of Nights							
1 Night	9.6%	NA	9.6%	NA	7.4%	NA	7.4%
2 Nights	28.8%	NA	28.8%	NA	16.9%	NA	16.9%
3-4 Nights	32.3%	NA	32.3%	NA	32.7%	NA	32.7%
5-6 Nights	13.1%	NA	13.1%	NA	23.0%	NA	23.0%
7-13 Nights	11.7%	NA	11.7%	NA	13.4%	NA	13.4%
14+ Nights	4.5%	NA	4.5%	NA	6.5%	NA	6.5%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	10.3%	NA	5.4%	100.0%	4.2%	20.5%	11.2%
50-99	28.7%	72.5%	49.5%	NA	11.3%	44.7%	25.6%
100-199	41.8%	22.8%	32.8%	NA	21.5%	16.9%	19.5%
200-299	12.1%	4.3%	8.4%	NA	12.9%	4.0%	9.1%
300+	7.1%	0.3%	3.9%	NA	50.1%	13.9%	34.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.6	2.2	2.4	2.0	2.6	2.0	2.3
with Oregon License	2.3	2.0	2.2	1.7	2.2	1.7	2.0
Number of Children	0.8	0.5	0.7	0.4	0.2	0.3	0.2
Travel Companions							
Just Myself	5.0%	6.7%	5.8%	12.8%	7.8%	5.5%	6.8%
Immediate Family Only	46.2%	38.0%	42.4%	36.1%	37.2%	30.3%	34.1%
Multiple Families	22.0%	20.3%	21.2%	14.8%	25.0%	27.0%	25.9%
Other Adult Friends	23.6%	29.6%	26.4%	30.2%	26.2%	32.2%	29.0%
Other	3.3%	5.5%	4.3%	6.0%	3.7%	4.9%	4.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Freshwater Species Fished							
Trout	66.6%	54.8%	61.0%	54.9%	46.9%	53.6%	49.9%
Salmon	21.2%	35.4%	27.9%	34.1%	24.4%	26.9%	25.5%
Steelhead	23.3%	34.3%	28.5%	35.9%	35.8%	29.5%	33.0%
Bass	22.6%	18.0%	20.4%	23.3%	17.9%	24.0%	20.6%
Sturgeon	7.1%	10.4%	8.6%	10.5%	6.2%	6.7%	6.4%
Other	13.6%	10.4%	12.1%	7.8%	14.9%	13.7%	14.3%
Total *	154.4%	163.3%	158.5%	166.5%	146.1%	154.4%	149.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-2. Travel Characteristics of Oregon Saltwater Anglers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	80.5%	87.1%	83.4%	94.2%	69.8%	85.1%	75.2%
One Of Several Reasons	19.5%	12.9%	16.6%	5.8%	30.2%	10.6%	23.3%
Incidental Activity	0.0%	0.0%	0.0%	0.0%	0.0%	4.3%	1.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	36.2%	NA	36.2%	NA	39.2%	NA	39.2%
Campground/Camping	50.1%	NA	50.1%	NA	24.3%	NA	24.3%
Friends/Relatives	17.5%	NA	17.5%	NA	32.4%	NA	32.4%
Second Home	13.7%	NA	13.7%	NA	18.9%	NA	18.9%
Total *	117.5%		117.5%		114.8%		114.8%
Number of Nights							
1 Night	12.8%	NA	12.8%	NA	7.1%	NA	7.1%
2 Nights	31.9%	NA	31.9%	NA	21.2%	NA	21.2%
3-4 Nights	27.6%	NA	27.6%	NA	30.6%	NA	30.6%
5-6 Nights	6.0%	NA	6.0%	NA	9.4%	NA	9.4%
7-13 Nights	15.6%	NA	15.6%	NA	5.9%	NA	5.9%
14+ Nights	6.2%	NA	6.2%	NA	25.9%	NA	25.9%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	1.5%	NA	0.8%	100.0%	2.4%	18.4%	8.2%
50-99	43.9%	63.1%	52.7%	NA	25.9%	6.1%	18.7%
100-199	44.7%	34.9%	40.2%	NA	20.0%	20.4%	20.1%
200-299	7.0%	1.7%	4.6%	NA	22.4%	42.9%	29.9%
300+	3.0%	0.2%	1.7%	NA	29.4%	12.2%	23.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.8	2.6	2.7	2.1	2.6	1.3	1.3
with Oregon License	2.5	2.4	2.4	2.0	2.6	1.1	1.1
Number of Children	0.6	0.5	0.6	0.3	0.1	0.4	0.4
Travel Companions							
Just Myself	2.1%	0.8%	1.6%	6.3%	1.4%	2.0%	1.7%
Immediate Family Only	47.3%	38.9%	43.7%	22.5%	39.4%	22.4%	32.5%
Multiple Families	26.2%	17.5%	22.4%	16.2%	32.4%	28.6%	30.8%
Other Adult Friends	19.8%	38.0%	27.6%	51.5%	26.8%	46.9%	35.0%
Other	4.6%	4.8%	4.7%	3.5%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Saltwater Species Fished							
Salmon	65.0%	63.8%	43.5%	62.6%	69.8%	67.5%	70.4%
Halibut	22.8%	35.2%	19.2%	22.2%	26.7%	57.5%	34.1%
Tuna	17.5%	21.9%	13.2%	17.4%	27.9%	55.0%	39.3%
Rock/Bottom	49.2%	55.1%	35.0%	69.5%	45.3%	75.0%	57.8%
Perch	12.8%	13.7%	8.9%	11.9%	4.7%	7.5%	5.2%
Other	18.7%	17.0%	12.1%	13.7%	9.3%	5.0%	7.4%
Total *	186.0%	206.7%	131.8%	197.3%	183.7%	267.5%	214.1%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-3. Travel Characteristics of Oregon Shellfishers: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	39.6%	74.3%	56.0%	89.5%	25.4%	40.8%	28.9%
One Of Several Reasons	54.5%	21.5%	38.9%	10.0%	60.2%	45.1%	56.8%
Incidental Activity	5.9%	4.3%	5.1%	0.6%	14.3%	14.1%	14.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	22.8%	NA	22.8%	NA	30.7%	NA	30.7%
Campground/Camping	50.4%	NA	50.4%	NA	58.2%	NA	58.2%
Friends/Relatives	15.2%	NA	15.2%	NA	19.3%	NA	19.3%
Second Home	20.3%	NA	20.3%	NA	9.4%	NA	9.4%
Total *	108.7%		108.7%		117.6%		117.6%
Number of Nights							
1 Night	13.5%	NA	13.5%	NA	1.7%	NA	1.7%
2 Nights	30.7%	NA	30.7%	NA	9.4%	NA	9.4%
3-4 Nights	24.5%	NA	24.5%	NA	17.1%	NA	17.1%
5-6 Nights	10.4%	NA	10.4%	NA	15.4%	NA	15.4%
7-13 Nights	9.8%	NA	9.8%	NA	25.2%	NA	25.2%
14+ Nights	11.2%	NA	11.2%	NA	31.2%	NA	31.2%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	3.4%	NA	1.8%	100.0%	0.4%	50.0%	12.3%
50-99	49.5%	69.9%	59.2%	NA	2.1%	9.2%	3.8%
100-199	35.6%	28.4%	32.2%	NA	16.7%	35.5%	21.2%
200-299	8.6%	1.2%	5.1%	NA	8.8%	0.0%	6.6%
300+	2.9%	0.5%	1.8%	NA	72.1%	5.3%	56.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	3.0	2.7	2.8	2.5	2.9	3.3	3.0
with Oregon License	2.7	2.5	2.6	2.5	2.4	2.9	2.5
Number of Children	0.7	0.5	0.6	0.5	0.6	0.3	0.5
Travel Companions							
Just Myself	1.9%	4.1%	3.0%	15.3%	4.3%	3.5%	4.2%
Immediate Family Only	39.6%	40.6%	40.1%	41.7%	59.7%	31.6%	54.2%
Multiple Families	22.0%	8.6%	15.6%	7.6%	20.3%	7.0%	17.7%
Other Adult Friends	33.4%	44.8%	38.8%	34.8%	15.6%	57.9%	24.0%
Other Travel Party	3.1%	1.8%	2.5%	0.7%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Shellfish Harvested							
Crabs	79.8%	71.4%	75.9%	70.0%	91.8%	92.4%	91.9%
Razor Clams	26.9%	28.7%	27.8%	30.1%	13.5%	22.7%	15.5%
Bay Clams	25.5%	12.8%	19.6%	28.5%	27.0%	34.8%	28.7%
Mussels	5.4%	2.1%	3.9%	3.4%	0.4%	1.5%	0.6%
Rock Scallops	0.7%	1.1%	0.9%	0.0%	0.0%	0.0%	0.0%
Sand/Mud Shrimps	6.1%	6.2%	6.1%	10.6%	0.0%	0.0%	0.0%
Other	0.9%	2.8%	1.8%	2.4%	0.4%	7.6%	1.9%
Total *	145.3%	125.1%	135.9%	145.0%	133.1%	159.0%	138.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-4. Travel Characteristics of Oregon Hunters: 2008

	Oregon Residents				Nonresidents		
	Travel Characteristics			Local	Travel Characteristics		
	Overnight	Day	Total	Recreation	Overnight	Day	Total
Purpose of Trip							
Primary Reason	91.5%	90.4%	91.1%	93.3%	93.6%	88.5%	91.6%
One Of Several Reasons	8.1%	9.1%	8.5%	6.1%	6.3%	9.3%	7.4%
Incidental Activity	0.4%	0.6%	0.5%	0.6%	0.1%	2.2%	0.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Type of Accommodation							
Hotel, Motel, Rented Cabin	13.3%	NA	13.3%	NA	30.1%	NA	30.1%
Campground/Camping	80.3%	NA	80.3%	NA	54.3%	NA	54.3%
Friends/Relatives	9.5%	NA	9.5%	NA	29.7%	NA	29.7%
Second Home	6.8%	NA	6.8%	NA	6.1%	NA	6.1%
Total *	109.9%		109.9%		120.2%		120.2%
Number of Nights							
1 Night	3.5%	NA	3.5%	NA	3.7%	NA	3.7%
2 Nights	13.9%	NA	13.9%	NA	13.6%	NA	13.6%
3-4 Nights	20.3%	NA	20.3%	NA	19.8%	NA	19.8%
5-6 Nights	20.3%	NA	20.3%	NA	19.7%	NA	19.7%
7-13 Nights	33.2%	NA	33.2%	NA	31.3%	NA	31.3%
14+ Nights	8.8%	NA	8.8%	NA	11.9%	NA	11.9%
Total	100.0%		100.0%		100.0%		100.0%
Miles Traveled							
less than 50	11.5%	NA	7.4%	100.0%	4.0%	17.6%	9.3%
50-99	22.4%	69.4%	39.0%	NA	9.0%	43.6%	22.4%
100-199	25.4%	24.3%	25.0%	NA	15.0%	20.0%	16.9%
200-299	20.5%	3.3%	14.4%	NA	14.0%	5.6%	10.7%
300+	20.1%	3.1%	14.1%	NA	58.1%	13.3%	40.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Average Party Size							
Number of Adults	2.8	2.2	2.5	2.0	2.5	2.3	2.4
with Oregon License	2.7	2.1	2.2	1.9	2.3	2.3	2.4
Number of Children	0.5	0.4	0.4	0.4	0.2	0.2	0.2
Travel Companions							
Just Myself	16.2%	6.5%	12.8%	3.2%	10.2%	2.2%	7.1%
Immediate Family Only	29.5%	41.7%	33.9%	36.1%	25.5%	24.3%	25.0%
Multiple Families	44.9%	38.1%	42.5%	38.1%	55.1%	58.3%	56.3%
Other Adult Friends	3.8%	2.4%	3.3%	2.2%	2.6%	3.2%	2.8%
Other Travel Party	5.6%	11.3%	7.6%	20.4%	6.6%	12.1%	8.7%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Game Hunted During Trip							
Deer	54.0%	54.2%	54.1%	68.0%	41.2%	20.8%	33.4%
Elk	58.3%	35.3%	50.3%	36.2%	39.3%	20.4%	32.1%
Wild Turkey	5.0%	5.8%	5.3%	5.9%	3.2%	2.2%	2.8%
Other Big Game	9.1%	10.2%	9.5%	9.1%	2.5%	1.5%	2.1%
Upland Game Birds	15.8%	23.7%	18.6%	18.2%	25.7%	48.0%	34.2%
Waterfowl	6.3%	11.0%	7.9%	18.3%	16.9%	22.2%	18.9%
Other	5.4%	7.9%	6.3%	4.2%	4.5%	6.0%	5.1%
Total *	153.9%	148.1%	151.8%	159.9%	133.3%	121.1%	128.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-5. Travel Characteristics of Oregon Wildlife Viewers: 2008

(where wildlife viewing activity occurred)

	Oregon Residents			
	Travel Characteristics			Local
	Overnight	Day	Total	Recreation
Purpose of Trip				
Primary Reason	15.7%	20.5%	17.4%	22.5%
One Of Several Reasons	38.3%	38.6%	38.4%	47.9%
Incidental Activity	46.0%	40.9%	44.2%	29.6%
Total	100.0%	100.0%	100.0%	100.0%
Type of Accommodation				
Hotel, Motel, Rented Cabin	36.6%	NA	36.6%	NA
Campground/Camping	35.7%	NA	35.7%	NA
Friends/Relatives	13.7%	NA	13.7%	NA
Second Home	4.8%	NA	4.8%	NA
Other	15.2%	NA	15.2%	NA
Total *	106.0%		106.0%	
Number of Nights				
1 Night	24.3%	NA	24.3%	NA
2 Nights	37.3%	NA	37.3%	NA
3-4 Nights	21.3%	NA	21.3%	NA
5-6 Nights	8.2%	NA	8.2%	NA
7-13 Nights	5.9%	NA	5.9%	NA
14+ Nights	3.0%	NA	3.0%	NA
Total	100.0%		100.0%	
Miles Traveled				
less than 50	10.4%	NA	6.7%	100.0%
50-99	29.7%	76.2%	46.1%	NA
100-199	30.6%	17.8%	26.0%	NA
200-299	17.2%	2.8%	12.1%	NA
300+	12.2%	3.2%	9.0%	NA
Total	100.0%	100.0%	100.0%	100.0%
Average Party Size				
Number of Adults	2.8	2.6	2.7	2.4
Number of Children	1.2	0.5	0.9	0.8
Travel Companions				
Just Myself	7.4%	9.9%	8.3%	15.1%
Immediate Family Only	52.6%	58.3%	54.6%	56.8%
Multiple Families	15.7%	5.7%	12.1%	7.6%
Other Adult Friends	20.6%	25.6%	22.4%	18.2%
Other Travel Party	3.7%	0.6%	2.6%	2.3%
Total	100.0%	100.0%	100.0%	100.0%
Wildlife Viewed				
Birds	90.6%	88.4%	89.8%	85.4%
Land Animals	83.5%	76.9%	81.1%	71.4%
Marine Mammals	18.4%	17.1%	17.9%	10.5%
Marine Life/Tidepools	16.9%	14.4%	16.0%	9.0%
Fish	29.2%	23.3%	27.1%	27.2%
Amphibians/Reptiles	17.3%	8.7%	14.2%	11.9%
Other	4.4%	2.7%	3.8%	4.8%
Total *	260.3%	231.5%	250.0%	220.2%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

Table A-6. Travel Characteristics of Oregon Wildlife Viewers : 2008

(where wildlife viewing was the primary reason of trip)

	Oregon Residents			
	Travel Characteristics			Local
	Overnight	Day	Total	Recreation
Purpose of Trip				
Primary Reason	100.0%	100.0%	100.0%	100.0%
One Of Several Reasons	0.0%	0.0%	0.0%	0.0%
Incidental Activity	0.0%	0.0%	0.0%	0.0%
Total	100.0%	100.0%	100.0%	100.0%
Type of Accommodation				
Hotel, Motel, Rented Cabin	16.4%	NA	16.4%	NA
Campground/Camping	48.0%	NA	48.0%	NA
Friends/Relatives	7.5%	NA	7.5%	NA
Second Home	0.0%	NA	0.0%	NA
Other	30.1%	NA	30.1%	NA
Total *	102.0%		102.0%	
Number of Nights				
1 Night	8.9%	NA	8.9%	NA
2 Nights	34.2%	NA	34.2%	NA
3-4 Nights	26.0%	NA	26.0%	NA
5-6 Nights	14.4%	NA	14.4%	NA
7-13 Nights	6.8%	NA	6.8%	NA
14+ Nights	9.6%	NA	9.6%	NA
Total	100.0%		100.0%	
Miles Traveled				
less than 50	10.6%	NA	6.5%	100.0%
50-99	36.2%	91.1%	57.6%	NA
100-199	23.4%	4.4%	16.0%	NA
200-299	16.3%	1.1%	10.4%	NA
300+	13.5%	3.3%	9.5%	NA
Total	100.0%	100.0%	100.0%	100.0%
Average Party Size				
Number of Adults	2.6	2.8	2.7	2.1
Number of Children	1.1	0.6	0.9	1.0
Travel Companions				
Just Myself	7.5%	16.8%	11.5%	31.3%
Immediate Family Only	45.9%	52.3%	48.6%	42.2%
Multiple Families	13.7%	9.3%	11.9%	7.8%
Other Adult Friends	24.7%	21.5%	23.3%	3.1%
Other Travel Party	8.2%	0.0%	4.7%	15.6%
Total	100.0%	100.0%	100.0%	100.0%
Wildlife Viewed				
Birds	82.9%	83.2%	83.0%	57.8%
Land Animals	80.8%	57.0%	70.8%	95.3%
Marine Mammals	12.3%	15.9%	13.8%	0.0%
Marine Life/Tidepools	9.6%	11.2%	10.3%	0.0%
Fish	29.5%	29.9%	29.6%	15.6%
Amphibians/Reptiles	19.2%	2.8%	12.3%	0.0%
Other	9.6%	5.6%	7.9%	0.0%
Total *	243.9%	205.6%	227.7%	168.7%

* Detail may total more than 100% due to multiple response.
Note: Local Recreation represents local trips of less than 50 miles (one-way).
Source: Dean Runyan Associates.

APPENDIX B

Demographics

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Table B-1. Demographic Characteristics and Preferred Communication: Residents versus Nonresidents

	Hunters		Shellfishers		Anglers		Wildlife Viewers*
	Res.	Nonres.	Res.	Nonres.	Res.	Nonres.	Res.
Household Income							
UNDER $25,000	8.3%	2.3%	10.7%	9.0%	13.4%	4.4%	16.2%
$25,000-$49,999	25.0%	11.3%	26.0%	16.0%	27.6%	15.8%	30.5%
$50,000-$74,999	28.2%	23.2%	29.1%	34.0%	25.5%	24.2%	21.9%
$75,000-$99,999	18.5%	19.5%	15.2%	23.0%	16.8%	20.5%	13.1%
$100,000 OR MORE	20.0%	43.6%	19.0%	18.0%	16.7%	35.1%	18.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Education							
Some High School Or H.S. Diploma	32.3%	20.7%	28.5%	23.1%	29.6%	20.1%	23.1%
Some College Or 2-Year Degree	40.3%	33.9%	40.0%	43.3%	39.6%	31.2%	36.5%
Bachelors Degree	18.5%	27.7%	18.9%	20.2%	18.1%	24.9%	23.6%
Advanced Degree	8.9%	17.7%	12.6%	13.5%	12.6%	23.7%	16.8%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**
Preferred Communication with ODFW							
Email	14.4%	18.0%	14.7%	16.7%	13.0%	17.7%	24.3%
ODFW Printed Brochures	22.9%	16.9%	19.8%	23.5%	21.9%	14.8%	6.2%
Information At License Vendors	14.3%	6.0%	14.2%	14.7%	15.6%	14.0%	3.4%
ODFW Website	20.8%	30.5%	23.9%	19.6%	24.3%	26.4%	64.2%
Direct Mail	25.2%	26.1%	24.0%	23.5%	21.6%	24.1%	0.6%
Other	2.4%	2.5%	3.4%	2.0%	3.7%	3.0%	1.2%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

* Oregon Residents who reported either planned or unplanned wildlife viewing activity in 2008.
Note: Detail may total more than 100% due to multiple response.

Source: Dean Runyan Associates.

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APPENDIX C

Number of Trips and Days of Participation by Activity

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Table C-1. Freshwater Fishing Trips in Oregon by Type of Fish (in Thousands), 2008

	Trout	Salmon	Steelhead	Bass	Sturgeon	Other	Total
Willamette Valley							
Overnight	47	4	5	4	0	7	67
Day (50+ miles)	101	20	31	9	0	11	173
Local (under 50 miles)	280	81	103	101	13	19	597
North Coast							
Overnight	15	28	13	6	5	4	72
Day (50+ miles)	34	81	71	8	10	12	216
Local (under 50 miles)	39	28	18	5	11	0	101
Central Coast							
Overnight	29	26	17	13	6	7	97
Day (50+ miles)	40	61	45	26	12	11	194
Local (under 50 miles)	38	35	33	13	5	6	132
South Coast							
Overnight	8	20	12	4	0	1	46
Day (50+ miles)	9	14	10	15	0	2	52
Local (under 50 miles)	20	23	28	16	0	0	87
Portland Metro/Columbia							
Overnight	2	5	4	2	5	0	18
Day (50+ miles)	15	26	20	7	14	1	83
Local (under 50 miles)	82	194	135	35	109	9	564
Southern							
Overnight	72	3	10	15	2	7	109
Day (50+ miles)	107	24	38	25	0	13	207
Local (under 50 miles)	125	67	109	63	5	14	382
Central							
Overnight	126	5	26	22	0	16	195
Day (50+ miles)	114	16	35	15	0	11	191
Local (under 50 miles)	161	9	21	33	0	25	248
Eastern							
Overnight	52	8	17	50	3	26	156
Day (50+ miles)	49	5	12	42	4	26	139
Local (under 50 miles)	55	23	47	56	7	21	209
Mt. Hood/Gorge							
Overnight	15	9	16	8	3	4	56
Day (50+ miles)	35	35	32	9	18	3	131
Local (under 50 miles)	43	55	46	21	24	14	204
Statewide Total							
Overnight	367	107	119	125	25	74	817
Day (50+ miles)	505	283	294	156	60	90	1,386
Local (under 50 miles)	842	516	540	343	173	109	2,523
Total Trips	1,713	906	953	624	258	272	4,726

.... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-2. Saltwater Fishing Trips in Oregon by Type of Fish (in Thousands), 2008

	Salmon	Other Marine/Saltwater	Total
North Coast			
Overnight	64	11	76
Day (50+ miles)	68	35	103
Local (under 50 miles)	4	3	7
Central Coast			
Overnight	49	33	82
Day (50+ miles)	89	40	128
Local (under 50 miles)	11	1	12
South Coast			
Overnight	13	19	31
Day (50+ miles)	26	38	64
Local (under 50 miles)	4	7	11
Statewide Total			
Overnight	126	63	189
Day (50+ miles)	182	113	295
Local (under 50 miles)	20	11	31
Total Trips	328	186	514

.... Sample size too small to report data reliably.
Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

Table C-3. Shellishing Trips in Oregon by Type of Harvest (in Thousands), 2008

	Crabs	Razor Clams	Bay Clams	Mussels	Rock Scallops	Sand/Mud Shrimps	Other	Total
North Coast								
Overnight	30	19	10	1	1	1	1	63
Day (50+ miles)	26	28	7	1	0	7	4	72
Local (under 50 miles)	27	20	11	0	0	6	0	64
Central Coast								
Overnight	38	6	9	3	0	1	0	57
Day (50+ miles)	49	3	4	5	1	1	1	64
Local (under 50 miles)	34	6	7	3	0	3	0	54
South Coast								
Overnight	17	4	6	1	0	2	0	29
Day (50+ miles)	11	1	5	0	0	1	1	19
Local (under 50 miles)	28	6	12	2	0	2	0	50
Statewide Total								
Overnight	84	30	26	5	1	4	1	149
Day (50+ miles)	86	32	16	5	1	9	6	155
Local (under 50 miles)	89	32	30	5	0	11	0	167
Total Trips	259	93	72	15	2	24	7	471

.... Sample size too small to report data reliably.
Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

Table C-4. Hunting Trips in Oregon by Type of Game (in Thousands), 2008

	Deer	Elk	Other Big Game	Game Birds	Waterfowl	Wild Turkey	Other	Total
Willamette Valley								
Overnight	7	8	2	1	0	0	1	18
Day (50+ miles)	39	14	5	8	10	6	3	85
Local (under 50 miles)	136	51	18	23	46	14	7	294
North Coast								
Overnight	4	10	0	2	2	0	0	18
Day (50+ miles)	22	17	3	3	2	1	0	50
Local (under 50 miles)	15	13	2	4	2	0	0	37
Central Coast								
Overnight	3	6	2	0	0	1	0	12
Day (50+ miles)	6	7	1	4	5	0	0	23
Local (under 50 miles)	9	10	3	2	2	0	1	27
South Coast								
Overnight	1	4	1	0	0	0	1	7
Day (50+ miles)	8	5	3	2	0	0	0	19
Local (under 50 miles)	17	8	5	4	2	2	1	40
Portland Metro/Columbia								
Overnight	1	1	0	0	0	0	0	3
Day (50+ miles)	12	13	0	0	2	0	0	28
Local (under 50 miles)	58	42	5	12	26	0	2	144
Southern								
Overnight	20	15	2	6	2	2	2	49
Day (50+ miles)	39	19	9	16	6	2	2	92
Local (under 50 miles)	78	32	11	24	15	6	4	170
Central								
Overnight	18	12	2	2	1	1	2	38
Day (50+ miles)	19	14	1	7	5	2	4	52
Local (under 50 miles)	36	24	1	7	9	4	6	87
Eastern								
Overnight	53	66	10	20	6	7	7	169
Day (50+ miles)	30	30	7	28	6	5	5	111
Local (under 50 miles)	37	26	5	23	13	10	5	119
Mt. Hood/Gorge								
Overnight	4	1	0	1	0	1	1	9
Day (50+ miles)	5	3	2	3	0	1	2	15
Local (under 50 miles)	19	10	5	3	0	1	3	41
Statewide Total								
Overnight	110	123	19	32	12	12	13	322
Day (50+ miles)	181	121	32	71	37	17	15	475
Local (under 50 miles)	404	216	55	101	115	39	28	958
Total Trips	695	460	107	204	164	68	57	1,754

.... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-5. Wildlife Viewing Trips in Oregon by Type of Wildlife Viewed (in Thousands), 2008

	Birds	Land Animals*	Marine Mammals	Tidepools	Fish	Reptiles	Other	Total
Willamette Valley								
Overnight	123	114	...	...	42	18	6	316
Day (50+ miles)	163	141	...	...	27	5	5	364
Local (under 50 miles)	738	495	...	...	149	112	19	1,615
North Coast								
Overnight	259	192	87	139	86	34	0	797
Day (50+ miles)	120	104	28	28	40	16	8	344
Local (under 50 miles)	49	46	17	17	16	3	4	153
Central Coast								
Overnight	194	162	117	81	64	11	4	632
Day (50+ miles)	139	82	67	67	29	5	0	388
Local (under 50 miles)	111	63	44	40	36	4	4	301
South Coast								
Overnight	76	65	34	10	28	14	10	237
Day (50+ miles)	50	45	30	10	20	0	0	155
Local (under 50 miles)	69	46	33	25	25	10	5	214
Portland Metro/Columbia								
Overnight	85	63	...	...	6	0	0	154
Day (50+ miles)	119	96	...	...	16	8	0	239
Local (under 50 miles)	1,085	757	...	...	303	101	50	2,347
Southern								
Overnight	176	159	...	...	56	30	13	450
Day (50+ miles)	132	151	...	...	25	19	0	334
Local (under 50 miles)	451	419	...	...	63	73	31	1,048
Central								
Overnight	274	252	...	...	86	54	16	687
Day (50+ miles)	55	59	...	...	25	8	0	152
Local (under 50 miles)	167	202	...	...	63	35	0	480
Eastern								
Overnight	183	210	...	...	39	31	16	494
Day (50+ miles)	68	62	...	...	8	3	0	141
Local (under 50 miles)	170	188	...	...	23	6	6	393
Mt. Hood/Gorge								
Overnight	89	84	...	...	42	28	0	262
Day (50+ miles)	217	166	...	...	77	26	13	524
Local (under 50 miles)	192	156	...	...	82	18	18	476
Statewide Total								
Overnight	1,459	1,302	278	259	448	219	64	4,029
Day (50+ miles)	1,063	906	159	129	267	90	26	2,641
Local (under 50 miles)	3,032	2,372	208	154	761	362	138	7,027
Total Trips	5,554	4,580	645	541	1,477	671	229	13,697

* Land Animals include deer, elk, bear, squirrels, chipmunks.

... Sample size too small to report data reliably.

Note: Trip estimates are for Oregon residents and nonresidents. Detail may not add to total due to rounding.

Source: Dean Runyan Associates.

Table C-6. Days of Participation in Oregon by Type of Activitiy (in Thousands), 2008

		Fishing				
	Shellfish	Saltwater	Freshwater	Hunting	Wildlife	Total
Willamette Valley						
Overnight			277	104	947	1,327
Day (50+ miles)			173	85	364	621
Local (under 50 miles)			597	294	1,615	2,506
North Coast						
Overnight	282	319	295	103	2,392	3,391
Day (50+ miles)	72	103	216	50	344	784
Local (under 50 miles)	64	7	101	37	153	361
Central Coast						
Overnight	257	343	398	68	1,896	2,962
Day (50+ miles)	64	128	194	23	388	799
Local (under 50 miles)	54	12	132	27	301	526
South Coast						
Overnight	132	132	189	40	712	1,205
Day (50+ miles)	19	64	52	19	155	308
Local (under 50 miles)	50	11	87	40	214	401
Portland Metro/Columbia						
Overnight			74	15	463	552
Day (50+ miles)			83	28	239	350
Local (under 50 miles)			564	144	2,347	3,055
Southern						
Overnight			447	286	1,350	2,083
Day (50+ miles)			207	92	334	634
Local (under 50 miles)			382	170	1,048	1,600
Central						
Overnight			801	218	2,060	3,079
Day (50+ miles)			191	52	152	395
Local (under 50 miles)			248	87	480	815
Eastern						
Overnight			641	981	1,481	3,103
Day (50+ miles)			139	111	141	391
Local (under 50 miles)			209	119	393	721
Mt. Hood/Gorge						
Overnight			230	51	787	1,067
Day (50+ miles)			131	15	524	670
Local (under 50 miles)			204	41	476	721
Statewide Total						
Overnight	672	794	3,351	1,865	12,088	17,304
Day (50+ miles)	155	295	1,386	475	2,641	4,502
Local (under 50 miles)	167	31	2,523	958	7,027	10,508
Total Days	994	1,119	7,260	3,298	21,756	32,313

Note: Days of participation are for Oregon residents and nonresidents. Detail may not add to total due to rounding.
Source: Dean Runyan Associates.

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APPENDIX D

Detailed Questionnaires

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Dear Angler License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact anglers have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing and wildlife viewing opportunities in Oregon.

As a 2008 Oregon angler license holder, we ask that you help us by providing information about your fishing experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not yet fished in 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided.** Deadline for returning the questionnaire is October 31, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, "**Fishing Trip**" is defined as:

You left your house and during the time you were away, spent at least some time fishing before returning home; include both day and overnight trips.

1. Did you fish in Oregon during the six months from **April 2008** through **September 2008**?

   ☐ **No** **(If your answer is no, please go to question #16)**

   ☐ **Yes**

2. Did you take any **saltwater fishing trips** in Oregon **between April 2008 and September 2008?**

   ☐ **No** **(If your answer is no, please go to question #3)**

   ☐ **Yes** ➔

Number of **Overnight saltwater fishing trips**	_____# overnight trips-saltwater
Number of **day trips —50 or more miles from residence**	_____# 50+mile day trips-saltwater
Number of **local trips — less than 50 miles from residence**	_____# local trips-saltwater
Number of **Total Saltwater Fishing Days**	_____# total saltwater fishing days
Number Days using a paid guide or outfitter -saltwater trips only	_____# days using guide-saltwater trips

3. Did you take any **freshwater fishing trips** in Oregon **between April 2008 and September 2008?** ***(Please do not include any trips mentioned in Question #2)***

☐ **No**

☐ **Yes** ➔ Number of **Overnight freshwater fishing trips** _____# overnight trips-freshwater

Number of **day trips —50 or more miles from residence** _____# 50+mile day trips-freshwater

Number of **local trips — less than 50 miles from residence** _____# local trips-freshwater

Number of **Total Freshwater Fishing Days** _____# total freshwater fishing days

Number Days using a paid guide or outfitter -freshwater trips only _____# days using guide-freshwater trips

Please tell us about a **single specific overnight fishing trip** that is most typical of any overnight trips that you may have taken from April 2008 through September 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question #10a)**

4a. How many nights did you stay **overnight** in Oregon on this particular trip? _____# number of nights

4b. Using the community list on the back page (**pg. 4**), please write the **number** of the community (or nearest community) where you stayed overnight (if you stayed in more than one place please indicate your PRIMARY location):

_____ # of community

4c. Approximately how many miles, (**one way**) from your residence did you travel on this overnight trip?
_____# miles one way

4d. What type of accommodations in Oregon did you use while on this particular trip? *(Check **✓ all that apply**)*

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

5. For this overnight trip, was fishing: *(Check **✓ the one that best applies**)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

6. Which of the following best describes the people that accompanied you on this trip: *(Check **✓ the one that best applies**)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify)_____

7. How many people were in your travel group on this overnight fishing trip?
(Count yourself but do not include other families or fishing partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with fishing license
_____ # of **children** (age 17 or younger)

8. Please indicate the species fished for during this overnight trip. *(Check **✓ all that apply**)*

Freshwater		**Marine/Saltwater**	
☐ Bass/Warm water	☐ Sturgeon	☐ Halibut	☐ Salmon
☐ Salmon	☐ Trout	☐ Perch	☐ Tuna
☐ Steelhead	☐ Other _____	☐ Rock/Bottom	☐ Other_____

9. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day** (total # of people in your answer to Q.7.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Overnight Fishing Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (bait, lures, gifts, clothing, souvenirs, etc.)	☐	$ _____ per day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about a **single specific day fishing trip** that is most typical of **any** day trips that you may have taken from April 2008 through September 2008.

☐ **No Day Trips – (Please go to Question #16)**

10a. Using the community list on the back page (**page 4**), please write the **number** of the community (or closest community) to where you made the ***most*** trip-related purchases (e.g., restaurants, food stores, gasoline, etc). _____ # of community

10b. Approximately how many miles, (**one way**) from your residence did you travel on this day trip? _____ # miles one way

11. For this day trip, was fishing: *(Check ✓ **the one that best applies**)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

12. Which of the following best describes the people that accompanied you on this day trip: *(Check ✓ **the one that best applies**)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

13. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or fishing partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with fishing license
_____ # of **children** (age 17 or younger)

14. Please indicate the species fished for during this day trip. *(Check ✓ **all that apply**)*

Freshwater		**Marine/Saltwater**	
☐ Bass/Warm water	☐ Sturgeon	☐ Halibut	☐ Salmon
☐ Salmon	☐ Trout	☐ Perch	☐ Tuna
☐ Steelhead	☐ Other _____	☐ Rock/Bottom Fish	☐ Other _____

15. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day.** (total # of people in your answer to Q. 13) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Day Fishing Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (bait, lures, gifts, clothing, souvenirs, etc.)	☐	$ _____ for the day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

16. During the **six months from April 2008 through September 2008**, how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Fishing Equipment (rods, reels, poles, lines, tackle, lures, electronics, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, etc.)	☐	$ _____ total
Other Retail (processing, taxidermy costs, etc.)	☐	$ _____ total

17. Which of the following includes your total family income (before taxes) in 2007? *(Check ✓ one answer only)*

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

18. Please check your highest education level. *(Check ✓ one answer only)*

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

19. What is your preferred way of communication with ODFW for information on fishing? *(Check ✓ one answer only)*

☐ Email (please provide) _____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify) _____

Community List ➔ Use For Questions #4b and #10a

North Coast
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainier/Scappoose
31 Sauvie Island

Southern
33 Grants Pass/Cave Junction
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

Dear Hunting License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact hunters have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing and wildlife viewing opportunities in Oregon.

As a 2007 and/or 2008 Oregon hunting license holder, we ask that you help us by providing information about your hunting experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not hunted in 2007 or 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided.** Deadline for returning the questionnaire is May 19, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, "**Hunting Trip**" is defined as:

You left your house and during the time you were away, spent at least some time hunting before returning home; include both day and overnight trips.

1. Did you hunt in Oregon during the twelve months from **March 2007** through **February 2008**?

☐ **No** **(If your answer is no, please go to question # 14)**

☐ **Yes** ➔

Number of **Overnight Trips**	_____ # overnight trips
Number of **Day Trips —50 or more miles from residence**	_____ # 50+mile day trips
Number of **Local Trips — less than 50 miles from residence**	_____ # local trips
Number of **Total Hunting Days**	_____ # total days hunting
Number Days using a paid guide or outfitter	_____ # days using guide

Please tell us about a **single specific overnight hunting trip** that is most typical of any overnight trips that you may have taken from March 2007 through February 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question # 8)**

2a. How many nights did you stay **overnight** in Oregon on this particular trip? _____ # number of nights

2b. Using the community list on the back page (**pg. 4**), please write the **number** of the community (or nearest community) where you stayed overnight (if you stayed in more than one place please indicate your PRIMARY location):

_____ # of community

2c. Approximately how many miles, (**one way**) from your residence did you travel on this overnight trip?
_____ # miles one way

2d. What type of accommodations in Oregon did you use while on this particular trip? *(Check ✓ all that apply)*

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

3. For this overnight trip, was hunting: *(Check ✓ the one that best applies)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

4. Which of the following best describes the people that accompanied you on this trip: *(Check ✓ the one that best applies)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

5. How many people were in your travel group on this overnight hunting trip?
(Count yourself but do not include other families or hunting partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with hunting license
_____ # of **children** (age 17 or younger)

6. Please indicate the species hunted during this overnight trip. *(Check ✓ all that apply)*

☐ Deer ☐ Elk ☐ Other big game (specify) _____
☐ Waterfowl ☐ Upland game birds ☐ Wild turkey ☐ Other (specify) _____

7. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day** (total # of people in your answer to Q. 5.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Overnight Hunting Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (ammunition, game bags, gifts, clothing, souvenirs, etc.)	☐	$ _____ per day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about a **single specific day hunting trip** that is most typical of **any** day trips that you may have taken from March 2007 through February 2008.

☐ **No Day Trips – (Please go to Question # 14)**

8a. Using the community list on the back page (**page 4**), please write the **number** of the community (or closest community) to where you made the ***most*** trip-related purchases (e.g., restaurants, food stores, gasoline, etc). _____ # of community

8b. Approximately how many miles, (**one way**) from your residence did you travel on this day trip? _____ # miles one way

9. For this day trip, was hunting: *(Check ✓ the one that best applies)*

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

10. Which of the following best describes the people that accompanied you on this day trip: *(Check ✓ the one that best applies)*

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

11. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or hunting partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with hunting license
_____ # of **children** (age 17 or younger)

12. Please indicate the species hunted during this day trip. *(Check ✓ all that apply)*

☐ Deer ☐ Elk ☐ Other big game (specify)_____
☐ Waterfowl ☐ Upland game birds ☐ Wild turkey ☐ Other (specify) _____

13. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day**.
(total # of people in your answer to Q. 11) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Single Specific Day Hunting Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (ammunition, game bags, gifts, clothing, souvenirs, etc.)	☐	$ _____ for the day
Other Recreation & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

14. During the **twelve months from March 2007 through February 2008**, how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check ✓ "**No Expenses**" if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Hunting Equipment (firearms, bows/arrows, telescopic sights, decoys, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, etc.)	☐	$ _____ total
Other Retail (meat processing, taxidermy costs, etc.)	☐	$ _____ total

15. Which of the following includes your total family income (before taxes) in 2007? *(Check ✓ one answer only)*

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

16. Please check your highest education level. *(Check ✓ one answer only)*

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

17. What is your preferred way of communication with ODFW for information on hunting? *(Check ✓ one answer only)*

☐ Email (please provide) _____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify)

Community List ➔ Use For Questions # 2b and # 8a

North Coast
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainier/Scappoose
31 Sauvie Island

Southern
33 Grants Pass/Cave Juncti
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

If there is anything else that you would like to share with ODFW, please use the space below:

_____

_____

_____

Dear Shellfish License Holder:

The Oregon Department of Fish and Wildlife and the Oregon Tourism Commission are sponsoring an economic survey on the importance of wildlife related recreation to Oregon's economy. Information gathered from this survey will help increase the understanding of the economic impact that crabbing, clamming and other shellfishing have on Oregon's economy. The results will also help ODFW, the Oregon Fish and Wildlife Commission and local governments to more accurately identify the potential economic impacts of changes in wildlife management activities and will help ensure continued hunting, fishing, shellfishing, and wildlife viewing opportunities in Oregon.

As a 2007 and/or 2008 Oregon shellfish license holder, we ask that you help us by providing information about your shellfishing experience(s) in Oregon. The answers you supply will be used for statistical purposes only and will be kept strictly confidential.

Your thoughtful responses to the survey questions are important and **even if you have not taken a crab, clam or other shellfish trip in 2007 or 2008, please complete the applicable question(s) and return the survey in the prepaid envelope provided**. Deadline for returning the questionnaire is October 20, 2008.

Thank you in advance for taking the time to thoughtfully complete this survey.

Sincerely,

Roy Elicker

Roy Elicker
Director of ODFW

For the purposes of answering the following questions, **"Crab, Clam or Other Shellfish Trip"** is defined as:

You left your house and during the time you were away, spent at least some time shellfishing before returning home; include both day and overnight trips.

1. Did you participate in crabbing, clamming or other shellfish harvesting in Oregon during the twelve months from **September 1, 2007 through September 1, 2008?**

☐ **No** **(If your answer is no, please go to question # 14)**

☐ **Yes** ➔

Number of **Overnight Trips**	_____ # overnight trips
Number of **Day Trips —50 or more miles from residence**	_____ # 50+mile day trips
Number of **Local Trips — less than 50 miles from residence**	_____ # local trips
Number of **Total Shellfish Days**	_____ # total days shellfishing
Number Days using a paid guide or outfitter	_____ # days using guide

Please tell us about a **single specific overnight crab, clam or other shellfish trip in Oregon** that is most typical of any overnight trips that you may have taken from September 1, 2007 through September 1, 2008.

☐ **No Overnight Trips – (If your answer is no, please go to question # 8)**

2a. How many nights did you stay **overnight** in Oregon on this particular trip? _____ # number of nights

2b. Using the community list on the back page **(page 4)**, please write the **number** of the community (or closest community) where you stayed overnight: (if you stayed in more than one place please indicate your PRIMARY location)

_____# of community

2c. Approximately how many miles, **(one way)** from your residence did you travel on this overnight trip?
_____ # miles one way

2d. What type of accommodations in Oregon did you use while on this particular trip? (Check ***✓ all that apply***)

☐ Hotel, motel, lodge, bed and breakfast, rented home/cabin ☐ Home of friends/relatives
☐ Your own second home ☐ Campground/camping

3. For this overnight trip, was shellfishing? (Check ***✓ the one that best applies***)
☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

4. Which of the following best describes the people that accompanied you on this trip? (Check ✓ ***the one that best applies***)
☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify) _____

5. How many people were in your travel group on this overnight shellfishing trip?
(Count yourself but do not include other families or partners/buddies who paid their own expenses.)
_____ # of **adults** (age 18 years or older) ➔ _____ # adults with shellfish license
_____ # of **children** (age 17 or younger)

6. Please indicate the species harvested during this overnight trip: (Check ***✓ all that apply***)
☐ Crabs ☐ Bay clams ☐ Razor clams ☐ Sand/mud shrimp
☐ Mussels ☐ Abalone ☐ Rock scallops ☐ Other (specify) _____

7. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for an average day.**
(total # of people in your answer to Q. 5) Please check ✓ **"No Expenses"** if you had no expenses for an item.

Single Specific Overnight Shellfishing Trip Expenses	No Expenses	Average Expenses per travel group
Accommodations (hotel, motel room rentals, campground fees)	☐	$ _____ per day
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ per day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ per day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ per day
Other Retail (bait, traps, gifts, clothing, souvenirs, dive shop, etc.)	☐	$ _____ per day
Other Recreational & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ per day
Airfare (please provide **total roundtrip airfare** paid)	☐	$ _____ total amount
Paid Guide, Charter or Outfitter Fees (total paid on this trip)	☐	$ _____ total amount

Please tell us about **a single specific crab, clam or other shellfish day trip** that is most typical of **any** day trips that you may have taken from September 1, 2007 through September 1, 2008.

☐ **No Day Trips – (Please go to Question # 14)**

8a. Using the community list on the back page **(page 4),** please write the **number** of the community (or closest community) to where you made the *most* trip-related purchases (e.g., restaurants, food stores, gasoline, etc.) _____ # of community

8b. Approximately how many miles, **(one way)** from your residence did you travel on this day trip? _____ # miles one way

9. For this day trip, was shellfishing? (Check ✓ ***the one that best applies***)

☐ Primary reason for trip ☐ One of several reasons for this trip ☐ An incidental activity while on this trip

10. Which of the following best describes the people that accompanied you on this day trip? (Check ✓ ***the one that best applies***)

☐ My immediate family only ☐ Other adult friend(s) ☐ Multiple families ☐ Just myself
☐ Other (specify)_____

11. How many people were in your travel group on this day trip?
(Count yourself but do not include other families or partners/buddies who paid their own expenses.)

_____ # of **adults** (age 18 years or older) ➔ _____ # adults with shellfish license
_____ # of **children** (age 17 or younger)

12. Please indicate the species harvested during this day trip: (Check ✓ ***all that apply***)

☐ Crabs ☐ Bay clams ☐ Razor clams ☐ Sand/mud shrimp
☐ Mussels ☐ Abalone ☐ Rock scallops ☐ Other (specify) _____

13. Please estimate the dollar amount spent by **the group you traveled with that shared expenses for the day.**
(total # of people in your answer to Q. 11) Please check √ **"No Expenses"** if you had no expenses for an item.

Single Specific Day Shellfishing Trip Expenses	No Expenses	Average Expenses per travel group
Restaurants/Bars/Lounges (food/drink in restaurants and nightclubs, bars)	☐	$ _____ for the day
Groceries, snacks (groceries, liquor, and snacks/food from a store)	☐	$ _____ for the day
Fuel/Gas/Transportation/Parking (car rental, fuel/gas for auto/boat/truck)	☐	$ _____ for the day
Other Retail (traps, bait, gifts, clothing, souvenirs, dive shop, etc.)	☐	$ _____ for the day
Other Recreational & Entertainment (access fees, boat rental, admission fees, golf, etc.)	☐	$ _____ for the day
Paid Guide, Charter or Outfitter Fees	☐	$ _____ for the day

14. During the **twelve months from September 1, 2007 through September 1, 2008,** how much did **your household spend in total in Oregon** for the following items?
(Please estimate the dollar amount as closely as possible.) Please check √ **"No Expenses"** if you had no expenses for an item.

Total Household Expenditures	No Expenses	Expenses per household
Shellfish Equipment (traps, buoys, shovel, rakes, nets, clam bags, rings, etc.)	☐	$ _____ total
Clothing (waders, boots, vests, raingear, hats, gloves, etc.)	☐	$ _____ total
Related Equipment (camping equipment, safety gear, etc.)	☐	$ _____ total
Specialized Equipment (boats, campers, ATV, SCUBA, etc.)	☐	$ _____ total
Other Retail (meat processing, propane, etc.)	☐	$ _____ total

15. Which of the following includes your total family income (before taxes) in 2007? (Check ***✓ one answer only***)

☐ Under $25,000 ☐ $25,000-$49,999 ☐ $50,000-$74,999 ☐ $75,000-$99,999 ☐ $100,000 or more

16. Please check your highest education level: (Check ***✓ one answer only***)

☐ Some high school or high school diploma
☐ Some college or 2-year degree
☐ Bachelors degree
☐ Advanced degree

17. What is your preferred way of communication with ODFW for information on shellfishing? (Check ***✓ one answer only***)

☐ Email (please provide)_____
☐ ODFW printed brochures or publications
☐ Information at license vendors
☐ ODFW Website
☐ Direct Mail
☐ Other (specify) _____

Community List ➔ Use For Questions # 2b and # 8a

North Coast
1 Astoria/Warrenton
2 Cannon Beach
3 Manzanita/Nehalem
4 Seaside/Gearhart
5 Tillamook/Netarts/Bay City
6 Pacific City

Central Coast
7 Florence/Dunes City
8 Lincoln City/Depoe Bay
9 Newport/Waldport/Yachats
10 Reedsport

South Coast
11 Bandon
12 Brookings
13 Coos Bay/North Bend
14 Gold Beach/Port Orford

Willamette Valley/Cascades
15 Albany/Lebanon
16 Corvallis/Philomath
17 Dallas/Monmounth
18 Detroit
19 Eugene/Springfield/Cottage Grv.
20 McMinnville/Newberg
21 Molalla
22 Oakridge/Westfir
23 Salem/Keizer
24 Silverton/Mt. Angel
25 Sweet Home/Mill City

Portland Metro/Columbia
26 Beaverton/Hillsboro/Tigard
27 Forest Grove/Banks
28 Oregon City/Wilsonvillle
29 Portland/Gresham
30 St. Helens/Rainer/Scappoose
31 Sauvie Island

Southern
32 Gold Hill/Rogue River
33 Grants Pass/Cave Junction
34 Klamath Falls
35 Lakeview/Paisley
36 Medford/Ashland
37 Roseburg/Canyonville

Central
38 Bend/Redmond
39 Madras/Metolius
40 Maupin
41 Prineville
42 Sisters

Mt. Hood/Gorge
43 Hood River/Cascade Locks
44 Sandy/Estacada/Welches
45 The Dalles
46 Troutdale

Eastern
47 Arlington/Condon
48 Baker City
49 Boardman/Heppner
50 Burns/Hines
51 Enterprise/Joseph
52 Fossil/Mitchell
53 John Day/Prairie City
54 La Grande/Elgin
55 Ontario/Vale
56 Pendleton/Hermiston
57 Wasco/Moro/Grass Valley

APPENDIX E

Sample Design

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Sample Design

Appendix E describes the sampling design for the study and describes the approach taken to produce findings from the completed questionnaires. For each recreation activity, the sample design and timing of the questionnaire mailings and telephone interviews (in the case of wildlife viewing participants) was designed to provide the seasonal data most appropriate to represent each recreation activity, which was then reported as findings for calendar year 2008.

Fishing

The sample of self-administered questionnaires for fishing was mailed in two waves in order to collect detailed data for a twelve-month period October, 2007 through September, 2008: First, in May, 2008 for activity that occurred from October, 2007 - March, 2008 (fall/winter season), and next in November, 2008 for activity that occurred from April - September, 2008 (spring/summer season). The sample was randomly selected from the ODFW fishing license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 24,911 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW fishing license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 4,533 questionnaires were returned for a response rate of 18 percent.

Hunting

The sample of self-administered questionnaires for hunting was mailed in one wave (in March, 2008) to collect detailed data for hunting activity that occurred during the twelve-month period from March 2007 through February 2008. The sample was randomly selected from the ODFW hunting license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 19,833 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW hunting license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 5,200 questionnaires were returned for a response rate of 26 percent.

Wildlife Viewing

The sample was selected through a random digit-dial telephone survey (to include non-listed and unpublished telephone numbers) of Oregon resident 18 years and older. The sample of telephone interview was conducted in four waves to coincide with each season with the first wave conducted in March, 2008 to capture wildlife viewing activity during the winter months of the year (Dec.-Feb.), the second wave conducted in June, 2008 to capture spring activity (Mar.-May), the third wave conducted in September, 2008 to capture summer activity (Jun.-Aug.), and the final wave conducted in December, 2008 to capture fall activity (Sep.-Nov.). A sample of 1,624 Oregon residents agreed to be interviewed and 1,000 interviews were completed for a response rate of 62%. In addition, the sample was stratified geographically in order to obtain a representative sample of residents throughout the state.

Shellfishing

The sample of self-administered questionnaires for shellfish harvesting was mailed in one wave (in September, 2008) to collect detailed data for shellfish harvest activity that occurred during the twelve-month period from September 2007 through August 2008. The sample was randomly selected from the ODFW shellfish license database after adjusting in order to eliminate duplicate mailing addresses. A sample of 3,224 questionnaires was received (via mail) by Oregon residents and nonresidents from the ODFW hunting license database. The sample was stratified in order to obtain a reliable sample of *both* Oregon residents and nonresidents. Approximately 1,000 questionnaires were returned for a response rate of 35 percent.

Geographic Allocation

Detailed findings for number of trips, days of participation, and expenditures are based on an allocation of the total number of trips taken during twelve-month period, as reported by the participants. Trip expenditure data was applied to locations throughout the state (regions and counties) based on the community (or nearest community) reported for as the primary location where participant spent the night overnight stay or in the case of day trip, the community where the most trip-related purchases were made.

Confidence levels

Generally, representative samples of 1,000 or more provide very reliable results. Confidence levels for respondent segments are shown in the table below.

Segment	Sample Size	Confidence Level (%)	
		90% Level (+/-)	95% Level (+/-)
Hunters	5,200	1.2	1.4
Fishers	4,533	1.3	1.5
Shellfishers	1,122	2.6	3.0
OR Households	1,000	2.6	3.1

Nonresponse Bias

The effect of nonresponse error was measured directly through the use of telephone interviews for each of the three recreation activities that were reported through use the self administered questionaires (fishing, hunting, and shellfishing). Telephone interviews were conducted for a random sample of nonrespondents (those who did not return a questionnaire) for each of the three segments. The sample of nonrespondents was 200 for fishing and hunting, and 100 for shellfish harvesting. Overall, responses for each of these groups were similar, in terms of trip characteristics and expenditures, to those reported by the initial respondents. Through these telephone interviews, additional detail was gathered with regard to where to the allocation of expenditures -- before, during, or in the community closest to where the recreation activity occurred. The additional information was used to allocate expenditures at the regional and county-level.

Delivered via email on August 25, 2026

August 24, 2026

Re: Illinois River and Rough and Ready Creek Watersheds Oregon Resource Waters Advisory Committee, Written Comments

Mr. Aron Borok, and the Oregon Department of Environmental Quality:

On behalf of Patriot Nickel Corp, we thank the Department of Environmental Quality for the opportunity to participate in the Outstanding Resource Water designation rulemaking for the Illinois River and Rough and Ready Creek watersheds. This proposal risks deterring the kind of economic investment this region needs most right now, and we appreciate the seriousness with which DEQ and the Rulemaking Advisory Committee have approached it to date.

Southern Oregon is defined by the same qualities that make this rulemaking possible in the first place: water of exceptional clarity, a river system that sustains a thriving outdoor recreation economy, and a landscape worth protecting. Patriot Nickel has no interest in seeing that water quality diminished, and our future in this region depends on maintaining the same watershed integrity for which the nominating organizations are advocating. **Where we differ is not on the goal of preserving the area water quality, but on whether a categorical designation of this kind, that effectively eliminates the region's ability to have responsible economic advancement, is the right tool to achieve it and whether it is needed at all.** Southern Oregon's mineral resources represent a substantial, currently untapped multi-generational opportunity to diversify and strengthen the region's economy, one that need not come at the expense of the water quality DEQ aims to protect. We believe that Southern Oregon can have both high-quality water and a strong economy to support it.

Based on our review of the draft rule language, the draft Fiscal Impact Statement, and the discussion at the Committee's second meeting, we remain unconvinced that this designation responds to any identified or documented threat to water quality in either watershed, beyond natural causes such as wildfire that no regulatory designation can prevent. We are concerned that a rulemaking of this permanence is moving forward, without the thorough fiscal, ecological, and legal groundwork that it warrants.

The comments below set out clearly our specific concerns with the proposed statutory language and the draft Fiscal Impact Statement. We respectfully ask that DEQ weigh them carefully as the process continues, and we welcome the chance to keep engaging constructively.

Draft Statute Language

"OAR 340-041-0275(4) The following waters are designated as Outstanding Resource Waters of Oregon (ORWs): …

(b) Rough and Ready Creek

(A) All of Rough and Ready Creek including Rough and Ready Lake.

(B) All tributaries, springs, associated wetlands and other waters of the Rough and Ready Creek watershed, excluding the reach of Parker Creek from its boundary with the Rogue-River Siskiyou National forest downstream to its confluence with Rough and Ready Creek."

DEQ has already established a workable model for this kind of designation, and we would encourage the agency to follow it here. The North Fork Smith River's Outstanding Resource Water designation, at OAR 340-041-0305(4), does not rely on the catch-all reference to "all tributaries." It names each tributary while preserving flexibility for DEQ and stakeholders alike through non-exhaustive framing ("include but are not limited to"). We ask that the same approach be applied to Rough and Ready Creek: identify the known perennial tributaries, named springs, and mapped wetlands of the watershed, using that same non-exhaustive language if DEQ wishes to preserve coverage of features not yet identified. After all, one could argue that every piece of land drains into another and eventually into a named creek or river— therefore impacting all of Southern Oregon.

The Rough and Ready Creek nomination letter itself acknowledges that "most springs, the wetlands they form, and other waterbodies in Rough and Ready Creek's [watershed] have not been mapped." If the nominating organizations and the state do not yet know where many of these features are, it is difficult to see how any party could reliably determine in advance whether a proposed activity would degrade water quality within the designated ORW. A designation that cannot be located on the ground is a designation that cannot be complied with, and one that leaves everyone worse off, DEQ exposed to inconsistent enforcement, stakeholders to unpredictable outcomes, and the resource itself to protection that exists on paper but without a defined boundary in practice.

> **We suggest that the mapping and identification work the nomination letter itself calls for be substantially completed, or at minimum incorporated into the rule through a defined and named list similar to OAR 340-041-0305(4), before the designation is finalized.**

Fiscal Impact Statement

Local Government Impact

This is the first Outstanding Resource Water designation in Oregon's history to place an incorporated municipality's permitted wastewater discharge inside, or immediately upstream of, a designated ORW. Given that precedent, we find the draft Fiscal Impact Statement's treatment of "Local Government" impact strikingly thin for a scenario this novel, and we address it alongside our comments on the FIS's "Public" impact finding below, where we believe the more significant analytical gap lies.

Setting that gap aside for now, we would ask DEQ to expand the Local Government Impact section to address, at a minimum, the following foreseeable scenarios for the City of Cave Junction and its neighbors:

- **If seasonal effluent discharge to the Illinois River becomes infeasible, or a new or expanded NPDES permit is otherwise needed for the wastewater treatment plant, would the ORW designation's prohibition on new or increased discharges restrict the City's ability to obtain that permit**— and if so, would the City be pushed toward alternative disposal methods (land application, storage, or an underground injection well under a WPCF permit), or toward potential ORW violations and associated penalties?
- The FIS notes the plant is currently operating at 44 percent of wet-weather and 40 percent of dry-weather design capacity. **What happens when population growth in Cave Junction, or increased demand from surrounding areas, eventually requires the City to increase its design flow?** If the FIS's conclusions depend on the plant remaining near current capacity indefinitely, that assumption should be stated and tested, not left implicit.
- **Has DEQ analyzed how this designation would affect the unincorporated communities of Selma and Kerby, both located along the Highway 199 corridor bordering the nominated watershed?** Neither is currently served by Cave Junction's municipal system, but both are populated, growing, and sited on the same serpentine, low-permeability soils that limit septic performance elsewhere in the valley. If either community's water or wastewater needs eventually require interconnection with, or independent permitting near, the ORW, the FIS should say so now and estimate the cost, rather than leave it for a future rulemaking that treats the ORW boundary as already settled.

We raise these questions because a fiscal impact statement that leaves the most direct and foreseeable local government cost and impact in this rulemaking largely unexamined is not fully analyzed and complete.

Public Impact

The current draft of the Fiscal Impact Statement contradicts itself on this point. Under "Local governments," the FIS acknowledges that "there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers." Yet directly below, under "Public," the same document states: "DEQ does not expect a fiscal impact to the public as a result of this rule." Cave Junction's ratepayers are members of the public. A cost imposed on them through their utility bill is, by definition, a fiscal impact on the public, and DEQ cannot credibly disclaim one while acknowledging the other in the same document.

That analysis matters more here than it would in most rulemakings, because Cave Junction is not a typical tax base. The FIS's own environmental justice section acknowledges that the city's supplemental demographic index ranks worse than 80–90 percent of the United States, driven by

high unemployment and an aging population. Independent Census[1] data confirms the same picture in dollar terms: Cave Junction's median household income runs around $39,000, less than half of Oregon's statewide median of roughly $88,700, and more than a quarter of residents live below the federal poverty line. This is, by DEQ's own admission elsewhere in the FIS, one of the more economically fragile communities affected by this rulemaking, and it is also the one community whose municipal infrastructure sits closest to, and most directly implicated by, the proposed designation.

The economics of small utility systems make this worse, not better. Research on water and wastewater affordability consistently finds that per-household costs rise as system size shrinks: EPA's 2024 Water Affordability Needs Assessment[2] cites peer-reviewed findings that "affordability improves significantly as utility size increases," and points to one state rate assessment in which small community water systems charged more than 50 percent more per household than larger systems for the same service. Cave Junction's wastewater utility, serving a small and largely fixed customer base, has little ability to absorb or spread the cost of alternative treatment, storage, or disposal infrastructure if the ORW designation forecloses its current discharge option. Any such cost will land on a tax base that, by DEQ's own data, is already among the least able in the state to bear it.

> We raise this because a fiscal impact statement is supposed to tell decision-makers and the public who actually pays, and on the one occasion this FIS identifies a concrete, foreseeable cost, it simultaneously declares in the very next section that no such cost exists. **We would ask DEQ to reconcile the two findings and give the potential impact to Cave Junction's ratepayers the seriousness a fiscal impact statement is meant to provide.**

Large/Small Business Impact

There are various businesses adjacent to the proposed designation boundaries, and possibly within, that have existing water rights. We'd be interested to know 1) if and how this designation would affect them, and 2) if there has been proper correspondence and outreach to these parties for engagement in the statute and FIS.

Additionally, we believe there are two vital gaps that run through this section of the draft Fiscal Impact Statement, and we'd ask DEQ to address both before the rule advances.

First, while the FIS carefully accounts for the roughly 2,300 acres of industrial forestland within the watersheds, concluding that continued timber harvest is unaffected because it is already governed by the Forest Practices Act and the forthcoming Rogue River Temperature TMDL, it does not once mention that these same watersheds sit atop some of Oregon's most significant laterite nickel deposits, deposits Patriot Nickel holds active mining claims to develop, which are not newly asserted interests. Patriot Nickel's mining claims in this watershed predate the 2015 Southwestern Oregon Mineral Withdrawal and were grandfathered in as valid existing rights when that withdrawal

took effect— meaning federal law has already recognized and preserved our right to develop these deposits, even as the surrounding land was set aside from new mineral entry. **The FIS carefully accounts for the existing interests of the timber industry and gives full effect to the goals of the nominating conservation organizations; therefore we believe our long-established mineral rights in this same watershed deserve no less consideration in this analysis.**

A FIS that inventories the forestry industry's stake in this land but omits the mineral industry has not accounted for the full range of large-business interests this rule affects, in a region that has had little industrial investment to account for since the decline of its timber industry.

Second, and more fundamentally, the FIS performs no opportunity-cost analysis at all. It quantifies, in real dollars, what the economic impact of tourism is for the region but quantifies nothing about what the region stands to lose if a mineral development pathway is foreclosed. That asymmetry matters in a document whose stated purpose is to weigh fiscal and economic impact, particularly given that both nominating organizations identified the prospect of mining, not any existing or observed water quality problem, as the central rationale for this designation. **If mining is significant enough to justify the rule, it is significant enough to appear in the fiscal analysis of it.**

Based on initial independent third-party analysis of the four Patriot Nickel claim sites that sit within the nominated ORW boundary, the numbers this designation puts at risk are not marginal. Site development, civil works, buildings, power infrastructure, communications, and equipment fleet procurement across the four sites represent an estimated $200 to $240 million in direct capital investment, nearly all of it spent locally, including through regional heavy-equipment dealers who would supply and service the fleet. Once operating, those same four sites represent an estimated $80 to $120 million in direct annual spending on payroll, local supplies, fuel, power, utilities, and haulage. Unlike the tourism revenue the FIS values at $155 million annually for the region, revenue that necessarily ebbs and flows with the season, this spending would recur every year for the projected 40- to 50-year productive life of the mines. Even without adjusting for inflation, growth, or the time value of money, that means the annual operating spending alone could total somewhere between $3.2 billion and $6 billion over the life of these operations: a sustained, multi-generational economic presence in a county that has not seen investment at this scale since before the timber industry's decline.

The employment picture tells the same story. We project approximately 45 to 50 direct front-line employees at each of the four sites, plus roughly 20 central office and staff positions, for a combined direct workforce of approximately 200 to 220 employees sustained for the life of the mines, before counting the estimated 300 to 500 construction and construction-related jobs the build-out phase alone would support. Front-line mining jobs of this kind are, by national and regional experience, easy-entry, high-earning roles that do not require a four-year degree, exactly the kind of accessible, family-wage employment pathway a rural county needs most. Using the National Mining Association[3] industry-wide average, 1.72 indirect and induced jobs supported for

every direct mining job, based on the association's 2023 national data, direct employment at these four sites alone would be expected to support roughly 340 to 380 additional local jobs in trucking, equipment supply, hospitality, and other regional services. That is before counting the refinery facility we are separately evaluating outside the ORW boundary, whose own viability depends on ore sourced from within it, and which represents a further $300 to $400 million in direct construction spending and $10 to $20 million in annual operating spending on its own.

We recognize these are forward-looking projections, but they are not speculative in the sense of being untested. The Eagle Mine in Marquette County, Michigan, the only other primary nickel mine currently operating in the United States, directly employs roughly 200 workers at an average regional mining wage of $117,000, more than double the county's average wage for all jobs, and mining today makes up roughly a fifth of that county's total economy following a decline in the area's own historic timber industry[4]. We offer that as a scale comparison, not a substitute for Josephine County's specific circumstances, ore body, mine design, and regional economics all differ. But it demonstrates that investment of this magnitude and duration from a modern U.S. nickel operation is a documented outcome elsewhere, not a hypothetical one.

Southern Oregon's own history makes the same point more directly. The Riddle Mine, operated for 44 years as the Hanna Nickel Smelting Company's Nickel Mountain operation, demonstrates that a project of this scale is not foreign to this part of the state, but a proven regional outcome. At its peak it directly employed approximately 500 people annually, producing an average of roughly 12,000 to 13,000 tons of nickel metal each year from laterite ore averaging approximately 1.4% nickel—worth, at today's nickel price of approximately $7.50 per pound, roughly $200 to $225 million in annual in-situ metal value, or $8.8 to $9.9 billion cumulatively over the life of the operation. That steady, year-round employment drew workers and their families to the area, generating sustained local demand for housing, services, and small businesses for nearly half a century.

> **We'd respectfully request that DEQ take into consideration the full spectrum of fiscal impact that this designation would represent because a fiscal impact statement that puts a real number on the revenue of one kind of economic activity and no number at all on the cost of foreclosing another has not actually weighed the fiscal impact of the rule.** Additionally, we'd like to note that the revenue a mining project could generate for the area has the potential to complement, not diminish or deter, the existing revenues from tourism in the area.

Environmental Justice

"Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener indicated that the supplemental demographic index was worse than 80-90% of the US. This is primarily driven by high levels of unemployment and an older population."

DEQ's own analysis establishes that this region qualifies as an environmental justice community in the fullest sense the term carries under Oregon law. ORS 182.535 defines an "environmental justice community" to include "communities experiencing lower incomes" and "rural communities" specifically. By DEQ's own admission in this FIS, Cave Junction and the surrounding area meet that definition on economic grounds alone, independent of any pollution-exposure analysis.

That framing raises the actual question we ask DEQ to answer: environmental justice, as Oregon defines it, is not only about shielding a vulnerable community from environmental burdens. It is also about fair treatment in the decisions that shape its economic future. This region has already lived through the foreclosure of one resource-based industry. This rulemaking, without ever analyzing the tradeoff, would foreclose a second in a county the agency itself has flagged as economically fragile— while, as detailed in our comments on the FIS's "Public" impact finding, simultaneously raising the prospect of higher utility costs for the same residents if Cave Junction's wastewater treatment plant eventually needs upgrading.

An environmental justice community, by DEQ's own designation, would face costs rising and opportunity narrowing at the same time under this rule, and neither half of that ledger appears in the FIS's environmental justice analysis.

> **We ask DEQ to explain how declining to weigh that combined effect is consistent with the fair-treatment principle the statute is built on: whether "fair treatment" of an EJ community can mean it pays more and gains less, in the same rulemaking, without either cost ever being examined.**

General Concerns & Considerations

The vast majority of land within these watersheds is not privately held or state-managed, it is managed by the U.S. Forest Service and the Bureau of Land Management. The Illinois River watershed alone includes roughly 306,000 acres managed by the Rogue River-Siskiyou National Forest and another 8,000 acres managed by BLM's Medford District, together comprising approximately 81 percent of the basin; the Rough and Ready Creek watershed is almost entirely federal, with BLM managing its lowest reach as an Area of Critical Environmental Concern and the Forest Service managing the remainder.

> We recognize that ORS 183.335 does not require DEQ to prepare a fiscal impact statement for federal land management agencies, but given that these two federal agencies manage the overwhelming majority of the land this designation would affect, **we believe it would be prudent, and consistent with the spirit of a complete fiscal analysis, for DEQ to include some assessment on how the proposed designation would affect USFS and BLM's responsible forest management practices and plans, even where the statute does not compel it.**

Additionally, in most mountainous regions, natural causes (wildfire, landslide, debris flow) can significantly affect the water quality of rivers, tributaries, and wetlands, independent of any human activity. This is not hypothetical in these particular watersheds: the Rough and Ready Creek nomination letter itself acknowledges that most of the creek is already 303(d)-listed for temperature, and that the U.S. Forest Service attributes the elevated temperatures to natural conditions rather than human activity, even though roughly 90 percent of the watershed is wilderness or inventoried roadless area. A documented water quality impairment already exists today, in a watershed with essentially no industrial development, which means the mechanism DEQ uses to distinguish natural degradation from a permit violation is not an abstract question, but one this rulemaking should answer before, not after, a dispute arises.

Given this, we ask DEQ to clarify the following questions:

- **How does the agency investigate a suspected degradation event within an ORW and determine whether it was caused by natural conditions, an existing NPDES or WPCF permit holder, or some other source?** These watersheds present a genuinely difficult attribution problem: remote and largely roadless terrain, a braided and dynamic channel system across Rough and Ready Creek's alluvial fan, extensive hyporheic exchange between surface water and groundwater, and a documented history of both natural sediment events and naturally elevated temperatures.
- Against that backdrop, **what specific methodology, monitoring baseline, or standard of evidence would DEQ apply to trace a detected exceedance to a particular discharge**, as opposed to the same natural variability the record already documents in these watersheds?
- **Is this determination complaint-driven, and if so, would an increase in complaints carry a fiscal impact to DEQ that the FIS should account for?** The FIS states, under "State agencies," that DEQ anticipates "few direct impacts" from this rule and expects any new antidegradation analysis to require "little to no additional staff time." That conclusion does not appear to account for the investigative workload of fielding and resolving complaints in a newly designated ORW, particularly one whose nomination was driven by organized advocacy groups likely to remain engaged in monitoring it going forward. If enforcement here is complaint-driven, we would ask DEQ to estimate that workload and disclose it as part of the statutorily required cost of compliance to the agency itself, rather than let the FIS's "few direct impacts" finding stand as the final word on DEQ's own fiscal exposure.

Conclusion

We thank DEQ and the Rulemaking Advisory Committee again for the time and care this process has already required, and for the opportunity to be part of it. Nothing in the comments above is offered in opposition to protecting the water quality of the Illinois River or Rough and Ready Creek, a goal Patriot Nickel shares and one our own operations would be required to meet under existing environmental and antidegradation law whether or not this designation is adopted.

While we believe this designation is unnecessary given the environmental protections that already govern any future development in this watershed, these comments are offered in the narrower spirit of getting the details right before a determination of this scale and permanence proceeds: statutory language precise enough to be located and complied with, a fiscal impact analysis that accounts for the full range of parties and costs this rule touches, and an enforcement framework capable of telling the natural processes already at work in these watersheds apart from any genuine threat to their water quality. As these comments have detailed, a designation of this magnitude carries real fiscal and social costs for the local community, particularly where it would foreclose responsible development in areas that would not compromise the water quality this rule is meant to protect, and we ask that DEQ examine those costs in full before the rulemaking proceeds.

We would welcome the opportunity to discuss these comments further with DEQ and the Committee as the rulemaking moves forward, and we remain committed to engaging constructively and in good faith throughout whatever process follows.

Sincerely,

Jeffrey Strobel
CEO, Patriot Nickel Corporation

[1]Oregon Employment Department, QualityInfo, "A Closer Look at Oregon's Median Household Income." https://www.qualityinfo.org/-/a-closer-look-at-oregon-s-median-household-income

[2] U.S. Environmental Protection Agency, 2024. *Water Affordability Needs Assessment: Report to Congress*. December 2024.https://www.epa.gov/system/files/documents/2024-12/water-affordability-needs-assessment.pdf

[3]National Mining Association, 2024. *The Economic Contributions of U.S. Mining* (2023 data one-pager). https://friendsofcoalwest.org/wp-content/uploads/2024/12/economic-contributions_2023_data_onepager.pdf

[4]Tran, Tu-Uyen, 2025. "A Fifth of This Upper Peninsula Community's Economy Is Mining. Can It Diversify?" Federal Reserve Bank of Minneapolis, June 4, 2025. https://www.minneapolisfed.org/article/2025/a-fifth-of-this-upper-peninsula-communitys-economy-is-mining-can-it-diversify

In response to DEQ's request to evaluate the cost of extraction operations without an NPDES permit under the proposed ORW, we asked our third-party engineering consultants to evaluate a zero-discharge approach, in which all contact water would be captured, stored, and evaporated on site.

While this approach is technically possible, their analysis shows it would be financially infeasible and could introduce environmental risks that work against the shared goal of protecting these watersheds.

SITE CONDITIONS

The project area receives approximately 60-65 inches of precipitation per year, most of it between October and May. Zero-discharge operations have been implemented successfully in more arid climates, but this volume of rainfall presents a very different water management challenge.

Our consultants modeled one site, assuming roughly 1,000 acres of disturbed land requiring water collection. **Because precipitation is consistent across the region, that analysis applies to each of our four mining claims within the proposed ORW area.**

WATER MANAGEMENT REQUIREMENTS

Requirement	Per site
Annual water collection	Approximately 5,200 acre-feet, primarily October through May
Minimum storage	Approximately 4,700 acre-feet for a single year of accumulation, after natural evaporation offsets only 20-35 inches of annual precipitation
Impoundment footprint	Approximately 300-350 acres of additional disturbance for lined ponds at a 20-foot depth; more capacity required if water is not fully removed each year
Mechanical evaporation	Approximately 400 evaporator units operating June through September
Power	An estimated 15-20 megawatts, from extended grid power or diesel generation

COST ESTIMATES

Cost item	Per site	Across four claims
Lined impoundments	$200M - $400M*	$800M - $1.6B*
Mechanical evaporators	$100M - $250M**	$400M - $1B**
Annual operating cost of mitigation setup	$30M - $60M***	$120M - $240M***

** Impoundment costs vary by site conditions and liner system (compacted clay or single- or double-layer HDPE); ** evaporator costs vary by layout and piping and pumping needs; *** operating costs vary by power source.*

Across all four claims, this amounts to an estimated $1.2 billion to $2.6 billion in capital costs and $120 million to $240 million in annual operating costs, or $4.8 billion to $12 billion over the 40-to-50-year productive lifespan of the mines. **These costs would render the projects infeasible.**

ENVIRONMENTAL CONCERNS

The zero-discharge approach would also create environmental impacts that a permitted discharge would avoid:

- **Watershed effects:** Across four sites, roughly 20,000 acre-feet of water per year would be evaporated rather than returned to the Illinois River and Rough and Ready Creek. Removing that volume from the system could reduce downstream flows, particularly during the summer months when flows are already lowest.
- **Additional land disturbance:** Up to 1,200-1,400 acres of new impoundments across the four claims, on top of the mining footprint itself.
- **Permitting conflict:** The impacts of impounding this volume of water could make other required permits difficult to obtain, meaning that avoiding an NPDES permit may leave no viable permitting path at all.

REQUEST

We respectfully ask that DEQ include these compliance costs in the fiscal impact statement, along with the lost opportunity cost to the four mining claims within the proposed boundary should the ORW designation proceed.

To reiterate, our analysis estimates that operating within the constraints of an ORW designation would require **$1.4 billion to $2.6 billion in initial capital costs** and **$4.8 billion to $12 billion in operating costs** over the 40-to-50-year productive life of the mines.

Costs of that magnitude would render the projects infeasible. Per our prior RAC comments, the resulting lost opportunity would include **$200 million to $240 million in direct capital investment** and **$3.2 billion to $6 billion in operating expenditures** over the life of the projects. *These figures do not include the refinery facility we are separately evaluating outside the ORW boundary. Since the refinery's viability depends on ore sourced from the claims within the boundary, the designation would also put at risk an additional $300 million to $400 million in direct construction spending and $400 million to $1 billion in operating spending over the same 40-to-50-year period ($10 million - $20 million annually).*

State of Oregon
DEQ Department of Environmental Quality

Illinois River and Rough and Ready Creek Outstanding Resource Water Rulemaking Draft Fiscal Impact Statement

Statement of fiscal and economic impact

Fiscal and economic impact

Executive Summary

The proposed rules would preserve benefits to businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

ORW rules protect the current water quality at the time the rules become effective. Commercial forest harvesting that may occur in the two watersheds can continue without impacting water quality as long as harvest rates do not increase and Forest Practice Act rules are followed. Moreover, these watersheds are included in the Rogue River Temperature TMDL that is currently being updated. This TMDL includes load allocations for forested areas that, as they are implemented through improvements in forest harvest practices, will improve water quality in the watershed. As these are already required through the TMDL irrespective of the ORW designation, the proposed rules will not have a fiscal impact on any industrial or commercial forest harvesting.

Under the proposed rules, DEQ cannot: 1. issue a new National Pollutant Discharge Elimination System permit or expand an existing NPDES permit to discharge wastewater to the ORWs; or 2. issue or expand an NPDES permit upstream of the ORWs if the discharge will result in lowering of water quality in the ORWs. DEQ can issue a Water Pollution Control Facility permit that does not allow a direct or indirect discharge to surface waters. These requirements may increase compliance costs for facilities wishing to operate in the watershed if such measures are not already required under existing regulatory requirements.

The proposed rules may impact residents of the City of Cave Junction. The City's wastewater treatment plant has a NPDES permit to discharge into the Illinois River approximately five miles upstream of the proposed ORW designation. At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. As there are five miles between the discharge and the ORW designation, and many other considerations besides the ORW, it's

possible that future expansion will not affect the water quality in the ORWs. However, if a future plant expansion would degrade water quality in the ORW, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Statement of cost of compliance

Federal agencies

US Forest Service – Rogue River-Siskiyou National Forest

There are few direct impacts to the Rogue River-Siskiyou National Forest. The agency manages most of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. A large portion of the area that is proposed to be designated already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management standards from the Northwest Forest Plan's Aquatic Conservation Strategy. Any future planning efforts would require disclosure of the ORW designation in the public process required under the National Environmental Policy Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

State agencies

DEQ

There are few direct impacts to DEQ. The proposed rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of the Illinois River and Rough and Ready Creek from their current condition, other than construction projects with a short-term impact, which already require permits. Therefore, there should be no need to develop new permits, 401 certifications, or total maximum daily loads for these waterbodies. To the extent that Cave Junction plans for any expansion of its wastewater treatment system in the future, DEQ permitting staff will need to ensure that the expansion will not degrade water quality in waters proposed for ORW designation. The analysis needed to do so is the same or similar as what is required in any permit as part of antidegradation analysis. As a result, DEQ expects that the analysis will require little to no additional staff time.

DEQ also considers ORW designations as part of Division 33 water rights reviews that are coordinated through the Water Resources Department. However, since ORW designation is already a part of the form that DEQ staff fill out for Division 33 reviews, there will be minimal to no additional work needed to consider water rights applications in the waters proposed for ORW designation, other than that needed to update DEQ's database of ORW waters.

Local governments

The proposed ORW designation will continue to protect the recreational values of both Rough and Ready Creek and the Illinois River. As a result, the ORW designations are expected to support local revenue related to recreation and tourism.

The city of Cave Junction has an NPDES permit for its wastewater treatment plant that discharges to the Illinois River five miles upstream of the proposed ORW designation. The wastewater treatment plant only discharges to the Illinois River from November 1 to May 31.

From June 1 to October 31, the effluent from the wastewater treatment plant is used at a nearby golf course.

The city of Cave Junction last upgraded its wastewater treatment plant in 1998 to a system with an aerated activated sludge treatment plant with secondary clarifiers and an aerobic sludge digester. and is currently operating below capacity. As of the City's last permit renewal in 2022, the plant was operating at 44% of its wet weather design flow and 40% of its dry weather design flow on average.[1]

At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will conduct modeling to determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. Given the distance (about 5 miles) between the discharge and the ORW designation, it's possible that future expansion will not have an effect on the water quality in the ORW designated waters. However, if there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Public

DEQ does not expect a fiscal impact to the public as a result of this rule.

Large businesses - businesses with more than 50 employees

The rules will not impact large businesses conducting industrial forestry but may impact other types of large businesses that require wastewater permits. Large businesses that have industrial forest holdings in the waters proposed to be designated as ORWs will not be impacted by the ORW designation. There are approximately 2300 acres of industrial forestlands in these waters (Figure 1). DEQ has determined that compliance with current state forest practice rules for standard harvest are sufficient to ensure that any harvest will not lower water quality. As a result, there will be no impact on large forestry businesses.

[1] See City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp. and ODEQ, 2022. National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.

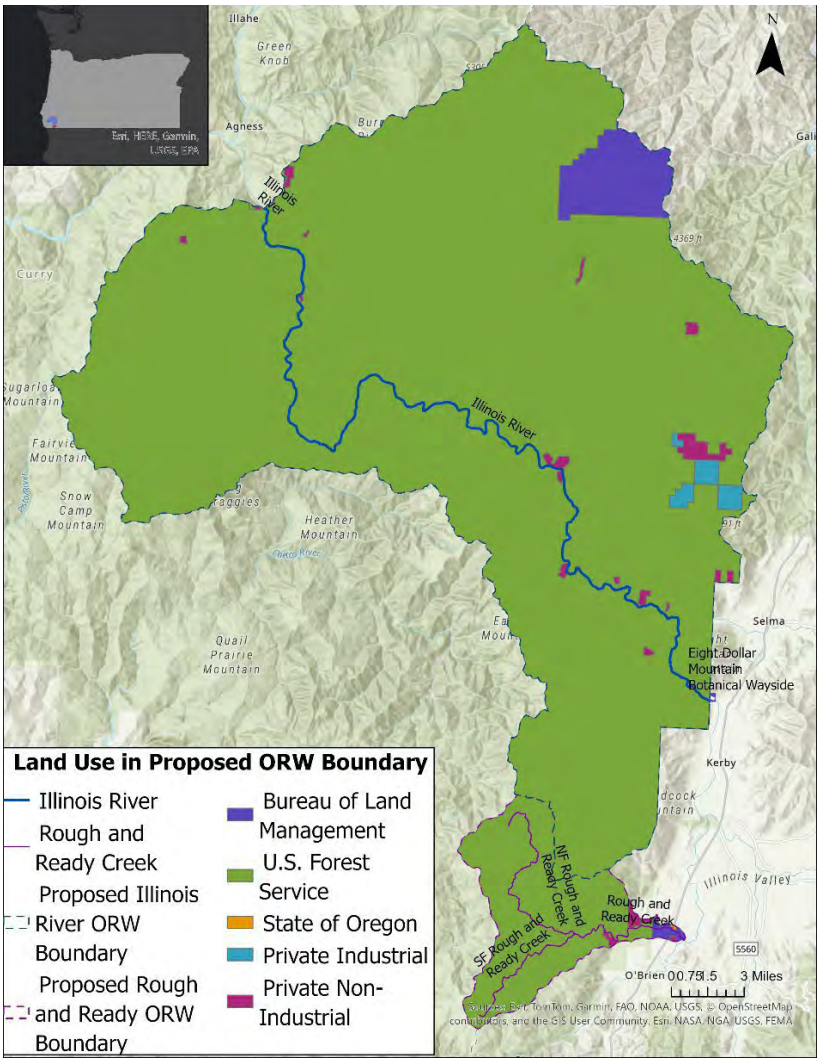

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

The rules may impact other large businesses that need a water quality permit. Absent the proposed rules, companies could obtain a National Pollutant Discharge Elimination System permit to discharge directly or indirectly to waters proposed for ORW designation. DEQ antidegradation rules allow a new NPDES permit if the discharge will meet any relevant TMDL requirements, protect endangered species, and result in no more than *de minimis* lowering of water quality, or more than *de minimis* lowering with DEQ or Environmental Quality Commission approval.[2]

Due to the proposed rules, businesses could not obtain an NPDES permit, but could apply for a WPCF permit, which does not allow direct or indirect discharge to waters of the state. For example, wastewater from operations could be placed in a lined holding pond or discharged to an underground injection well that had no connection to surface waters. Ensuring no discharge to surface waters could increase compliance costs to these companies, although compliance costs for monitoring could be less if there is no discharge.

[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

The Economic Value of Rogue River Salmon

Commissioned by the
Save the Wild Rogue Campaign,
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EXECUTIVE SUMMARY

In 2008, the ***Save the Wild Rogue Campaign*** engaged ECONorthwest to analyze the economic value of salmon and steelhead in the Wild & Scenic Rogue River. In this report, we summarize the results of our analysis, which is based on peer-reviewed, published research, results from the Oregon Population survey, and fish-count data published by the Oregon Department Fish and Wildlife.

Salmon are the quintessential icon of the Pacific Northwest with significant cultural and economic value. Based on the results of more than ten years of household surveys, Oregonians overwhelmingly and consistently state that protecting and enhancing salmon habitat is important.

West Coast residents alone enjoy more than $1.5 billion in economic benefit each year from the entirety of all Rogue River salmon and steelhead runs. Maintaining the current level of protection on the Rogue may not be sufficient to ensure that current and future residents will be able to enjoy this level of economic benefit.

In this analysis, we develop estimates for only three of the economic values associate with Rogue River salmon: commercial fishing, sport fishing, and non-use value. Non-use values represent the vast majority of the economic value of Rogue River salmon.

- $1.4 million annually associated with commercial fishing
- $16 million annually associated with sport fishing
- $1.5 billion annually associated with non-use values

For more than a decade, Oregonians have consistently stated that improving salmon habitat is important and have expressed a willingness to pay more than $70 million dollars per year to enhance salmon habitat in Oregon.

Oregon and Washington residents state a willingness to pay more than $800 per fish to increase Northwest salmon populations

The Wild & Scenic Rogue River is a national treasure. Each year, tens of thousands of rafters, anglers, hikers, and other sightseers visit the river, and recreate in or along it. Its cultural importance to many Americans is comparable to our most majestic National Parks and National Monuments.

Healthy salmon habitat is a necessary condition underlying the Wild & Scenic Rogue River's rich ecological abundance as well as the values derived from it. Today, while many salmon runs in the Northwest are either endangered or threatened, the majority of the Rogue's salmon runs remain relatively strong. Over the past decade, salmon and steelhead counts at Gold Ray Dam average nearly 87,000 fish annually. As residential and commercial development continues to degrade Northwest rivers, it becomes increasingly important to protect the scarce, healthy rivers such as the Wild & Scenic Rogue and its tributaries.

As global warming threatens to bring drastic weather changes to the Rogue Valley, the importance of streams flowing into the Rogue will only increase. They provide critical spawning grounds and cold water refugia for salmon and

steelhead. Increasing protection for these streams may serve to offset some of the adverse impacts on the Rogue River anticipated as the region experiences changes in climate in the coming years. The cold water provided by these streams will help mitigate increasingly warm summer water temperatures in the Rogue.

Enhanced protection of the critical streams that flow into the Wild & Scenic Rogue River is a virtually costless action that will lead to significant economic benefits for both the present and future generations. In light of the economic downturn currently facing the nation, the need for both immediate and long-term economic payoffs has never been greater. Investments in the protection of salmon habitat in the Wild & Scenic Rogue will continue to provide economic benefits to society for many generations. The results presented in this report demonstrate that Rogue River salmon and steelhead provide large net benefits to society. Policy-makers should take steps now to protect the Wild & Scenic Rogue River habitat so that society may begin reaping the benefits of these actions today.

INTRODUCTION

The Save the Wild Rogue Campaign engaged ECONorthwest[1] to analyze the economic value of salmon and steelhead in the Wild & Scenic Rogue River. In assessing this value, ECONorthwest considered the benefits of salmon to the commercial fishing industry, to sport anglers, and for their intrinsic value to residents of Oregon and the West Coast. It is important to recognize the limitations of this analysis. Salmon have significant cultural value to Northwest Tribes, they provide benefits to the entire ecosystem of the Rogue Valley, and they are a valuable source of food for marine mammals. ECONorthwest did not attempt to evaluate the economic value of these important cultural and biological benefits. Thus, the values in this report should be viewed as lower bound estimates of the true economic value of salmon.

The Rogue River is extraordinary, both as a river and as salmon and steelhead habitat. Located in the southwestern corner of Oregon, the Rogue River flows approximately 215 miles from its headwaters in the Cascade Range, near Crater Lake, reaching the Pacific Ocean at the city of Gold Beach. In 1968 Congress designated an 84-mile stretch of the Rogue River from the confluence of the Applegate River (seven miles downstream of the City of Grants Pass) to the Lobster Creek Bridge (11 miles upstream of Gold Beach) as a National Wild and Scenic River. The Rogue River was one of the original eight rivers included in the Wild and Scenic Act, which protects from development or degradation certain rivers or river segments that have national significance.

The Wild and Scenic section of the Rogue River provides important habitat for a variety of wildlife including spring and fall Chinook, summer and winter steelhead, and coho salmon. This section of the river and its tributaries serve both as spawning grounds for certain anadromous fish and as an important migratory path for other anadromous species as they travel upstream to spawn or from spawning grounds to the ocean. The water quality in this section of the river and its tributaries affects the health of salmon and steelhead. Normal fish growth and productivity increases depend on cold stream temperatures, which helps regulate salmonid metabolic function. As stream temperatures rise, abnormal fish behaviors and mortality increase[2].

According to the National Marine Fisheries Service, the survival of Pacific Northwest salmon and steelhead—and the commercial harvests they support—depend on protecting and restoring habitat diversity and migratory connections among habitats[3]. The Rogue River is the spawning, rearing, and migration site

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[1] Throughout this report, the terms "we," "our" and "us" refer to the authors of this report at ECONorthwest.

[2] Heyn, K. 2008. White Paper on the Biological Contributions of Tributary Streams to the Wild Rogue River, Oregon. American Rivers.

[3] NOAA's National Marine Fisheries Service. 2006. *Salmon Habitat*. Retrieved December 1, 2008, from http://www.nwr.noaa.gov/Salmon-Habitat/index.cfm.

for nearly 100,000 anadromous fish returning from the ocean each year. Only the Columbia River produces more Pacific Salmon in the state of Oregon[4]. As salmon populations in other rivers in the Pacific Northwest decline, healthy habitats such as the Rogue River become even more important and valuable.

Conserving healthy salmon populations also reinforces recreational, aesthetic, and other economically significant amenities in the Pacific Northwest. Workers benefit from healthy salmon habitats by living amid high-quality natural-resources amenities. In effect, workers receive a second paycheck—denominated in access to scenic vistas, outdoor recreation opportunities, etc.—that augments the first paycheck earned through work and investments. In fact, evidence suggests that the second paycheck is great enough to offset the potential benefits that would accrue from attracting more businesses to the region through environmental deregulation. In a 1993 survey, the Oregon Business Council asked Oregonians, "Which is more important to economic growth in Oregon? Relax environmental regulations to make it easier for companies to do business or maintain a quality environment to attract people and companies to Oregon?" Of the 90 percent of the respondents who had an opinion, over four times as many wanted Oregon to "maintain a quality environment" than to "relax environmental quality [5].

High environmental quality standards do not indicate that businesses have fewer incentives to locate in the Pacific Northwest region. The quality of life in the Pacific Northwest, characterized largely by its natural resources, also attracts new residents who often have higher levels of education than current residents and they often are willing to accept reduced earnings to live in the Pacific Northwest[6]. Attracting high-quality workers at lower costs relative to other regions of the country, helps businesses in the Pacific Northwest compete with firms elsewhere, thus strengthening this region's economy.

Studies of federal lands in the Pacific Northwest found that, on a per-acre basis, the economic value of fishing exceeds the values of all other recreational activities[7]. Protecting salmon habitats helps improve the quality of other recreational activities, such as fishing and boating, which enhance the economic value of the region's natural resources.

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[4] Heyn, K. 2008. *White Paper on the Biological Contributions of Tributary Streams to the Wild Rogue River, Oregon*. American Rivers.

[5] Oregon Business Council. 1993. *Oregon Values and Beliefs: Summary.* May.

[6] Judson, D.H., S. Reynolds-Scanion, and C.L. Popoff. 1999. "Migrants to Oregon in the 1990's: Working Age, Near-Retirees, and Retirees Make Different Destination Choices." *Rural Development Perspectives* 14 (2): 24-31.

[7] Forest Ecosystem Management Assessment Team. 1993. *Forest Ecosystem Management: An Ecological, Economic, and Social Assessment*. Forest Service, Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Bureau of Land Management, and Environmental Protection Agency. 794-478. July.

SALMON AND THE ENDANGERED SPECIES ACT

Twenty-nine species of West Coast salmon and steelhead are listed as either endangered or threatened under the Endangered Species Act (ESA) and two species are listed as a species of concern[8]. Table 1 summarizes the 2008 ESA listings for West Coast salmon and steelhead. Coho salmon, which use the Wild & Scenic section of the Rogue River as a migratory path to spawning grounds on the Upper Rogue River, are a threatened species. Coho salmon occupy approximately fifty percent of their historic range and scientists are concerned about further population loss in larger river basins such as the Rogue, Klamath, and Trinity Rivers[9].

Overfishing used to be the major cause of salmon decline, but in recent years, loss of freshwater habitat has become the largest threat to salmon populations. Habitat degradation occurs through mining, logging, cattle grazing and agricultural practices, and blockage of river systems by dams for electricity generation, flood control, and irrigation[10].

NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service share responsibility for the listing of species under the Endangered Species Act.[11] NMFS manages marine and anadromous species, including all species of west coast salmon and steelhead. Economic factors are not to be considered by NMFS when determining if a species is sufficiently at risk of extinction that it warrants listing as a threatened or an endangered species under the provisions of the ESA. The agency also is not to consider economic issues when it determines whether or not to provide legal protection to a listed species. Instead, these determinations are to be based solely on biological factors. Economics comes into play only when, for each listed salmon species, the Secretary of Commerce designates critical habitat, an action that restricts federal agencies from taking actions that would destroy or adversely modify habitat essential to conserving the species. Before making this determination, the Secretary must consider all the economic impacts, plus national-security and other impacts. Following this accounting, the Secretary may exclude an individual area from the designation only if the benefits of exclusion for that area outweigh the benefits of designation.

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[8] NOAA's National Marine Fisheries Service. 2008. *Snapshot of Salmon & Steelhead ESA Status*. http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm.

[9] NOAA's National Marine Fisheries Service Southwest Regional Office. *Southern Oregon/Northern California Coast Coho ESU*. Retrieved Nov. 20, 2008 from, http://swr.nmfs.noaa.gov/recovery/Coho_SONCCC.htm.

[10] Montgomery, C.A. and T.L. Helvoigt. 2008. *Trends in Oregonians' Willingness to Pay for Salmon*.

[11] NOAA is the National Oceanic and Atmospheric Administration.

Table 1: Endangered Species Act Status of West Coast Salmon & Steelhead

	Species	Endangered Species Act Listing Status	ESA Listing Actions Under Review
Sockeye Salmon (Oncorhynchus nerka)	Snake River	Endangered	
	Ozette Lake	Threatened	
Chinook Salmon (O. tshawytscha)	Sacramento River Winter-run	Endangered	
	Upper Columbia River Spring-run	Endangered	
	Snake River Spring/Summer-run	Threatened	
	Snake River Fall-run	Threatened	
	Puget Sound	Threatened	
	Lower Columbia River	Threatened	
	Upper Willamette River	Threatened	
	Central Valley Spring-run	Threatened	
	California Coastal	Threatened	
	Central Valley Fall and Late Fall-run	Species of Concern	
Coho Salmon (O. kisutch)	Central California Coast	Endangered	
	Southern OR/Northern CA	Threatened	
	Lower Columbia River	Threatened	Critical Habitat
	Oregon Coast	Threatened	
	Puget Sound/Strait of Georgia	Species of Concern	
Chum Salmon (O. keta)	Hood Canal Summer-run	Threatened	
	Columbia River	Threatened	
Steelhead (O. mykiss)	Southern California	Endangered	
	Upper Columbia River	Endangered	
	Central California Coast	Threatened	
	South Central California Coast	Threatened	
	Snake River Basin	Threatened	
	Lower Columbia River	Threatened	
	California Central Valley	Threatened	
	Upper Willamette River	Threatened	
	Middle Columbia River	Threatened	
	Northern California	Threatened	
	Puget Sound	Threatened	Critical Habitat
	Oregon Coast	Species of Concern	

Source: ECONorthwest with data from NOAA's National Marine Fisheries Service. 2008. *Snapshot of Salmon & Steelhead ESA Status*. http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm.

Many benefits accrue from designating critical salmon habitat, which could also be realized through improved ecosystem management practices in areas *not* designated as critical habitat. Improving water quality and aquatic habitat creates many benefits that are not directly related to salmon. In fact, many businesses and farms reduce their impacts on streams because they find it profitable to do so[12]. Benefits may be realized through reductions in flood damages, improvements in bird habitat, water quality, recreational opportunities, and increased property values near the stream. The area and extent of the impacts of the improved habitat can be vast. Benefits may be seen downstream from the site or in other watersheds. It is not necessary to wait for a stream or watershed to be designated as a critical habitat to obtain these benefits. The costs of improving water quality and aquatic habitat are often less than the benefits gained by doing so and when the risk of salmon extinction depends on the given habitat the benefits are even greater.

However, once the ESA designates critical habitat, more costs will be imposed on the residents, businesses, and local governments impacted by the habitat area. The laws pertaining to critical habitat impose several costs on federal agencies and private parties with an interest in the critical habitat region. The consultation costs of obtaining an assessment from the federal government of a project's impact on the species' habitat, the costs of modifying a given project to comply with ESA, and the costs of delaying the implementation of the project while assessments and modifications are made are a few of the costs associated with critical habitat[13]. Many of these costs can be avoided by improving salmon habitats before critical habitat is designated.

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[12] Goodstein, E., B. Doppelt, and K. Sable. 2000. *Saving Salmon, Saving Money: Innovative Business Leadership in the Pacific Northwest*. Center for Watershed and Community Health, Portland State University; Sullivan, P., D. Hellerstein, L. Hansen et al. 2002. *The Conservation Reserve Program: The Implications for Rural America. United States Department of Agriculture, Economic Research Service*. Agriculture, Economic Report 834. September.

[13] Sunding, D. *The Economic Impacts of Critical Habitat Designation*. Giannini Foundation of Agricultural Economics.

ANADROMOUS FISH ON THE ROGUE RIVER

Table 2 shows the fish counts for different species of anadromous fish at Gold Ray Dam for years 1997 through 2006. Gold Ray Dam is located approximately thirty river miles upstream of the start of the Wild & Scenic Section of the Rogue River so the numbers reported represent only the fish that pass through the Wild & Scenic Section to spawn above the dam. Table 3 shows the estimated fish escapements for different species at Huntley Park located downriver from the Wild & Scenic Section. Based on conversations with the Oregon Department of Fish and Wildlife there are no known data of the number of anadromous fish that spawn and rear in the Wild & Scenic Rogue River and its tributary streams.

Table 2: Fish Counts at Gold Ray Dam

Year	Summer Steelhead	Winter Steelhead	Spring Chinook	Fall Chinook	Coho	Total Steelhead, Chinook, and Coho
1997	7,538	14,957	41,794	4,857	15,750	84,896
1998	6,056	5,029	15,957	5,332	6,044	38,418
1999	4,785	9,497	20,981	3,540	7,722	46,525
2000	6,734	6,807	30,265	9,892	28,791	82,489
2001	16,114	8,944	33,273	13,606	32,962	104,899
2002	29,296	22,287	47,781	19,823	34,154	153,341
2003	20,297	24,850	41,841	24,857	17,179	129,024
2004	13,658	21,889	39,243	15,007	21,702	111,499
2005	10,414	11,908	18,090	8,615	14,632	63,659
2006	14,579	9,560	11,718	6,908	11,368	54,133

Source: ECONorthwest with data from Oregon Department of Fish and Wildlife, Roseburg. 2003. Letter to Ted Helvoigt. and Oregon Department of Fish and Wildlife, Fish Division. 2008. *Fish Counts*. Retrieved October 29, 2008, from http://www.dfw.state.or.us/fish/fish_counts/goldray/2006/gold_ray_dam._2006.asp.

Figure 1: Fish Counts at Gold Ray Dam (1943-2006)

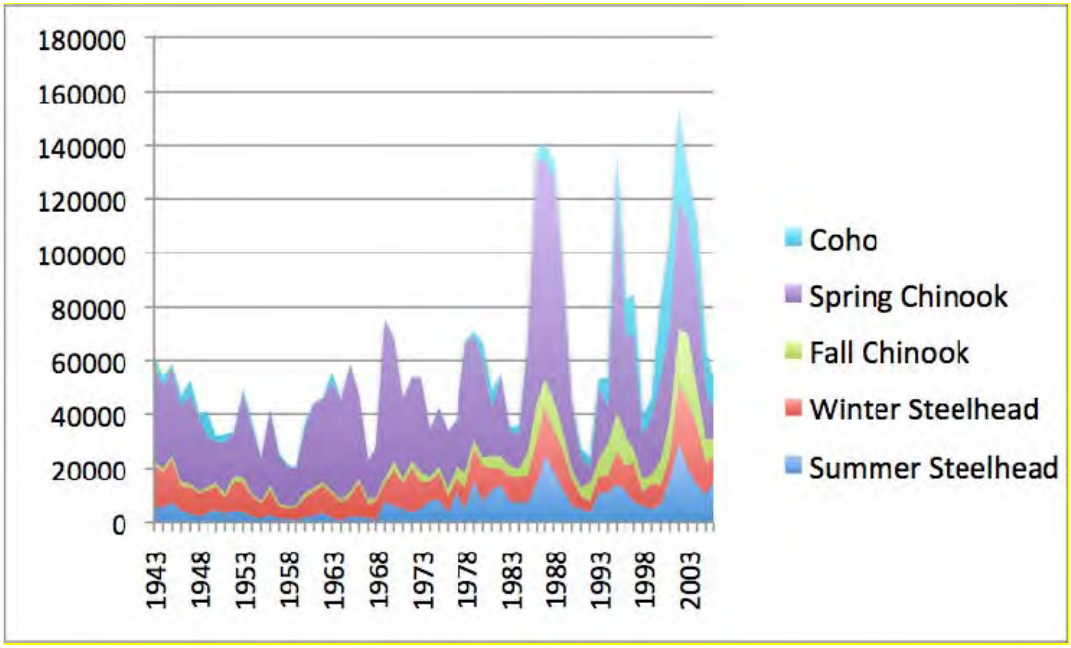

Table 3: Huntley Park Estimated Adult Fish Escapements

Year	Summer Steelhead	Fall Chinook	Coho
1997	15,325	17,186	40,647
1998	9,222	16,867	6,817
1999	15,882	19,456	6,155
2000	21,856	34,562	18,572
2001	17,397	35,447	37,243
2002	35,813	62,576	27,103
2003	21,005	86,551	16,071
2004	14,209	55,170	46,546
2005	10,466	23,733	8,271
2006	18,142	14,738	16,397

Source: ECONorthwest with data from Mazur, Steven. 2008. *Huntley Park Trend Data*. Email to T. Helvoigt October 22.

The Wild & Scenic section of the Rogue River and its tributaries provide important cold water refugia for salmon and steelhead. Anadromous fish are present in at least 100 stream miles across 14 tributary streams of the Rogue River[14]. The streams play an important role in salmon habitat as they bring colder water temperatures to the larger main Rogue, and they provide refuge from the warm water temperatures of the main stem during summer months. These cold temperatures also permit higher concentrations of oxygen to dissolve in the water. With the projected climate changes predicted for the coming years, these cold water streams will become even more valuable to salmon and steelhead survival. A report which utilized aerial thermal surveys indicated that there already is a trend of downstream warming on the Rogue. The cold water refugia is necessary for migrating salmon and steelhead so that they remain healthy and able to fight disease. Each species of anadromous fish uses the Rogue River habitat in a different manner, but the health of the river and its streams is important to the health of each species.

For instance, coho salmon use the Wild & Scenic Section of the Rogue River as a migratory path. Coho can mostly be found in Lobster, Quosatana, Silver, Foster, Shasta Costa, Lawson, Mule and Billings Creeks, which feed into the Rogue River. In the summer, coho prefer to swim to pools in small streams. In the winter, they prefer off-channel alcoves. Complexity, such as mixtures of small and large wood, is important for productive coho streams. The health of the Rogue River, as a migratory passage, and its tributaries, as spawning and rearing grounds, are key factors for the health of coho salmon.

Wild spring Chinook also use the main stem of the Rogue River as a migratory passage and spawn above Gold Ray Dam. Fall Chinook usually spawn in the lower regions of the river. Only about 10% of fall Chinook spawn above Gold Ray Dam. The early entry adults spawn between Grave Creek and Gold Ray Dam and in the lower 25 miles of the Applegate River. The late entry adults typically spawn below Watson Creek on the Rogue River and in the Illinois basin. The Wild & Scenic section of the Rogue River is an important spawning ground for the fall Chinook. In 1979, pre-spawn mortalities of fall Chinook from low flows and high temperatures on the Rogue River were as high as 85%. Although there is not enough data available to draw any conclusions about the health of late entry fall Chinook, it appears that their population is declining. Table 4 shows the redd (salmon nest) counts on the main stem of the lower Rogue River from surveys conducted by the Oregon Fish and Wildlife Department every twenty years.

[14] Heyn, K. 2008. *Save the Wild Rogue*. American Rivers.

Table 4: Redd Counts on the Lower Rogue River

Survey Year	Method	Redds/mile
1953	Boat	5.1
1954	Boat	5.7
1974	Plane	4.0
1976	Plane	4.3
1993	Helicopter	0.2

Source: Weinhold, M. Lower Rogue River Basin Watershed Condition Assessment. 1995. Lower Rogue Watershed Council for State of Oregon Watershed Health Program and Strategic Water Management Group.

Winter steelhead also spawn in the Wild & Scenic section. They most often spawn in the tributary streams to the Rogue, only spawning in the main stem if objects obstruct their passage or when water levels are too low to permit them to spawn in the smaller streams. Summer Steelhead usually spawn above the Wild & Scenic Section but half-pounders usually overwinter within the lower fifty miles of the Rogue's main stem and over 95% of the summer steelhead have a half-pounder lifestyle.

The health of the Wild & Scenic Rogue River as a salmon spawning, rearing, and migratory habitat is necessary for the protection of healthy anadromous fish. Maintaining cold water temperatures in the main stream of the Rogue River with limited debris and protected watersheds will help to maintain a healthy habitat for salmon and steelhead.

VALUE OF ROGUE RIVER SALMON

By protecting salmon and steelhead populations in the Rogue River, Oregon is protecting an asset important to residents of the Pacific Northwest. For example, studies indicate that households in Washington and Oregon are willing to pay $30-$130 per year to finance salmon recovery efforts[15]. Salmon populations also help sustain jobs in the Pacific Northwest. If salmon populations were restored sufficiently to allow increases in commercial harvest, fishers and those in related industries would enjoy new business and job opportunities in Oregon, Washington, and elsewhere along the salmon's migration routes. Further benefits accrue to recreational anglers and all residents of the Pacific Northwest who benefit from the clean water, flood control and open spaces associated with salmon habitat. Since the values of many of these benefits accruing from salmon habitat are not captured by market prices, economists must employ different methods to measure the aggregate benefits that salmon and steelhead provide to the Northwest. Hence, the household surveys provide a means to estimate the extent to which Northwest residents value salmon and enhancements to salmon habitat.

Economists describe economic benefits of ecosystem goods and services, such as the benefits of protecting salmon and steelhead habitat, using various methods. Established markets exist for some benefits, such as increases in the supply of goods, e.g., commercial harvests of fish. In these cases, we can interpret market prices as a measure of the economic benefit of actions that protect or increase the supply of the good. We note, however, that factors such as externalities (e.g., when prices do not include pollution impacts) or government intervention (e.g., when subsidies artificially elevate prices) can distort market prices.

Measuring the economic significance of benefits for which markets do not exist, such as cultural values, amenity values, and the recreational value of sport fishing, is more challenging. Economists have developed techniques that can approximate the economic values of some of these benefits. These techniques have been tested and improved over the decades, with results and methods vetted through publication in academic journals and presentations at scholarly conferences.[16] We describe some of the more commonly used techniques in more detail in our discussion of the sport fishing and existence values of salmon and steelhead.

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[15] Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy, eds., *Frontiers in Ecological Economic Theory and Applications*. Northampton, MA: Edward Elgar.

[16] For more information on the methods of measuring economic benefits that are not traded in markets, see The National Research Council. 2004. *Valuing Ecosystem Services: Toward Better Environmental Decision-Making*. Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems, National research Council; Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-Being*; and Barbier, E.B., et al. 1997. *Economic Valuation of Wetlands*. Ramsar Convention Bureau, Department of Environmental Economics and Environmental Management, University of York, Institute of Hydrology, IUCN-The World Conservation Union.

1. Commercial Fishing Value of Rogue River Salmon

Although the market price for wild salmon provides a reasonable starting point for calculating the commercial fishing value of a Pacific Northwest salmon or steelhead, many factors complicate the calculation. Salmon are often caught far from the streams in which they were spawned. Since many Pacific Northwest salmon are caught in the ocean near Alaska and Canada, estimates of the contribution of Northwest-spawned salmon to the total Pacific catch must be made.

Table 5 shows the results of studies conducted by the Independent Economic Analysis Board (IEAB) (2005)[17] and Radtke and Davis (1995 a), In each of these studies, the authors estimate the economic impact that commercial-caught salmon and steelhead has on the Northwest economy.[18] Both studies focus on Columbia River Basin fisheries.

Table 5: Economic Value of Commercial-Caught Salmon and Steelhead, Estimates from the Academic Literature

Study	Species	Location	Average weight	Ex-vessel price per lb	Per Fish Economic Value ($2007)*
Radtke & Davis, 1995 a	Chinook	WA. Coast	11.51	$2.56	$64.95
Radtke & Davis, 1995 a	Chinook	WA. Coast	23.53	$1.09	$78.14
Radtke & Davis, 1995 a	Chinook	OR. Coast	11.4	$2.53	$68.14
Radtke & Davis, 1995 a	Coho	OR. Coast	4.56	$1.18	$13.64
IEAB, 2005	Coho	WA. Ocean	3.8	$1.84	$15.29
IEAB, 2005	Coho	OR. Ocean	5.8	$1.89	$21.34
IEAB, 2005	Coho	CA. Ocean	5.9	$1.89	$25.28
IEAB, 2005	Chinook	WA. Ocean	12.2	$2.17	$59.14
IEAB, 2005	Chinook	OR. Ocean	11.2	$2.17	$51.48
IEAB, 2005	Chinook	OR. Ocean	11.2	$2.17	$51.48
IEAB, 2005	Chinook	CA. Ocean	11.6	$2.51	$65.86
IEAB, 2005	Steelhead	B.C. Ocean	7.00	$1.67	$27.28

ECONorthwest compilation of various studies

Table 6 shows the estimated economic impact to the Northwest of salmon and steelhead caught commercially in coastal areas of the Northwest (excludes British

[17] Independent Economic Analysis Board. 2005. *Economic Effects from Columbia River Basin Anadromous Salmonid Fish Production*. Document IEAB 2005-1.

[18] The regional economic impacts include wages, proprietor's incomes, rents, interest and dividends.

Columbia and Alaska). The total estimated economic impact is not great—only $1.36 million, but represents a lower bound estimate as the estimates of the number of Rogue River fish commercially harvested off the Northwest coast is conservatively estimated.

Table 6: Per-Fish and Total Economic Impact of Commercially Caught Rogue River Salmon,* 2007 Dollars

Species	Harvest of Rogue River-Spawned Fish	Per-Fish Economic Impact	Total Economic Impact
Coho	3,299	$19	$62,307
Chinook	20,264	$63	$1,271,379
Steelhead	1,040	$27	$28,360
Total	24,603		$1,362,046

Source: ECONorthwest analysis of data from studies shown in Table 5 and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp)

*Does not include economic impacts associated with Rogue River-spawned salmon and steelhead commercially harvested in Pacific Ocean off the Canadian or Alaskan coast.

2. Sport Fishing Value of Rogue River Salmon

The sport fishing value of Rogue River salmon is primarily a function of the pleasure derived from the fishing experience and is significantly greater than the commercial value, as measured on a per fish or per pound basis. Based on estimates from several peer-reviewed studies of sport fishermen, the average value of a Northwest salmon or steelhead is approximately $245 expressed in 2007 dollars.

The total value of a salmon or steelhead to a recreational angler is the dollar amount that the angler is willing to pay to fish for it. Economists typically decompose the total value into two parts: the first part is the amount the angler *actually* spends to fish.[19] In most cases, however, recreational anglers are willing to spend more than they actually do to fish. The difference between what an angler is willing to pay and what he or she actually pays is referred to by economists as *consumer surplus*, and represents the second part of the total value of a sport-caught salmon. It is important to measure consumer surplus because it represents a real gain in overall economic well being above that which is observed in market transaction by those engaging in sport fishing. Consumer surplus is a means of recognizing that for many anglers, the economic value associated with the enjoyment of fishing is greater than the sum of the market-based transactions undertaken to go fishing. Thus, fishing-related expenditures alone do not account for the entire economic benefits derived from the fishing experience.

Table 7 shows the results of several studies conducted in the Pacific Northwest to estimate the value of salmon to sport anglers. The results varied depending on the location of the study and the method of evaluation employed. However, even the most conservative calculations show that the recreational value of salmon and steelhead fishing is far greater than the market (purchase) price for salmon or steelhead.

[19] Note: this amount is accounted for in the "Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River."

Table 7: Estimates of the Economic Value of Sport-Caught Salmon and Steelhead from Various Studies, 2007 Dollars

Study	Location	Species	Study Method	WTP Per Fish ($2007)
Olsen et al., 1990	Washington Ocean	Salmon	CVM	$63.60
Meyer et al., 1983	Oregon Ocean	Steelhead	TCM	$154.32
Olsen et al., 1990	Oregon Coastal	Steelhead	CVM	$97.92
Olsen & Richards, 1992	Rogue River	Fall Chinook	CVM	$103.64
Meyer et al., 1983	Rogue River	Fall Chinook	TCM	$57.04
Meyer Resources, 1987	San Fran. Bay/ Sacramento & San Joaquin Rivers	Chinook	CVM	$684.65
Meyer Resources, 1987	California statewide	Chinook	CVM	$307.37
Meyer Resources, 1987	North Coast Streams	Chinook	CVM	$307.37
Olsen et al., 1990	Washington Freshwater	Salmon	CVM	$56.13
Meyer Resources, 1985	Sacramento and San Joaquin Rivers	Salmon	TCM	$302.76
Meyer et al., 1983	Columbia River	Salmon	TCM	$200.23
Olsen et al., 1990	Columbia River	Salmon	CVM	$69.83
Meyer et al., 1983	Oregon	Steelhead	TCM	$234.68
Olsen & Richards, 1992	Rogue River	Steelhead	CVM	$128.18
Meyer et al., 1983	Rogue & Illinois	Steelhead	TCM	$208.88
Meyer Resources, 1985	Sacramento and San Joaquin Rivers	Steelhead	TCM	$896.19
Meyer Resources, 1986	California, Statewide	Steelhead	TCM	$909.83
Donnelly et al., 1985	Idaho, statewide	Steelhead	CVM	$42.04
Meyer et al., 1983	Columbia River	Steelhead	TCM	$320.28
Olsen et al., 1990	Columbia River	Steelhead	CVM	$202.49
Olsen & Richards, 1992	Rogue River	Half-Pounder*	CVM	$16.73
Olsen & Richards, 1992	Rogue River	Steelhead	CVM	$33.86

ECONorthwest compilation of various studies

Although not shown here, recreational fishing also impacts the local and regional economies through the multiplier effect.[20] Dollars spent by recreational anglers on fishing supplies, food and lodging create income for local businesses and provide income and salaries for local residents. Consequently, public policy and decisions makers should take into account how decisions which impact salmon and steelhead habitat will impact sport angling and other related recreational activities that have a wider scope of influence in the economy than the market value of salmon alone.

[20] For information on the economic impact that sport fishing on the Rogue River has on the Josephine County and Oregon economies, please see "Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River."

Table 8 shows the annual WTP by sport anglers for Rogue River salmon and steelhead based on information presented in Table 7. Given the unique wilderness experience offered by the Wild Rogue, the per fish and total willingness to pay (WTP) shown in Table 8 are likely low for that section of the river.

Table 8: Estimated Annual WTP by Sport Anglers for Rogue River Salmon, 2007 Dollars

Species	Catch Location	Estimated 2007 Catch	WTP Per Fish	Estimated Total WTP	Upper Bound WTP
Coho	Ocean	6,488	$64	$412,696	$412,696
	River	1,200	$157	$188,732	$363,404
Chinook	Ocean	5,355	$64	$340,600	$340,600
	River	15,988	$232	$3,711,003	$10,946,101
Steelhead	Ocean	1,040	$126	$131,130	$160,447
	River	4,165	$299	$1,246,599	$3,789,289
Total Sport Fishing		34,236		$6,030,759	$16,012,535

Source: ECONorthwest analysis of results from studies presented in Table 7 and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp)

3. Non-use Value of Rogue River Salmon

Even those who do not consume salmon or steelhead may benefit from their existence. In fact, the non-use value of an environmental resource is often far greater than it's commercial or sport value. Non-use value can take several different forms: option value, which is the value of saving a good for use at another time; bequest value, the value of saving a good for future generations; altruistic value, the value of saving a good for others to use now; and existence value, the value of saving a good for the sake of its existence[21]. Surveys indicate that, in aggregate, residents of the Pacific Northwest and California place a much higher non-use value on salmon than they do use value. Only a relatively small proportion of West Coast residents participate in fishing for salmon and steelhead. Thus there are many fewer households over which to aggregate total value. For example, based on information from the *2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Oregon*, 455,000 Oregonians age 16 or older participated in fishing in 2006, out of a 16+ population of 2,894,050. This represents only 16% of Oregon's 16 and older population[22]. Comparatively, based on household survey results, a much larger percentage of Oregonians (and Americans in general) value Northwest salmon even though they likely will never participate in salmon fishing or even view a wild salmon (see Loomis, 1999, Pate and Loomis 1997, Loomis 1996).

Loomis (1999) estimated the marginal non-use value of salmon and steelhead on the Lower Snake River to residents of Oregon, Washington, and California[23]. The results of the analysis indicate that, as one would expect, the marginal value (i.e., the value of the next additional salmon) goes down as the total population of salmon goes up. At very low populations, (e.g. fewer than 5,000 total fish) the marginal value of an additional fish is more than $1.0 million. This immense per-fish value embodies the scarcity associated with a small fish population and society's desire to preserve the species for current and future generations.

Based on the results of the survey analysis and through the incorporation of information from other surveys, Loomis (1999) developed a *marginal WTP benefit function*, which provides estimates of the marginal value of a fish based on the

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[21] Schuhmann, P.W. and K.A. Schwabe. 2002. "Fundamentals of Economic Principles and Wildlife Management." In L. Clark, J. Hone, J.A. Shivik, R.A. Watkins, K.C. VerCauteren, and J.K. Yoder, eds., *Human Conflicts with Wildlife: Economic Considerations. Proceedings of the Third NWRC Special Symposium*. Fort Collins, CO: National Wildlife Research Center from http://www.aphis.usda.gov/ws/nwrc/symposia/economics/.

[22] U.S. Department of Interior, Fish & Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. *2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Oregon.*

[23] Loomis reviewed and augmented survey data from three other studies which asked households in the Pacific Northwest and California how much they were willing to pay for a specified increase in the number of either salmon or salmon and steelhead on a given river as a result of dam removal. None of the fish in these studies were endangered which is an important consideration when relating the results of these studies to other rivers since individuals will likely place greater existence value on an endangered species than on a non-endangered species.

size of the underlying population. He then demonstrates that as the underlying population increases, the marginal value that society places on increasing the population by one fish decreases. For example, based on a salmon population of 500,000, the marginal value of one additional fish is $1,595. However, the marginal value of a second additional fish (e.g., the marginal value based on a salmon population of 500,001) is only $1,539.

Loomis (1999) developed the marginal WTP benefit function based on analysis of society's WTP to increase the salmon populations on the lower Snake River. Based on comments from one or more reviewers of his analysis, he contends that the benefit function may in fact be representative of the entire Pacific Northwest salmon population. What this means is that, though there are many distinct populations of salmon throughout the Pacific Northwest, many Northwest and California residents do not differentiate between salmon of various populations. Society's concern is for the overall welfare of salmon populations throughout the Northwest. Thus, the value that society places on the marginal fish returning to spawn in any one Northwest river is a function of the aggregate count of all salmon returning to spawn in all Northwest rivers. The result of embracing the assumption that society views all Northwest salmon as members of one Northwest-wide population, is that society's WTP for the marginal salmon of any actual (biological) population will be lower than if society viewed each biological population separately.

To estimate the society's non-use WTP for Rogue River salmon and the value society places on the entire population of Rogue River salmon we embrace the all-Northwest assumption regarding the WTP benefit function for Rogue River salmon. In doing so, we acknowledge that our estimates of the non-use or existence value represents a lower bound estimate of the actual non-use value society places on Rogue River salmon. That is, although we are unsure of society's actual non-use WTP for Rogue River salmon, we are confident that it is no lower than and may be much higher than the estimated value based on the WTP benefit function developed by Loomis (1999).

Table 9 shows the estimated marginal and average values of Rogue River salmon, as well as the total value of the Rogue River fishery based on various assumptions about the entire population of Northwest salmon. To our knowledge, "official" estimates of the aggregate population of Northwest salmon are not available.[24] However, based on escapement counts[25] for the Columbia River system from the Pacific Fishery Management Council (PFMC), we estimate the 10-year average annual salmon escapement for the Northwest to be approximately 830,000 fish.[26] Based on this estimate of the Northwest salmon

[24] We define "aggregate population" as the 10-year average salmon escapement summed across all Northwest river systems.

[25] Escapement is the annual count of salmon and steelhead returning to their spawning ground or hatchery.

[26] The PFMC 2007 report can be found at: http://www.pcouncil.org/salmon/salsafe.html.

population, we estimate society's annual marginal non-use WTP for a Rogue River salmon to be $1,008, the average WTP to be $1,824, and the total annual non-use WTP of the entire Rogue River salmon fishery to be just over $1.5 billion.

At first glance, these numbers appear to be very large. However, consider that these estimates are aggregated across the entire population of Oregon, Washington, and California—more than 46 million people in 2007. The per-person value of the entire Rogue River salmon fishery is $32.37 per year. Another perspective from which to view the annual value of the fishery is to compare it to the economic output of the 3-state region. Based on Bureau of Economic Analysis data (BEA), the combined gross state product of the three states was $2.28 trillion. The estimated annual value of the Rogue River fishery represents a mere 0.07% of the total annual output for 2007.

Table 9: Annual Non-Use Value of Rogue River Salmon, 2007 Dollars*

Assumed Northwest Salmon Population	Marginal Value of a Rogue River Salmon	Average Value of a Rogue River Salmon	Total Value of Rogue River Salmon Population
500,000	$1,595	$4,892	$2,446,138,182
750,000	$1,112	$2,217	$1,662,959,665
828,282	**$1,008**	**$1,824**	**$1,514,072,103**
1,000,000	$822	$1,266	$1,266,345,698
1,250,000	$793	$821	$1,026,859,060
1,500,000	$525	$576	$863,315,110

Source: ECONorthwest analysis of results from Loomis, J. 1999. *Recreation and Passive Use Values From Removing the Dams on the Lower Snake River to Increase Salmon*. Agricultural Enterprises, Inc. for the Department of the Army Corps of Engineers; data from the Pacific Fishery Management Council (http://www.pcouncil.org/salmon/salsafe.html) and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp).

* Consistent with the results of the WTP salmon question in the 1996 through 2006 Oregon Population Surveys, we assume no inflationary growth in the WTP between 1996 (the data year of the Loomis 1999 study) and 2007.

Table 9 also provides estimates of the value of Rogue River salmon based on alternative assumptions regarding the size of the entire Northwest salmon population. The declining values associated with increasing salmon populations shown in Table 9 are consistent with economic principles of diminishing marginal value. Under an assumption of relative scarcity (e.g. a total average annual escapement of 500,000 salmon across all Northwest rivers), the marginal value of Rogue River salmon is greater. And under the alternative assumption of relative abundance (e.g. 1.5 million salmon), the marginal value of Rogue River salmon is less. Stated another way, as local, regional, and oceanic conditions worsen for Northwest salmon, the value of the next Rogue River salmon increases.

While the results of Loomis' study provide insight into the values society place on salmon in general, it is important to realize that all salmon populations in the Northwest may not be valued the same. A 2005 report by Goodstein and

Matson[27] summarized and augmented research by Layton, Brown, and Plummer in 1999 on people's willingness to pay for specific salmon restoration projects. Goodstein and Matson (2007) used these data to find the perceived economic benefit of restoring salmon populations or, alternatively, of avoiding further declines in salmon populations and they extended the data collected from Washington and Oregon households to households nationwide by assuming that residents outside of Oregon and Washington, on average, placed a value on salmon restoration equal to half that of Oregon and Washington residents. This is a conservative assumption according to other studies on the value of Pacific Northwest salmon for residents outside of the Northwest region. Table 10 summarizes their findings.

Table 10: The Economic Benefits of Restoring Salmon Populations and of Preventing Further Declines in Salmon Populations

The economic benefits to residents of Oregon and Washington of restoring salmon populations:	
Columbia River Salmon	$2,890 per fish
Washington Coastal Chum Salmon	$872 per fish
Oregon Coastal Coho Salmon	$872 per fish
Rogue River Coastal Coho Salmon	$872 per fish
Puget Sound Chinook Salmon	$872 per fish
The economic benefit per year, to residents of Oregon and Washington, of preventing further declines in wild-salmon populations:	
Preventing a one-third decline in populations	$359 million - $3.6 billion
Preventing a two-thirds decline in populations	$718 million - $7.2 billion
The economic benefit per year, to residents of the U.S., of preventing further declines in wild-salmon populations:	
Preventing a one-third decline in populations	$5.4 billion - $54 billion
Preventing a two-thirds decline in populations	$10.9 billion - $109 billion

Source: ECONorthwest with data from Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy eds., *Frontiers in Ecological Economic Theory and Application*. Northampton, MA: Edward Elgar.

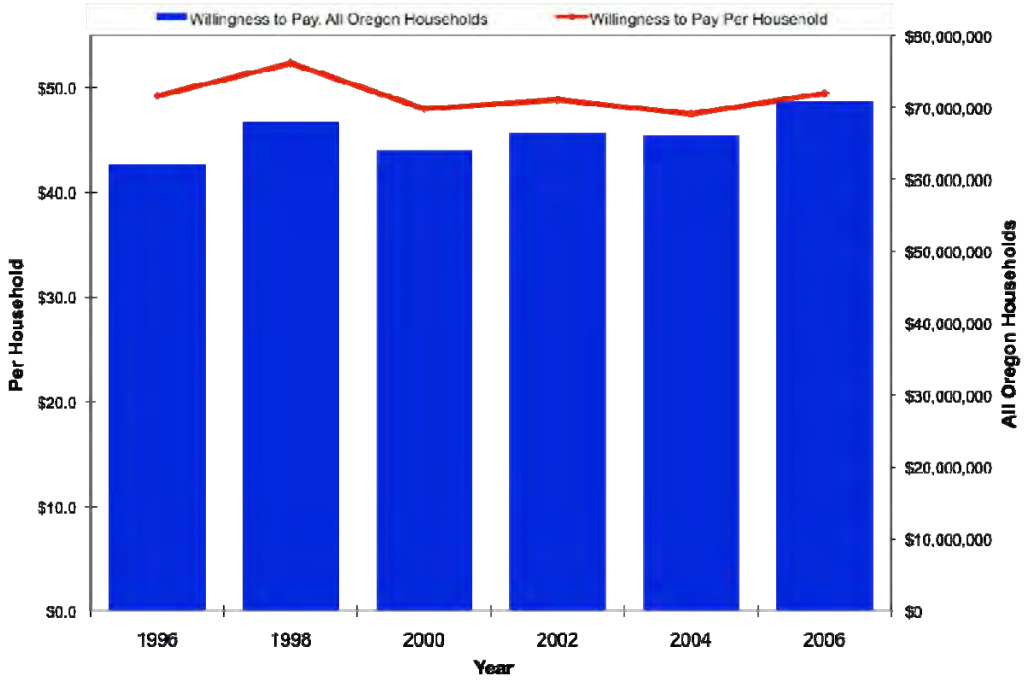
[27] Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy, eds., *Frontiers in Ecological Economic Theory and Applications.* Northampton, MA: Edward Elgar.

One of the disadvantages of the reports of non-use value viewed thus far is that they take data only from one point in time and do not allow us to observe how residents' willingness to pay for salmon recovery changes with changes in the economy and social structure. To observe trends in Oregonians' willingness to pay for salmon habitat restoration and improved water quality, we look at the Biennial Oregon Population Survey, conducted by the Oregon Office of Economic Analysis and the Oregon Progress Board. The survey provides data from as far back as 1996 and asks Oregon residents, how much per month they are willing to pay for water quality and habitat improvement efforts to help improve salmon runs in Oregon.

In 2006, the survey results showed, on average, that each Oregonian household was willing to pay $4.42 per month in 2008 dollars. Extending that value over the course of a year and multiplying the result by 1,333,723 Oregon households, indicates that Oregonians alone are willing to pay a total of $75,958,977 per year to improve salmon runs. Figure 2 shows the average annual amount Oregonians stated they are willing to pay for water quality and salmon habitat improvements based on the results of the Oregon Population Survey. The willingness to pay remains fairly constant (in nominal dollars) throughout the years for which data are available indicating that Oregonians are willing to make a long-term commitment to protecting and improving salmon habitat. It also indicates that Oregonians have a continued concern for the health of salmon runs which has not diminished significantly over time.

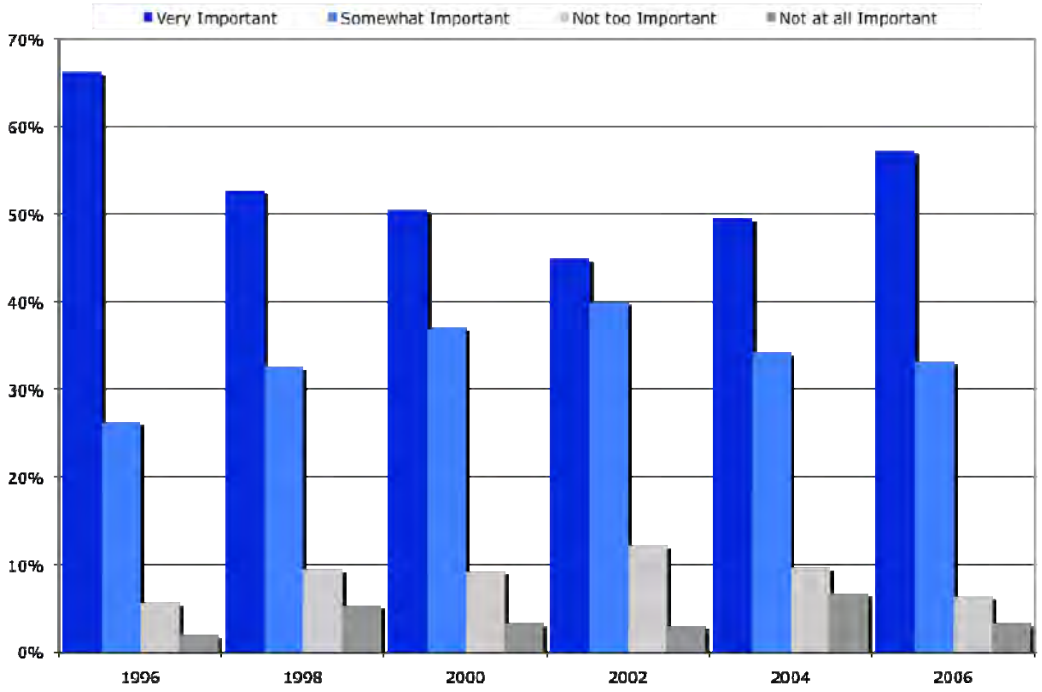
Figure 3 shows responses to another Oregon Population Survey question, "How important do you feel it is to improve salmon runs in Oregon?". It is noteworthy that in every year that the survey was conducted since 1996, over 80% of the respondents stated that improving salmon runs was very important or somewhat important and in all but two of the survey years, the majority of all respondents felt that improving salmon runs was very important.

Figure 2: Oregonian's Willingness to Pay for Water Quality and Habitat Improvement Efforts to Help Improve Salmon Runs in Oregon, In Current Year Dollars



Source: ECONorthwest with data from Oregon Progress Board. *Oregon Population Survey.* http://www.oregon.gov/DAS/OPB/popsurvey.shtml

Figure 3: How Important Do You Feel it is to Improve Salmon Runs in Oregon?



Source: ECONorthwest with data from Oregon Progress Board. *Oregon Population Survey.* http://www.oregon.gov/DAS/OPB/popsurvey.shtml

As shown by numerous surveys and studies, the continued existence of salmon and steelhead in the Pacific Northwest is very important to the local residents and is likely important to residents throughout the country. The non-use value reported in these studies has remained fairly steady over the past ten years and will likely remain so in future years. Consequently, government policies that preserve and/or enhance existing salmon and steelhead habitats have far-reaching benefits, which may not be captured by the market and these benefits will be felt by residents for many years to come.

SUMMARY

The findings of this report show that Rogue River salmon and steelhead are valuable assets to the Pacific Northwest with economic benefits that extends far beyond their market price. The commercial fishing industry for salmon and steelhead brings income into the regional economy through direct revenues and employment and is further increased by the multiplier effect. We estimate the economic value of the Rogue River to the commercial salmon fishery to be not less than $1.36 million annually.

The economic benefits society accrues from recreational fishing are even greater since the consumer surplus for each salmon and steelhead caught is typically greater than the angler's expenditures. Based on analysis of the academic literature, which includes studies of the sport value of salmon and steelhead throughout the Northwest, we estimate the annual value of all Rogue River salmon runs to be not less than $16 million.

By far, the most significant value associated with Rogue River salmon, is the non-use value to residents of Oregon, the Northwest, and the entire west coast. Based on the results of peer-reviewed, published studies and data from household surveys, we estimate the implicit value of all Rogue River salmon and steelhead runs to be approximately $1.5 *billion*—significantly greater than the total use value of Rogue River salmon. Households in the Pacific Northwest indicate they are willing to pay over eight hundred dollars per fish for salmon preservation and Oregonians consistently state a willingness to pay at least $70 million annually to enhance salmon habitat in the state.

Northwest salmon face the risk of extinction, in part, because healthy salmon habitat is scarce. As the supply of healthy salmon habitat diminishes and the risk of extinction increases, the marginal economic values associated with the remaining salmon and the cost of protecting remaining habitat will only grow. Any increase in the risk of extinction would negatively impact both the widely-recognized economic values of salmon discussed in this report, as well as the values that Congress recognizes to be "incalculable,"[28] including the spiritual, cultural, and health-related values that tribal members and others place on salmon and their habitat.[29] Protecting salmon habitat in the Wild & Scenic section of the Rogue River would reduce the risk of extinction of Northwest salmon.

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[28] House of Representatives. 1973. Report No. 93-4112. Pp.4-5.

[29] *See*, for example, Meyer Resources, Inc. 1999. *Tribal Circumstances & Impacts from the Lower Snake River Project: Executive Summary*, Columbia River Inter-Tribal Fish Commission. October.

"Despite the deprivations summarized previously, today, salmon remain connected to the core of tribal material and spiritual life. Faced with bleak present circumstances, and severely limited prospects for remedy, the tribal peoples still look first to the salmon with hope of a better future.

"Traditional activities such as fishing, hunting and gathering roots, berries and medicinal plants build self-esteem for Nez Perce peoples – and this has the capacity to reduce the level of death by accident, violence and suicide affecting our people. When you engage in cultural activities you

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build pride. You are helped to understand 'what it is to be a Nez Perce' – as opposed to trying to be someone who is not a Nez Perce. In this way, the salmon, the game, the roots, and the berries and the plants are the pillars of our world." –Leroy Seth, Nez Perce Elder

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Delivered via email on August 25, 2026

August 24, 2026

Re: Illinois River and Rough and Ready Creek Watersheds Oregon Resource Waters Advisory Committee, Written Comments

Mr. Aron Borok, and the Oregon Department of Environmental Quality:

On behalf of Patriot Nickel Corp, we thank the Department of Environmental Quality for the opportunity to participate in the Outstanding Resource Water designation rulemaking for the Illinois River and Rough and Ready Creek watersheds. This proposal risks deterring the kind of economic investment this region needs most right now, and we appreciate the seriousness with which DEQ and the Rulemaking Advisory Committee have approached it to date.

Southern Oregon is defined by the same qualities that make this rulemaking possible in the first place: water of exceptional clarity, a river system that sustains a thriving outdoor recreation economy, and a landscape worth protecting. Patriot Nickel has no interest in seeing that water quality diminished, and our future in this region depends on maintaining the same watershed integrity for which the nominating organizations are advocating. **Where we differ is not on the goal of preserving the area water quality, but on whether a categorical designation of this kind, that effectively eliminates the region's ability to have responsible economic advancement, is the right tool to achieve it and whether it is needed at all.** Southern Oregon's mineral resources represent a substantial, currently untapped multi-generational opportunity to diversify and strengthen the region's economy, one that need not come at the expense of the water quality DEQ aims to protect. We believe that Southern Oregon can have both high-quality water and a strong economy to support it.

Based on our review of the draft rule language, the draft Fiscal Impact Statement, and the discussion at the Committee's second meeting, we remain unconvinced that this designation responds to any identified or documented threat to water quality in either watershed, beyond natural causes such as wildfire that no regulatory designation can prevent. We are concerned that a rulemaking of this permanence is moving forward, without the thorough fiscal, ecological, and legal groundwork that it warrants.

The comments below set out clearly our specific concerns with the proposed statutory language and the draft Fiscal Impact Statement. We respectfully ask that DEQ weigh them carefully as the process continues, and we welcome the chance to keep engaging constructively.

Draft Statute Language

"OAR 340-041-0275(4) The following waters are designated as Outstanding Resource Waters of Oregon (ORWs): …

(b) Rough and Ready Creek

(A) All of Rough and Ready Creek including Rough and Ready Lake.

(B) All tributaries, springs, associated wetlands and other waters of the Rough and Ready Creek watershed, excluding the reach of Parker Creek from its boundary with the Rogue-River Siskiyou National forest downstream to its confluence with Rough and Ready Creek."

DEQ has already established a workable model for this kind of designation, and we would encourage the agency to follow it here. The North Fork Smith River's Outstanding Resource Water designation, at OAR 340-041-0305(4), does not rely on the catch-all reference to "all tributaries." It names each tributary while preserving flexibility for DEQ and stakeholders alike through non-exhaustive framing ("include but are not limited to"). We ask that the same approach be applied to Rough and Ready Creek: identify the known perennial tributaries, named springs, and mapped wetlands of the watershed, using that same non-exhaustive language if DEQ wishes to preserve coverage of features not yet identified. After all, one could argue that every piece of land drains into another and eventually into a named creek or river— therefore impacting all of Southern Oregon.

The Rough and Ready Creek nomination letter itself acknowledges that "most springs, the wetlands they form, and other waterbodies in Rough and Ready Creek's [watershed] have not been mapped." If the nominating organizations and the state do not yet know where many of these features are, it is difficult to see how any party could reliably determine in advance whether a proposed activity would degrade water quality within the designated ORW. A designation that cannot be located on the ground is a designation that cannot be complied with, and one that leaves everyone worse off, DEQ exposed to inconsistent enforcement, stakeholders to unpredictable outcomes, and the resource itself to protection that exists on paper but without a defined boundary in practice.

> **We suggest that the mapping and identification work the nomination letter itself calls for be substantially completed, or at minimum incorporated into the rule through a defined and named list similar to OAR 340-041-0305(4), before the designation is finalized.**

Fiscal Impact Statement

Local Government Impact

This is the first Outstanding Resource Water designation in Oregon's history to place an incorporated municipality's permitted wastewater discharge inside, or immediately upstream of, a designated ORW. Given that precedent, we find the draft Fiscal Impact Statement's treatment of "Local Government" impact strikingly thin for a scenario this novel, and we address it alongside our comments on the FIS's "Public" impact finding below, where we believe the more significant analytical gap lies.

Setting that gap aside for now, we would ask DEQ to expand the Local Government Impact section to address, at a minimum, the following foreseeable scenarios for the City of Cave Junction and its neighbors:

- **If seasonal effluent discharge to the Illinois River becomes infeasible, or a new or expanded NPDES permit is otherwise needed for the wastewater treatment plant, would the ORW designation's prohibition on new or increased discharges restrict the City's ability to obtain that permit**— and if so, would the City be pushed toward alternative disposal methods (land application, storage, or an underground injection well under a WPCF permit), or toward potential ORW violations and associated penalties?
- The FIS notes the plant is currently operating at 44 percent of wet-weather and 40 percent of dry-weather design capacity. **What happens when population growth in Cave Junction, or increased demand from surrounding areas, eventually requires the City to increase its design flow?** If the FIS's conclusions depend on the plant remaining near current capacity indefinitely, that assumption should be stated and tested, not left implicit.
- **Has DEQ analyzed how this designation would affect the unincorporated communities of Selma and Kerby, both located along the Highway 199 corridor bordering the nominated watershed?** Neither is currently served by Cave Junction's municipal system, but both are populated, growing, and sited on the same serpentine, low-permeability soils that limit septic performance elsewhere in the valley. If either community's water or wastewater needs eventually require interconnection with, or independent permitting near, the ORW, the FIS should say so now and estimate the cost, rather than leave it for a future rulemaking that treats the ORW boundary as already settled.

We raise these questions because a fiscal impact statement that leaves the most direct and foreseeable local government cost and impact in this rulemaking largely unexamined is not fully analyzed and complete.

Public Impact

The current draft of the Fiscal Impact Statement contradicts itself on this point. Under "Local governments," the FIS acknowledges that "there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers." Yet directly below, under "Public," the same document states: "DEQ does not expect a fiscal impact to the public as a result of this rule." Cave Junction's ratepayers are members of the public. A cost imposed on them through their utility bill is, by definition, a fiscal impact on the public, and DEQ cannot credibly disclaim one while acknowledging the other in the same document.

That analysis matters more here than it would in most rulemakings, because Cave Junction is not a typical tax base. The FIS's own environmental justice section acknowledges that the city's supplemental demographic index ranks worse than 80–90 percent of the United States, driven by

high unemployment and an aging population. Independent Census[1] data confirms the same picture in dollar terms: Cave Junction's median household income runs around $39,000, less than half of Oregon's statewide median of roughly $88,700, and more than a quarter of residents live below the federal poverty line. This is, by DEQ's own admission elsewhere in the FIS, one of the more economically fragile communities affected by this rulemaking, and it is also the one community whose municipal infrastructure sits closest to, and most directly implicated by, the proposed designation.

The economics of small utility systems make this worse, not better. Research on water and wastewater affordability consistently finds that per-household costs rise as system size shrinks: EPA's 2024 Water Affordability Needs Assessment[2] cites peer-reviewed findings that "affordability improves significantly as utility size increases," and points to one state rate assessment in which small community water systems charged more than 50 percent more per household than larger systems for the same service. Cave Junction's wastewater utility, serving a small and largely fixed customer base, has little ability to absorb or spread the cost of alternative treatment, storage, or disposal infrastructure if the ORW designation forecloses its current discharge option. Any such cost will land on a tax base that, by DEQ's own data, is already among the least able in the state to bear it.

> We raise this because a fiscal impact statement is supposed to tell decision-makers and the public who actually pays, and on the one occasion this FIS identifies a concrete, foreseeable cost, it simultaneously declares in the very next section that no such cost exists. **We would ask DEQ to reconcile the two findings and give the potential impact to Cave Junction's ratepayers the seriousness a fiscal impact statement is meant to provide.**

Large/Small Business Impact

There are various businesses adjacent to the proposed designation boundaries, and possibly within, that have existing water rights. We'd be interested to know 1) if and how this designation would affect them, and 2) if there has been proper correspondence and outreach to these parties for engagement in the statute and FIS.

Additionally, we believe there are two vital gaps that run through this section of the draft Fiscal Impact Statement, and we'd ask DEQ to address both before the rule advances.

First, while the FIS carefully accounts for the roughly 2,300 acres of industrial forestland within the watersheds, concluding that continued timber harvest is unaffected because it is already governed by the Forest Practices Act and the forthcoming Rogue River Temperature TMDL, it does not once mention that these same watersheds sit atop some of Oregon's most significant laterite nickel deposits, deposits Patriot Nickel holds active mining claims to develop, which are not newly asserted interests. Patriot Nickel's mining claims in this watershed predate the 2015 Southwestern Oregon Mineral Withdrawal and were grandfathered in as valid existing rights when that withdrawal

took effect— meaning federal law has already recognized and preserved our right to develop these deposits, even as the surrounding land was set aside from new mineral entry. **The FIS carefully accounts for the existing interests of the timber industry and gives full effect to the goals of the nominating conservation organizations; therefore we believe our long-established mineral rights in this same watershed deserve no less consideration in this analysis.**

A FIS that inventories the forestry industry's stake in this land but omits the mineral industry has not accounted for the full range of large-business interests this rule affects, in a region that has had little industrial investment to account for since the decline of its timber industry.

Second, and more fundamentally, the FIS performs no opportunity-cost analysis at all. It quantifies, in real dollars, what the economic impact of tourism is for the region but quantifies nothing about what the region stands to lose if a mineral development pathway is foreclosed. That asymmetry matters in a document whose stated purpose is to weigh fiscal and economic impact, particularly given that both nominating organizations identified the prospect of mining, not any existing or observed water quality problem, as the central rationale for this designation. **If mining is significant enough to justify the rule, it is significant enough to appear in the fiscal analysis of it.**

Based on initial independent third-party analysis of the four Patriot Nickel claim sites that sit within the nominated ORW boundary, the numbers this designation puts at risk are not marginal. Site development, civil works, buildings, power infrastructure, communications, and equipment fleet procurement across the four sites represent an estimated $200 to $240 million in direct capital investment, nearly all of it spent locally, including through regional heavy-equipment dealers who would supply and service the fleet. Once operating, those same four sites represent an estimated $80 to $120 million in direct annual spending on payroll, local supplies, fuel, power, utilities, and haulage. Unlike the tourism revenue the FIS values at $155 million annually for the region, revenue that necessarily ebbs and flows with the season, this spending would recur every year for the projected 40- to 50-year productive life of the mines. Even without adjusting for inflation, growth, or the time value of money, that means the annual operating spending alone could total somewhere between $3.2 billion and $6 billion over the life of these operations: a sustained, multi-generational economic presence in a county that has not seen investment at this scale since before the timber industry's decline.

The employment picture tells the same story. We project approximately 45 to 50 direct front-line employees at each of the four sites, plus roughly 20 central office and staff positions, for a combined direct workforce of approximately 200 to 220 employees sustained for the life of the mines, before counting the estimated 300 to 500 construction and construction-related jobs the build-out phase alone would support. Front-line mining jobs of this kind are, by national and regional experience, easy-entry, high-earning roles that do not require a four-year degree, exactly the kind of accessible, family-wage employment pathway a rural county needs most. Using the National Mining Association[3] industry-wide average, 1.72 indirect and induced jobs supported for

every direct mining job, based on the association's 2023 national data, direct employment at these four sites alone would be expected to support roughly 340 to 380 additional local jobs in trucking, equipment supply, hospitality, and other regional services. That is before counting the refinery facility we are separately evaluating outside the ORW boundary, whose own viability depends on ore sourced from within it, and which represents a further $300 to $400 million in direct construction spending and $10 to $20 million in annual operating spending on its own.

We recognize these are forward-looking projections, but they are not speculative in the sense of being untested. The Eagle Mine in Marquette County, Michigan, the only other primary nickel mine currently operating in the United States, directly employs roughly 200 workers at an average regional mining wage of $117,000, more than double the county's average wage for all jobs, and mining today makes up roughly a fifth of that county's total economy following a decline in the area's own historic timber industry[4]. We offer that as a scale comparison, not a substitute for Josephine County's specific circumstances, ore body, mine design, and regional economics all differ. But it demonstrates that investment of this magnitude and duration from a modern U.S. nickel operation is a documented outcome elsewhere, not a hypothetical one.

Southern Oregon's own history makes the same point more directly. The Riddle Mine, operated for 44 years as the Hanna Nickel Smelting Company's Nickel Mountain operation, demonstrates that a project of this scale is not foreign to this part of the state, but a proven regional outcome. At its peak it directly employed approximately 500 people annually, producing an average of roughly 12,000 to 13,000 tons of nickel metal each year from laterite ore averaging approximately 1.4% nickel—worth, at today's nickel price of approximately $7.50 per pound, roughly $200 to $225 million in annual in-situ metal value, or $8.8 to $9.9 billion cumulatively over the life of the operation. That steady, year-round employment drew workers and their families to the area, generating sustained local demand for housing, services, and small businesses for nearly half a century.

> **We'd respectfully request that DEQ take into consideration the full spectrum of fiscal impact that this designation would represent because a fiscal impact statement that puts a real number on the revenue of one kind of economic activity and no number at all on the cost of foreclosing another has not actually weighed the fiscal impact of the rule.** Additionally, we'd like to note that the revenue a mining project could generate for the area has the potential to complement, not diminish or deter, the existing revenues from tourism in the area.

Environmental Justice

"Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener indicated that the supplemental demographic index was worse than 80-90% of the US. This is primarily driven by high levels of unemployment and an older population."

DEQ's own analysis establishes that this region qualifies as an environmental justice community in the fullest sense the term carries under Oregon law. ORS 182.535 defines an "environmental justice community" to include "communities experiencing lower incomes" and "rural communities" specifically. By DEQ's own admission in this FIS, Cave Junction and the surrounding area meet that definition on economic grounds alone, independent of any pollution-exposure analysis.

That framing raises the actual question we ask DEQ to answer: environmental justice, as Oregon defines it, is not only about shielding a vulnerable community from environmental burdens. It is also about fair treatment in the decisions that shape its economic future. This region has already lived through the foreclosure of one resource-based industry. This rulemaking, without ever analyzing the tradeoff, would foreclose a second in a county the agency itself has flagged as economically fragile— while, as detailed in our comments on the FIS's "Public" impact finding, simultaneously raising the prospect of higher utility costs for the same residents if Cave Junction's wastewater treatment plant eventually needs upgrading.

An environmental justice community, by DEQ's own designation, would face costs rising and opportunity narrowing at the same time under this rule, and neither half of that ledger appears in the FIS's environmental justice analysis.

> **We ask DEQ to explain how declining to weigh that combined effect is consistent with the fair-treatment principle the statute is built on: whether "fair treatment" of an EJ community can mean it pays more and gains less, in the same rulemaking, without either cost ever being examined.**

General Concerns & Considerations

The vast majority of land within these watersheds is not privately held or state-managed, it is managed by the U.S. Forest Service and the Bureau of Land Management. The Illinois River watershed alone includes roughly 306,000 acres managed by the Rogue River-Siskiyou National Forest and another 8,000 acres managed by BLM's Medford District, together comprising approximately 81 percent of the basin; the Rough and Ready Creek watershed is almost entirely federal, with BLM managing its lowest reach as an Area of Critical Environmental Concern and the Forest Service managing the remainder.

> We recognize that ORS 183.335 does not require DEQ to prepare a fiscal impact statement for federal land management agencies, but given that these two federal agencies manage the overwhelming majority of the land this designation would affect, **we believe it would be prudent, and consistent with the spirit of a complete fiscal analysis, for DEQ to include some assessment on how the proposed designation would affect USFS and BLM's responsible forest management practices and plans, even where the statute does not compel it.**

Additionally, in most mountainous regions, natural causes (wildfire, landslide, debris flow) can significantly affect the water quality of rivers, tributaries, and wetlands, independent of any human activity. This is not hypothetical in these particular watersheds: the Rough and Ready Creek nomination letter itself acknowledges that most of the creek is already 303(d)-listed for temperature, and that the U.S. Forest Service attributes the elevated temperatures to natural conditions rather than human activity, even though roughly 90 percent of the watershed is wilderness or inventoried roadless area. A documented water quality impairment already exists today, in a watershed with essentially no industrial development, which means the mechanism DEQ uses to distinguish natural degradation from a permit violation is not an abstract question, but one this rulemaking should answer before, not after, a dispute arises.

Given this, we ask DEQ to clarify the following questions:

- **How does the agency investigate a suspected degradation event within an ORW and determine whether it was caused by natural conditions, an existing NPDES or WPCF permit holder, or some other source?** These watersheds present a genuinely difficult attribution problem: remote and largely roadless terrain, a braided and dynamic channel system across Rough and Ready Creek's alluvial fan, extensive hyporheic exchange between surface water and groundwater, and a documented history of both natural sediment events and naturally elevated temperatures.
- Against that backdrop, **what specific methodology, monitoring baseline, or standard of evidence would DEQ apply to trace a detected exceedance to a particular discharge**, as opposed to the same natural variability the record already documents in these watersheds?
- **Is this determination complaint-driven, and if so, would an increase in complaints carry a fiscal impact to DEQ that the FIS should account for?** The FIS states, under "State agencies," that DEQ anticipates "few direct impacts" from this rule and expects any new antidegradation analysis to require "little to no additional staff time." That conclusion does not appear to account for the investigative workload of fielding and resolving complaints in a newly designated ORW, particularly one whose nomination was driven by organized advocacy groups likely to remain engaged in monitoring it going forward. If enforcement here is complaint-driven, we would ask DEQ to estimate that workload and disclose it as part of the statutorily required cost of compliance to the agency itself, rather than let the FIS's "few direct impacts" finding stand as the final word on DEQ's own fiscal exposure.

Conclusion

We thank DEQ and the Rulemaking Advisory Committee again for the time and care this process has already required, and for the opportunity to be part of it. Nothing in the comments above is offered in opposition to protecting the water quality of the Illinois River or Rough and Ready Creek, a goal Patriot Nickel shares and one our own operations would be required to meet under existing environmental and antidegradation law whether or not this designation is adopted.

While we believe this designation is unnecessary given the environmental protections that already govern any future development in this watershed, these comments are offered in the narrower spirit of getting the details right before a determination of this scale and permanence proceeds: statutory language precise enough to be located and complied with, a fiscal impact analysis that accounts for the full range of parties and costs this rule touches, and an enforcement framework capable of telling the natural processes already at work in these watersheds apart from any genuine threat to their water quality. As these comments have detailed, a designation of this magnitude carries real fiscal and social costs for the local community, particularly where it would foreclose responsible development in areas that would not compromise the water quality this rule is meant to protect, and we ask that DEQ examine those costs in full before the rulemaking proceeds.

We would welcome the opportunity to discuss these comments further with DEQ and the Committee as the rulemaking moves forward, and we remain committed to engaging constructively and in good faith throughout whatever process follows.

Sincerely,

Jeffrey Strobel
CEO, Patriot Nickel Corporation

[1]Oregon Employment Department, QualityInfo, "A Closer Look at Oregon's Median Household Income." https://www.qualityinfo.org/-/a-closer-look-at-oregon-s-median-household-income

[2] U.S. Environmental Protection Agency, 2024. *Water Affordability Needs Assessment: Report to Congress*. December 2024.https://www.epa.gov/system/files/documents/2024-12/water-affordability-needs-assessment.pdf

[3]National Mining Association, 2024. *The Economic Contributions of U.S. Mining* (2023 data one-pager). https://friendsofcoalwest.org/wp-content/uploads/2024/12/economic-contributions_2023_data_onepager.pdf

[4]Tran, Tu-Uyen, 2025. "A Fifth of This Upper Peninsula Community's Economy Is Mining. Can It Diversify?" Federal Reserve Bank of Minneapolis, June 4, 2025. https://www.minneapolisfed.org/article/2025/a-fifth-of-this-upper-peninsula-communitys-economy-is-mining-can-it-diversify

In response to DEQ's request to evaluate the cost of extraction operations without an NPDES permit under the proposed ORW, we asked our third-party engineering consultants to evaluate a zero-discharge approach, in which all contact water would be captured, stored, and evaporated on site.

While this approach is technically possible, their analysis shows it would be financially infeasible and could introduce environmental risks that work against the shared goal of protecting these watersheds.

SITE CONDITIONS

The project area receives approximately 60-65 inches of precipitation per year, most of it between October and May. Zero-discharge operations have been implemented successfully in more arid climates, but this volume of rainfall presents a very different water management challenge.

Our consultants modeled one site, assuming roughly 1,000 acres of disturbed land requiring water collection. **Because precipitation is consistent across the region, that analysis applies to each of our four mining claims within the proposed ORW area.**

WATER MANAGEMENT REQUIREMENTS

Requirement	Per site
Annual water collection	Approximately 5,200 acre-feet, primarily October through May
Minimum storage	Approximately 4,700 acre-feet for a single year of accumulation, after natural evaporation offsets only 20-35 inches of annual precipitation
Impoundment footprint	Approximately 300-350 acres of additional disturbance for lined ponds at a 20-foot depth; more capacity required if water is not fully removed each year
Mechanical evaporation	Approximately 400 evaporator units operating June through September
Power	An estimated 15-20 megawatts, from extended grid power or diesel generation

COST ESTIMATES

Cost item	Per site	Across four claims
Lined impoundments	$200M - $400M*	$800M - $1.6B*
Mechanical evaporators	$100M - $250M**	$400M - $1B**
Annual operating cost of mitigation setup	$30M - $60M***	$120M - $240M***

** Impoundment costs vary by site conditions and liner system (compacted clay or single- or double-layer HDPE); ** evaporator costs vary by layout and piping and pumping needs; *** operating costs vary by power source.*

Across all four claims, this amounts to an estimated $1.2 billion to $2.6 billion in capital costs and $120 million to $240 million in annual operating costs, or $4.8 billion to $12 billion over the 40-to-50-year productive lifespan of the mines. **These costs would render the projects infeasible.**

ENVIRONMENTAL CONCERNS

The zero-discharge approach would also create environmental impacts that a permitted discharge would avoid:

- **Watershed effects:** Across four sites, roughly 20,000 acre-feet of water per year would be evaporated rather than returned to the Illinois River and Rough and Ready Creek. Removing that volume from the system could reduce downstream flows, particularly during the summer months when flows are already lowest.
- **Additional land disturbance:** Up to 1,200-1,400 acres of new impoundments across the four claims, on top of the mining footprint itself.
- **Permitting conflict:** The impacts of impounding this volume of water could make other required permits difficult to obtain, meaning that avoiding an NPDES permit may leave no viable permitting path at all.

REQUEST

We respectfully ask that DEQ include these compliance costs in the fiscal impact statement, along with the lost opportunity cost to the four mining claims within the proposed boundary should the ORW designation proceed.

To reiterate, our analysis estimates that operating within the constraints of an ORW designation would require **$1.4 billion to $2.6 billion in initial capital costs** and **$4.8 billion to $12 billion in operating costs** over the 40-to-50-year productive life of the mines.

Costs of that magnitude would render the projects infeasible. Per our prior RAC comments, the resulting lost opportunity would include **$200 million to $240 million in direct capital investment** and **$3.2 billion to $6 billion in operating expenditures** over the life of the projects. *These figures do not include the refinery facility we are separately evaluating outside the ORW boundary. Since the refinery's viability depends on ore sourced from the claims within the boundary, the designation would also put at risk an additional $300 million to $400 million in direct construction spending and $400 million to $1 billion in operating spending over the same 40-to-50-year period ($10 million - $20 million annually).*

State of Oregon
DEQ Department of Environmental Quality

Illinois River and Rough and Ready Creek Outstanding Resource Water Rulemaking Draft Fiscal Impact Statement

Statement of fiscal and economic impact

Fiscal and economic impact

Executive Summary

The proposed rules would preserve benefits to businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributes $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

ORW rules protect the current water quality at the time the rules become effective. Commercial forest harvesting that may occur in the two watersheds can continue without impacting water quality as long as harvest rates do not increase and Forest Practice Act rules are followed. Moreover, these watersheds are included in the Rogue River Temperature TMDL that is currently being updated. This TMDL includes load allocations for forested areas that, as they are implemented through improvements in forest harvest practices, will improve water quality in the watershed. As these are already required through the TMDL irrespective of the ORW designation, the proposed rules will not have a fiscal impact on any industrial or commercial forest harvesting.

Under the proposed rules, DEQ cannot: 1. issue a new National Pollutant Discharge Elimination System permit or expand an existing NPDES permit to discharge wastewater to the ORWs; or 2. issue or expand an NPDES permit upstream of the ORWs if the discharge will result in lowering of water quality in the ORWs. DEQ can issue a Water Pollution Control Facility permit that does not allow a direct or indirect discharge to surface waters. These requirements may increase compliance costs for facilities wishing to operate in the watershed if such measures are not already required under existing regulatory requirements.

The proposed rules may impact residents of the City of Cave Junction. The City's wastewater treatment plant has a NPDES permit to discharge into the Illinois River approximately five miles upstream of the proposed ORW designation. At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. As there are five miles between the discharge and the ORW designation, and many other considerations besides the ORW, it's

possible that future expansion will not affect the water quality in the ORWs. However, if a future plant expansion would degrade water quality in the ORW, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Statement of cost of compliance

Federal agencies

US Forest Service – Rogue River-Siskiyou National Forest

There are few direct impacts to the Rogue River-Siskiyou National Forest. The agency manages most of the lands included in the ORW designations for Rough and Ready Creek and Illinois River. A large portion of the area that is proposed to be designated already has layers of protection afforded from Wild and Scenic River designation, Endangered Species Act protection for coho salmon critical habitat, and/or management standards from the Northwest Forest Plan's Aquatic Conservation Strategy. Any future planning efforts would require disclosure of the ORW designation in the public process required under the National Environmental Policy Act. This additional disclosure will likely require some additional staff time to address public comments and ensure that proposed actions are compliant with the standards of the ORW designation.

State agencies

DEQ

There are few direct impacts to DEQ. The proposed rules prevent new or increased wastewater discharges or regulated activities that would degrade the water quality of the Illinois River and Rough and Ready Creek from their current condition, other than construction projects with a short-term impact, which already require permits. Therefore, there should be no need to develop new permits, 401 certifications, or total maximum daily loads for these waterbodies. To the extent that Cave Junction plans for any expansion of its wastewater treatment system in the future, DEQ permitting staff will need to ensure that the expansion will not degrade water quality in waters proposed for ORW designation. The analysis needed to do so is the same or similar as what is required in any permit as part of antidegradation analysis. As a result, DEQ expects that the analysis will require little to no additional staff time.

DEQ also considers ORW designations as part of Division 33 water rights reviews that are coordinated through the Water Resources Department. However, since ORW designation is already a part of the form that DEQ staff fill out for Division 33 reviews, there will be minimal to no additional work needed to consider water rights applications in the waters proposed for ORW designation, other than that needed to update DEQ's database of ORW waters.

Local governments

The proposed ORW designation will continue to protect the recreational values of both Rough and Ready Creek and the Illinois River. As a result, the ORW designations are expected to support local revenue related to recreation and tourism.

The city of Cave Junction has an NPDES permit for its wastewater treatment plant that discharges to the Illinois River five miles upstream of the proposed ORW designation. The wastewater treatment plant only discharges to the Illinois River from November 1 to May 31.

From June 1 to October 31, the effluent from the wastewater treatment plant is used at a nearby golf course.

The city of Cave Junction last upgraded its wastewater treatment plant in 1998 to a system with an aerated activated sludge treatment plant with secondary clarifiers and an aerobic sludge digester. and is currently operating below capacity. As of the City's last permit renewal in 2022, the plant was operating at 44% of its wet weather design flow and 40% of its dry weather design flow on average.[1]

At some point in the future, there may be a need to increase the design flow of the plant to accommodate population growth. When Cave Junction requests an increased design flow, DEQ will conduct modeling to determine if the discharge will lower the water quality of the Illinois River where it is designated as an ORW. Given the distance (about 5 miles) between the discharge and the ORW designation, it's possible that future expansion will not have an effect on the water quality in the ORW designated waters. However, if there is potential impact on the ORW water quality from future plant expansion, alternative treatment options may be required with additional cost to Cave Junction rate payers.

Public

DEQ does not expect a fiscal impact to the public as a result of this rule.

Large businesses - businesses with more than 50 employees

The rules will not impact large businesses conducting industrial forestry but may impact other types of large businesses that require wastewater permits. Large businesses that have industrial forest holdings in the waters proposed to be designated as ORWs will not be impacted by the ORW designation. There are approximately 2300 acres of industrial forestlands in these waters (Figure 1). DEQ has determined that compliance with current state forest practice rules for standard harvest are sufficient to ensure that any harvest will not lower water quality. As a result, there will be no impact on large forestry businesses.

[1] See City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp. and ODEQ, 2022. National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.

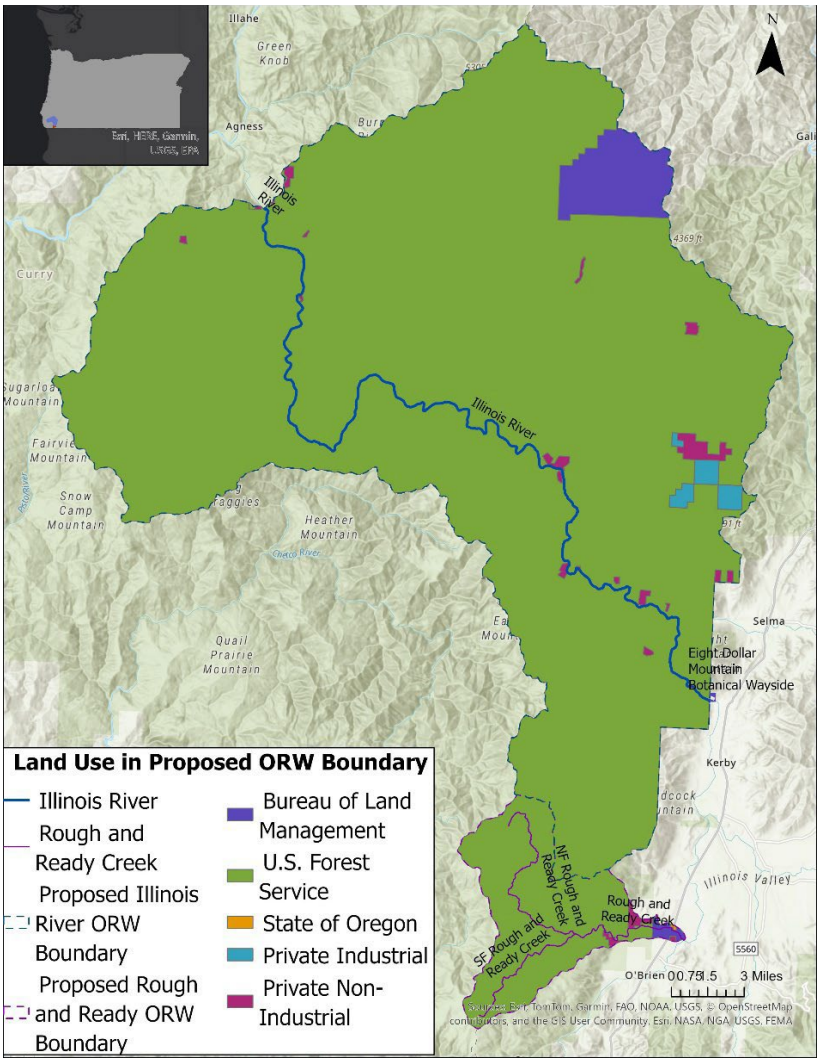

Figure 1. Map showing management of lands in the proposed Outstanding Resource Waters.

The rules may impact other large businesses that need a water quality permit. Absent the proposed rules, companies could obtain a National Pollutant Discharge Elimination System permit to discharge directly or indirectly to waters proposed for ORW designation. DEQ antidegradation rules allow a new NPDES permit if the discharge will meet any relevant TMDL requirements, protect endangered species, and result in no more than *de minimis* lowering of water quality, or more than *de minimis* lowering with DEQ or Environmental Quality Commission approval.[2]

Due to the proposed rules, businesses could not obtain an NPDES permit, but could apply for a WPCF permit, which does not allow direct or indirect discharge to waters of the state. For example, wastewater from operations could be placed in a lined holding pond or discharged to an underground injection well that had no connection to surface waters. Ensuring no discharge to surface waters could increase compliance costs to these companies, although compliance costs for monitoring could be less if there is no discharge.

[2] OAR 340-041-041-0004(6) and (9)

It is possible that these businesses would have to incur higher compliance costs irrespective of the proposed rules. Any operations within the area would need to undergo environmental review under the National Environmental Policy Act and Endangered Species Act if they were conducted on federal lands, which may require similar protective measures.

Small businesses – businesses with 50 or fewer employees

The proposed rules would preserve benefits to the many small businesses relying on revenue from recreational users in the Illinois River and Rough and Ready Creek and their watersheds by ensuring the waters are protected for continued recreation into the future. Overall, tourism contributed $155 million annually to Josephine County, supporting 2,230 jobs. (Visit Grants Pass, 2023).

DEQ examined if the proposed rules would impact owners of the approximately 31 small forest inholdings that are within the watersheds proposed for ORW designation. To the extent any of these owners are conducting commercial harvest, they are subject to Forest Practice Act rules and total maximum daily loads. DEQ is updating the Rogue River Temperature TMDL. If DEQ determines that current FPA rules are not sufficient to meet load allocations in forested lands, DEQ may request rule revisions through our existing memorandum of understanding with ODF. TMDL implementation may also require non-regulatory measures such as stewardship agreements, or incentive programs that may provide reasonable assurance of achieving load allocations for temperature.[3] As these measures are implemented, water quality will improve as a co-benefit. As a result, DEQ determined that ORW designation itself will not have fiscal impacts to public forests or owners of industrial or small forest inholdings, as they already will be subject to any requirements that come from TMDL implementation.

ORS 183.336 Cost of Compliance Effect on Small Businesses

a. Estimated number of small businesses and types of businesses and industries with small businesses subject to proposed rule.

Owners of small forest inholdings within the watershed of proposed ORW designation may be subject to the rule. Based on examination of the Josephine County Property Data viewer, there are approximately 21 small inholdings totaling 772 acres within the Wild and Scenic Illinois River and ten within the Rough and Ready Creek watershed (Figure 1). It is unclear whether these inholdings are owned by small businesses, family-owned properties or non-profits and the extent to which any of these owners conduct commercial harvest on these inholdings.

b. Projected reporting, recordkeeping and other administrative activities, including costs of professional services, required for small businesses to comply with the proposed rule.

The proposed rule will not require additional requirements for small businesses to comply with the proposed rule.

[3] DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.

c. Projected equipment, supplies, labor and increased administration required for small businesses to comply with the proposed rule.

DEQ does not anticipate additional equipment, supply, labor or increased administration for small businesses to comply with the proposed rule.

d. Describe how DEQ involved small businesses in developing this proposed rule.

DEQ included small business representatives on the Illinois River/Rough and Ready Creek ORW Advisory Committee that advised DEQ on the cost of compliance for small businesses. This included representatives from recreational businesses, the forest industry, and the mining industry.

Documents relied on for fiscal and economic impact

Document title	Document location
Visit Grants Pass, 2023. 2022-2023 Annual Report. 28 pp.	Visit Grant's Pass website
Friends of the Kalmiopsis and Kalmiopsis Guides Association. 2024. "Nomination for Outstanding Resource Waters of the State of Oregon: Rough and Ready Creek, Its Tributaries, Springs and Associated and *(sic)* Wetlands." 29 pp.	ORW rulemaking website
Friends of the Kalmiopsis, Klamath-Siskiyou Wildlands Center and Kalmiopsis Audubon Society. 2024. "Nomination for Outstanding Resource Waters: The National Wild & Scenic Illinois River, its Tributaries, and Associated Wetlands." 26 pp.	ORW rulemaking website
City of Cave Junction, 2014. Wastewater Facilities Plan. 546 pp	Cave Junction website
National Pollutant Discharge Elimination System, Permit Renewal Fact Sheet, City of Cave Junction. 33 pp.	Upon request to DEQ
DEQ, 2026. Redline: Water Quality Management Plan: 2027 Rogue River Basin TMDL for Temperature, Draft for RAC 2 – May 21, 2026. 72 pp.	Rogue River Temperature TMDL Replacement Rulemaking webpage

Advisory committee fiscal review

DEQ appointed an advisory committee.

As ORS 183.333 requires, DEQ will ask for the committee's recommendations on:

- Whether the proposed rules would have a fiscal impact.
- The extent of the impact.
- Whether the proposed rules would have a significant adverse impact on small businesses; if so, then how DEQ can comply with ORS 183.540 reduce that impact.

Housing cost

As ORS 183.534 requires, DEQ evaluated whether the proposed rules would have an effect on the development cost of a 6,000-square-foot parcel and construction of a 1,200-square-foot detached, single-family dwelling on that parcel.

DEQ determined the proposed rules would have no effect on the development costs because the rules protect water quality in an area that is almost exclusively publicly owned with no residential development.

Racial equity

ORS 183.335(2)(a)(F) requires state agencies to provide a statement identifying how adoption of this rule will affect racial equity in this state.

There is no expected impact on racial equity due to adoption of this rule. The rulemaking will protect water quality in the two impacted watersheds. The population that may be impacted is 90% Caucasian, 8% Hispanic/Latino of any race and less than 1% of all other races as of the 2010 Census.

The watersheds that are the focus of this rulemaking are located in the ancestral lands of the Takelma Tribe, which in the 1850s were removed and relocated into the Coast or Siletz Reservation, home to the Confederated Tribes of Siletz Indians. Some members of the Takelma Tribe were later relocated to the Grand Ronde Reservation, home to the Confederated Tribes of Grand Ronde. This rule will add an additional layer of protection to aquatic resources that are within these ancestral lands.

Environmental justice considerations

ORS 182.545 requires natural resource agencies to consider the effects of their actions on environmental justice issues. DEQ considered these effects by analyzing the archive of EPA's 2023 Environmental Justice screening tool.[4] Cave Junction, the largest city in the area affected by this rule, like many communities in forested areas of Oregon, has experienced economic hardship following closure of almost all of the area's lumber mills. The 2023 EJ Screener

[4] https://pedp-ejscreen.azurewebsites.net/

indicated that the supplemental demographic index was worse than 80-90% of the US.[5] This is primarily driven by high levels of unemployment and an older population.

Environmental burden in the area is high for particulate matter due to the frequency of wildfires but is otherwise less than 50th percentile compared to the rest of the US for other environmental indicators.

There may be some concern about the impact of ORW designation on the timber industry These watersheds are primarily managed by the Forest Service as late successional reserves under the Northwest Forest Plan, meaning there is only limited stand treatment allowed. Moreover, the harvest that occurs already is subject to FPA requirements and will be subject to the Rogue River Temperature TMDL when it is finalized in 2027. As a result, DEQ determined that the ORW designation will not impact the timber industry, as these requirements will safeguard existing water quality.

DEQ included timber interests and staff from the City of Cave Junction to ensure that these communities were represented on the rulemaking advisory committee.

In addition, DEQ is holding at least one RAC meeting in Cave Junction and will also hold a public hearing on the proposed rules in Cave Junction to ensure that the most directly affected community can participate in the rulemaking.

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities.

For translation or other formats, visit DEQ's Civil Rights and Environmental Justice page.

[5] The supplemental demographic index combines the percent of the population in a given area with the following characteristics: 1. low-income; 2. disability; 3. less than high school education; 4. limited English speaking; 5. low life expectancy.

The Economic Value of Rogue River Salmon

Commissioned by the
Save the Wild Rogue Campaign,
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EXECUTIVE SUMMARY

In 2008, the ***Save the Wild Rogue Campaign*** engaged ECONorthwest to analyze the economic value of salmon and steelhead in the Wild & Scenic Rogue River. In this report, we summarize the results of our analysis, which is based on peer-reviewed, published research, results from the Oregon Population survey, and fish-count data published by the Oregon Department Fish and Wildlife.

Salmon are the quintessential icon of the Pacific Northwest with significant cultural and economic value. Based on the results of more than ten years of household surveys, Oregonians overwhelmingly and consistently state that protecting and enhancing salmon habitat is important.

West Coast residents alone enjoy more than $1.5 billion in economic benefit each year from the entirety of all Rogue River salmon and steelhead runs. Maintaining the current level of protection on the Rogue may not be sufficient to ensure that current and future residents will be able to enjoy this level of economic benefit.

In this analysis, we develop estimates for only three of the economic values associate with Rogue River salmon: commercial fishing, sport fishing, and non-use value. Non-use values represent the vast majority of the economic value of Rogue River salmon.

- $1.4 million annually associated with commercial fishing
- $16 million annually associated with sport fishing
- $1.5 billion annually associated with non-use values

For more than a decade, Oregonians have consistently stated that improving salmon habitat is important and have expressed a willingness to pay more than $70 million dollars per year to enhance salmon habitat in Oregon.

Oregon and Washington residents state a willingness to pay more than $800 per fish to increase Northwest salmon populations

The Wild & Scenic Rogue River is a national treasure. Each year, tens of thousands of rafters, anglers, hikers, and other sightseers visit the river, and recreate in or along it. Its cultural importance to many Americans is comparable to our most majestic National Parks and National Monuments.

Healthy salmon habitat is a necessary condition underlying the Wild & Scenic Rogue River's rich ecological abundance as well as the values derived from it. Today, while many salmon runs in the Northwest are either endangered or threatened, the majority of the Rogue's salmon runs remain relatively strong. Over the past decade, salmon and steelhead counts at Gold Ray Dam average nearly 87,000 fish annually. As residential and commercial development continues to degrade Northwest rivers, it becomes increasingly important to protect the scarce, healthy rivers such as the Wild & Scenic Rogue and its tributaries.

As global warming threatens to bring drastic weather changes to the Rogue Valley, the importance of streams flowing into the Rogue will only increase. They provide critical spawning grounds and cold water refugia for salmon and

steelhead. Increasing protection for these streams may serve to offset some of the adverse impacts on the Rogue River anticipated as the region experiences changes in climate in the coming years. The cold water provided by these streams will help mitigate increasingly warm summer water temperatures in the Rogue.

Enhanced protection of the critical streams that flow into the Wild & Scenic Rogue River is a virtually costless action that will lead to significant economic benefits for both the present and future generations. In light of the economic downturn currently facing the nation, the need for both immediate and long-term economic payoffs has never been greater. Investments in the protection of salmon habitat in the Wild & Scenic Rogue will continue to provide economic benefits to society for many generations. The results presented in this report demonstrate that Rogue River salmon and steelhead provide large net benefits to society. Policy-makers should take steps now to protect the Wild & Scenic Rogue River habitat so that society may begin reaping the benefits of these actions today.

INTRODUCTION

The Save the Wild Rogue Campaign engaged ECONorthwest[1] to analyze the economic value of salmon and steelhead in the Wild & Scenic Rogue River. In assessing this value, ECONorthwest considered the benefits of salmon to the commercial fishing industry, to sport anglers, and for their intrinsic value to residents of Oregon and the West Coast. It is important to recognize the limitations of this analysis. Salmon have significant cultural value to Northwest Tribes, they provide benefits to the entire ecosystem of the Rogue Valley, and they are a valuable source of food for marine mammals. ECONorthwest did not attempt to evaluate the economic value of these important cultural and biological benefits. Thus, the values in this report should be viewed as lower bound estimates of the true economic value of salmon.

The Rogue River is extraordinary, both as a river and as salmon and steelhead habitat. Located in the southwestern corner of Oregon, the Rogue River flows approximately 215 miles from its headwaters in the Cascade Range, near Crater Lake, reaching the Pacific Ocean at the city of Gold Beach. In 1968 Congress designated an 84-mile stretch of the Rogue River from the confluence of the Applegate River (seven miles downstream of the City of Grants Pass) to the Lobster Creek Bridge (11 miles upstream of Gold Beach) as a National Wild and Scenic River. The Rogue River was one of the original eight rivers included in the Wild and Scenic Act, which protects from development or degradation certain rivers or river segments that have national significance.

The Wild and Scenic section of the Rogue River provides important habitat for a variety of wildlife including spring and fall Chinook, summer and winter steelhead, and coho salmon. This section of the river and its tributaries serve both as spawning grounds for certain anadromous fish and as an important migratory path for other anadromous species as they travel upstream to spawn or from spawning grounds to the ocean. The water quality in this section of the river and its tributaries affects the health of salmon and steelhead. Normal fish growth and productivity increases depend on cold stream temperatures, which helps regulate salmonid metabolic function. As stream temperatures rise, abnormal fish behaviors and mortality increase[2].

According to the National Marine Fisheries Service, the survival of Pacific Northwest salmon and steelhead—and the commercial harvests they support—depend on protecting and restoring habitat diversity and migratory connections among habitats[3]. The Rogue River is the spawning, rearing, and migration site

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[1] Throughout this report, the terms "we," "our" and "us" refer to the authors of this report at ECONorthwest.

[2] Heyn, K. 2008. White Paper on the Biological Contributions of Tributary Streams to the Wild Rogue River, Oregon. American Rivers.

[3] NOAA's National Marine Fisheries Service. 2006. *Salmon Habitat*. Retrieved December 1, 2008, from http://www.nwr.noaa.gov/Salmon-Habitat/index.cfm.

for nearly 100,000 anadromous fish returning from the ocean each year. Only the Columbia River produces more Pacific Salmon in the state of Oregon[4]. As salmon populations in other rivers in the Pacific Northwest decline, healthy habitats such as the Rogue River become even more important and valuable.

Conserving healthy salmon populations also reinforces recreational, aesthetic, and other economically significant amenities in the Pacific Northwest. Workers benefit from healthy salmon habitats by living amid high-quality natural-resources amenities. In effect, workers receive a second paycheck—denominated in access to scenic vistas, outdoor recreation opportunities, etc.—that augments the first paycheck earned through work and investments. In fact, evidence suggests that the second paycheck is great enough to offset the potential benefits that would accrue from attracting more businesses to the region through environmental deregulation. In a 1993 survey, the Oregon Business Council asked Oregonians, "Which is more important to economic growth in Oregon? Relax environmental regulations to make it easier for companies to do business or maintain a quality environment to attract people and companies to Oregon?" Of the 90 percent of the respondents who had an opinion, over four times as many wanted Oregon to "maintain a quality environment" than to "relax environmental quality [5].

High environmental quality standards do not indicate that businesses have fewer incentives to locate in the Pacific Northwest region. The quality of life in the Pacific Northwest, characterized largely by its natural resources, also attracts new residents who often have higher levels of education than current residents and they often are willing to accept reduced earnings to live in the Pacific Northwest[6]. Attracting high-quality workers at lower costs relative to other regions of the country, helps businesses in the Pacific Northwest compete with firms elsewhere, thus strengthening this region's economy.

Studies of federal lands in the Pacific Northwest found that, on a per-acre basis, the economic value of fishing exceeds the values of all other recreational activities[7]. Protecting salmon habitats helps improve the quality of other recreational activities, such as fishing and boating, which enhance the economic value of the region's natural resources.

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[4] Heyn, K. 2008. *White Paper on the Biological Contributions of Tributary Streams to the Wild Rogue River, Oregon*. American Rivers.

[5] Oregon Business Council. 1993. *Oregon Values and Beliefs: Summary.* May.

[6] Judson, D.H., S. Reynolds-Scanion, and C.L. Popoff. 1999. "Migrants to Oregon in the 1990's: Working Age, Near-Retirees, and Retirees Make Different Destination Choices." *Rural Development Perspectives* 14 (2): 24-31.

[7] Forest Ecosystem Management Assessment Team. 1993. *Forest Ecosystem Management: An Ecological, Economic, and Social Assessment*. Forest Service, Fish and Wildlife Service, National Marine Fisheries Service, National Park Service, Bureau of Land Management, and Environmental Protection Agency. 794-478. July.

SALMON AND THE ENDANGERED SPECIES ACT

Twenty-nine species of West Coast salmon and steelhead are listed as either endangered or threatened under the Endangered Species Act (ESA) and two species are listed as a species of concern[8]. Table 1 summarizes the 2008 ESA listings for West Coast salmon and steelhead. Coho salmon, which use the Wild & Scenic section of the Rogue River as a migratory path to spawning grounds on the Upper Rogue River, are a threatened species. Coho salmon occupy approximately fifty percent of their historic range and scientists are concerned about further population loss in larger river basins such as the Rogue, Klamath, and Trinity Rivers[9].

Overfishing used to be the major cause of salmon decline, but in recent years, loss of freshwater habitat has become the largest threat to salmon populations. Habitat degradation occurs through mining, logging, cattle grazing and agricultural practices, and blockage of river systems by dams for electricity generation, flood control, and irrigation[10].

NOAA's National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service share responsibility for the listing of species under the Endangered Species Act.[11] NMFS manages marine and anadromous species, including all species of west coast salmon and steelhead. Economic factors are not to be considered by NMFS when determining if a species is sufficiently at risk of extinction that it warrants listing as a threatened or an endangered species under the provisions of the ESA. The agency also is not to consider economic issues when it determines whether or not to provide legal protection to a listed species. Instead, these determinations are to be based solely on biological factors. Economics comes into play only when, for each listed salmon species, the Secretary of Commerce designates critical habitat, an action that restricts federal agencies from taking actions that would destroy or adversely modify habitat essential to conserving the species. Before making this determination, the Secretary must consider all the economic impacts, plus national-security and other impacts. Following this accounting, the Secretary may exclude an individual area from the designation only if the benefits of exclusion for that area outweigh the benefits of designation.

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[8] NOAA's National Marine Fisheries Service. 2008. *Snapshot of Salmon & Steelhead ESA Status*. http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm.

[9] NOAA's National Marine Fisheries Service Southwest Regional Office. *Southern Oregon/Northern California Coast Coho ESU*. Retrieved Nov. 20, 2008 from, http://swr.nmfs.noaa.gov/recovery/Coho_SONCCC.htm.

[10] Montgomery, C.A. and T.L. Helvoigt. 2008. *Trends in Oregonians' Willingness to Pay for Salmon*.

[11] NOAA is the National Oceanic and Atmospheric Administration.

Table 1: Endangered Species Act Status of West Coast Salmon & Steelhead

	Species	Endangered Species Act Listing Status	ESA Listing Actions Under Review
Sockeye Salmon (Oncorhynchus nerka)	Snake River	Endangered	
	Ozette Lake	Threatened	
Chinook Salmon (O. tshawytscha)	Sacramento River Winter-run	Endangered	
	Upper Columbia River Spring-run	Endangered	
	Snake River Spring/Summer-run	Threatened	
	Snake River Fall-run	Threatened	
	Puget Sound	Threatened	
	Lower Columbia River	Threatened	
	Upper Willamette River	Threatened	
	Central Valley Spring-run	Threatened	
	California Coastal	Threatened	
	Central Valley Fall and Late Fall-run	Species of Concern	
Coho Salmon (O. kisutch)	Central California Coast	Endangered	
	Southern OR/Northern CA	Threatened	
	Lower Columbia River	Threatened	Critical Habitat
	Oregon Coast	Threatened	
	Puget Sound/Strait of Georgia	Species of Concern	
Chum Salmon (O. keta)	Hood Canal Summer-run	Threatened	
	Columbia River	Threatened	
Steelhead (O. mykiss)	Southern California	Endangered	
	Upper Columbia River	Endangered	
	Central California Coast	Threatened	
	South Central California Coast	Threatened	
	Snake River Basin	Threatened	
	Lower Columbia River	Threatened	
	California Central Valley	Threatened	
	Upper Willamette River	Threatened	
	Middle Columbia River	Threatened	
	Northern California	Threatened	
	Puget Sound	Threatened	Critical Habitat
	Oregon Coast	Species of Concern	

Source: ECONorthwest with data from NOAA's National Marine Fisheries Service. 2008. *Snapshot of Salmon & Steelhead ESA Status*. http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/Index.cfm.

Many benefits accrue from designating critical salmon habitat, which could also be realized through improved ecosystem management practices in areas *not* designated as critical habitat. Improving water quality and aquatic habitat creates many benefits that are not directly related to salmon. In fact, many businesses and farms reduce their impacts on streams because they find it profitable to do so[12]. Benefits may be realized through reductions in flood damages, improvements in bird habitat, water quality, recreational opportunities, and increased property values near the stream. The area and extent of the impacts of the improved habitat can be vast. Benefits may be seen downstream from the site or in other watersheds. It is not necessary to wait for a stream or watershed to be designated as a critical habitat to obtain these benefits. The costs of improving water quality and aquatic habitat are often less than the benefits gained by doing so and when the risk of salmon extinction depends on the given habitat the benefits are even greater.

However, once the ESA designates critical habitat, more costs will be imposed on the residents, businesses, and local governments impacted by the habitat area. The laws pertaining to critical habitat impose several costs on federal agencies and private parties with an interest in the critical habitat region. The consultation costs of obtaining an assessment from the federal government of a project's impact on the species' habitat, the costs of modifying a given project to comply with ESA, and the costs of delaying the implementation of the project while assessments and modifications are made are a few of the costs associated with critical habitat[13]. Many of these costs can be avoided by improving salmon habitats before critical habitat is designated.

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[12] Goodstein, E., B. Doppelt, and K. Sable. 2000. *Saving Salmon, Saving Money: Innovative Business Leadership in the Pacific Northwest*. Center for Watershed and Community Health, Portland State University; Sullivan, P., D. Hellerstein, L. Hansen et al. 2002. *The Conservation Reserve Program: The Implications for Rural America. United States Department of Agriculture, Economic Research Service*. Agriculture, Economic Report 834. September.

[13] Sunding, D. *The Economic Impacts of Critical Habitat Designation*. Giannini Foundation of Agricultural Economics.

ANADROMOUS FISH ON THE ROGUE RIVER

Table 2 shows the fish counts for different species of anadromous fish at Gold Ray Dam for years 1997 through 2006. Gold Ray Dam is located approximately thirty river miles upstream of the start of the Wild & Scenic Section of the Rogue River so the numbers reported represent only the fish that pass through the Wild & Scenic Section to spawn above the dam. Table 3 shows the estimated fish escapements for different species at Huntley Park located downriver from the Wild & Scenic Section. Based on conversations with the Oregon Department of Fish and Wildlife there are no known data of the number of anadromous fish that spawn and rear in the Wild & Scenic Rogue River and its tributary streams.

Table 2: Fish Counts at Gold Ray Dam

Year	Summer Steelhead	Winter Steelhead	Spring Chinook	Fall Chinook	Coho	Total Steelhead, Chinook, and Coho
1997	7,538	14,957	41,794	4,857	15,750	84,896
1998	6,056	5,029	15,957	5,332	6,044	38,418
1999	4,785	9,497	20,981	3,540	7,722	46,525
2000	6,734	6,807	30,265	9,892	28,791	82,489
2001	16,114	8,944	33,273	13,606	32,962	104,899
2002	29,296	22,287	47,781	19,823	34,154	153,341
2003	20,297	24,850	41,841	24,857	17,179	129,024
2004	13,658	21,889	39,243	15,007	21,702	111,499
2005	10,414	11,908	18,090	8,615	14,632	63,659
2006	14,579	9,560	11,718	6,908	11,368	54,133

Source: ECONorthwest with data from Oregon Department of Fish and Wildlife, Roseburg. 2003. Letter to Ted Helvoigt. and Oregon Department of Fish and Wildlife, Fish Division. 2008. *Fish Counts*. Retrieved October 29, 2008, from http://www.dfw.state.or.us/fish/fish_counts/goldray/2006/gold_ray_dam._2006.asp.

Figure 1: Fish Counts at Gold Ray Dam (1943-2006)

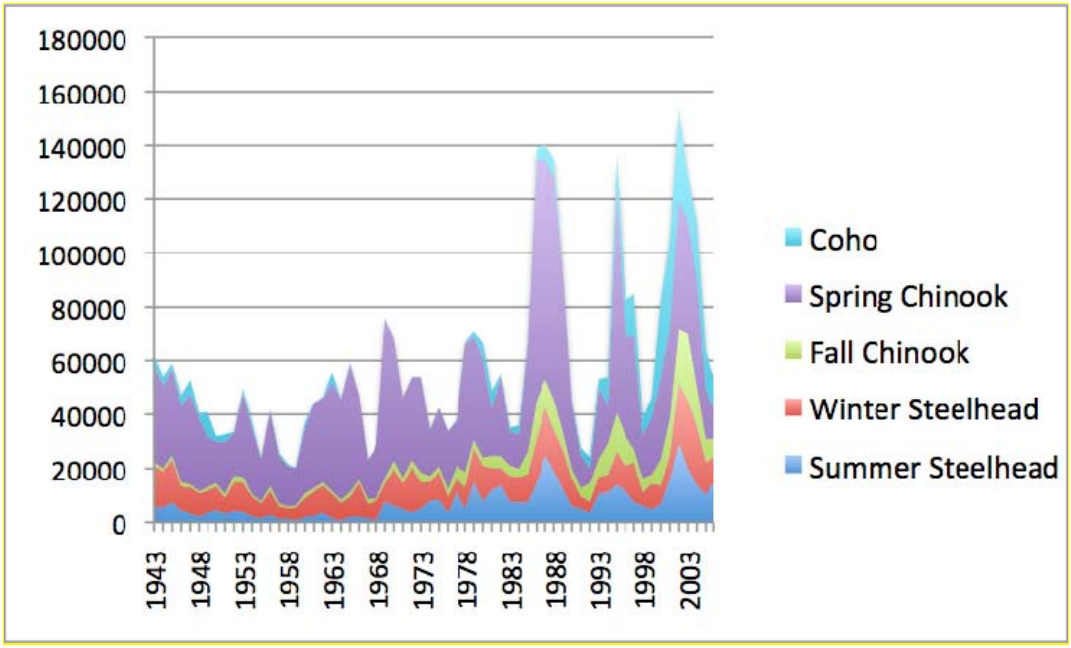

Table 3: Huntley Park Estimated Adult Fish Escapements

Year	Summer Steelhead	Fall Chinook	Coho
1997	15,325	17,186	40,647
1998	9,222	16,867	6,817
1999	15,882	19,456	6,155
2000	21,856	34,562	18,572
2001	17,397	35,447	37,243
2002	35,813	62,576	27,103
2003	21,005	86,551	16,071
2004	14,209	55,170	46,546
2005	10,466	23,733	8,271
2006	18,142	14,738	16,397

Source: ECONorthwest with data from Mazur, Steven. 2008. *Huntley Park Trend Data*. Email to T. Helvoigt October 22.

The Wild & Scenic section of the Rogue River and its tributaries provide important cold water refugia for salmon and steelhead. Anadromous fish are present in at least 100 stream miles across 14 tributary streams of the Rogue River[14]. The streams play an important role in salmon habitat as they bring colder water temperatures to the larger main Rogue, and they provide refuge from the warm water temperatures of the main stem during summer months. These cold temperatures also permit higher concentrations of oxygen to dissolve in the water. With the projected climate changes predicted for the coming years, these cold water streams will become even more valuable to salmon and steelhead survival. A report which utilized aerial thermal surveys indicated that there already is a trend of downstream warming on the Rogue. The cold water refugia is necessary for migrating salmon and steelhead so that they remain healthy and able to fight disease. Each species of anadromous fish uses the Rogue River habitat in a different manner, but the health of the river and its streams is important to the health of each species.

For instance, coho salmon use the Wild & Scenic Section of the Rogue River as a migratory path. Coho can mostly be found in Lobster, Quosatana, Silver, Foster, Shasta Costa, Lawson, Mule and Billings Creeks, which feed into the Rogue River. In the summer, coho prefer to swim to pools in small streams. In the winter, they prefer off-channel alcoves. Complexity, such as mixtures of small and large wood, is important for productive coho streams. The health of the Rogue River, as a migratory passage, and its tributaries, as spawning and rearing grounds, are key factors for the health of coho salmon.

Wild spring Chinook also use the main stem of the Rogue River as a migratory passage and spawn above Gold Ray Dam. Fall Chinook usually spawn in the lower regions of the river. Only about 10% of fall Chinook spawn above Gold Ray Dam. The early entry adults spawn between Grave Creek and Gold Ray Dam and in the lower 25 miles of the Applegate River. The late entry adults typically spawn below Watson Creek on the Rogue River and in the Illinois basin. The Wild & Scenic section of the Rogue River is an important spawning ground for the fall Chinook. In 1979, pre-spawn mortalities of fall Chinook from low flows and high temperatures on the Rogue River were as high as 85%. Although there is not enough data available to draw any conclusions about the health of late entry fall Chinook, it appears that their population is declining. Table 4 shows the redd (salmon nest) counts on the main stem of the lower Rogue River from surveys conducted by the Oregon Fish and Wildlife Department every twenty years.

[14] Heyn, K. 2008. *Save the Wild Rogue*. American Rivers.

Table 4: Redd Counts on the Lower Rogue River

Survey Year	Method	Redds/mile
1953	Boat	5.1
1954	Boat	5.7
1974	Plane	4.0
1976	Plane	4.3
1993	Helicopter	0.2

Source: Weinhold, M. Lower Rogue River Basin Watershed Condition Assessment. 1995. Lower Rogue Watershed Council for State of Oregon Watershed Health Program and Strategic Water Management Group.

Winter steelhead also spawn in the Wild & Scenic section. They most often spawn in the tributary streams to the Rogue, only spawning in the main stem if objects obstruct their passage or when water levels are too low to permit them to spawn in the smaller streams. Summer Steelhead usually spawn above the Wild & Scenic Section but half-pounders usually overwinter within the lower fifty miles of the Rogue's main stem and over 95% of the summer steelhead have a half-pounder lifestyle.

The health of the Wild & Scenic Rogue River as a salmon spawning, rearing, and migratory habitat is necessary for the protection of healthy anadromous fish. Maintaining cold water temperatures in the main stream of the Rogue River with limited debris and protected watersheds will help to maintain a healthy habitat for salmon and steelhead.

VALUE OF ROGUE RIVER SALMON

By protecting salmon and steelhead populations in the Rogue River, Oregon is protecting an asset important to residents of the Pacific Northwest. For example, studies indicate that households in Washington and Oregon are willing to pay $30-$130 per year to finance salmon recovery efforts[15]. Salmon populations also help sustain jobs in the Pacific Northwest. If salmon populations were restored sufficiently to allow increases in commercial harvest, fishers and those in related industries would enjoy new business and job opportunities in Oregon, Washington, and elsewhere along the salmon's migration routes. Further benefits accrue to recreational anglers and all residents of the Pacific Northwest who benefit from the clean water, flood control and open spaces associated with salmon habitat. Since the values of many of these benefits accruing from salmon habitat are not captured by market prices, economists must employ different methods to measure the aggregate benefits that salmon and steelhead provide to the Northwest. Hence, the household surveys provide a means to estimate the extent to which Northwest residents value salmon and enhancements to salmon habitat.

Economists describe economic benefits of ecosystem goods and services, such as the benefits of protecting salmon and steelhead habitat, using various methods. Established markets exist for some benefits, such as increases in the supply of goods, e.g., commercial harvests of fish. In these cases, we can interpret market prices as a measure of the economic benefit of actions that protect or increase the supply of the good. We note, however, that factors such as externalities (e.g., when prices do not include pollution impacts) or government intervention (e.g., when subsidies artificially elevate prices) can distort market prices.

Measuring the economic significance of benefits for which markets do not exist, such as cultural values, amenity values, and the recreational value of sport fishing, is more challenging. Economists have developed techniques that can approximate the economic values of some of these benefits. These techniques have been tested and improved over the decades, with results and methods vetted through publication in academic journals and presentations at scholarly conferences.[16] We describe some of the more commonly used techniques in more detail in our discussion of the sport fishing and existence values of salmon and steelhead.

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[15] Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy, eds., *Frontiers in Ecological Economic Theory and Applications*. Northampton, MA: Edward Elgar.

[16] For more information on the methods of measuring economic benefits that are not traded in markets, see The National Research Council. 2004. *Valuing Ecosystem Services: Toward Better Environmental Decision-Making*. Committee on Assessing and Valuing the Services of Aquatic and Related Terrestrial Ecosystems, National research Council; Millennium Ecosystem Assessment. 2005. *Ecosystems and Human Well-Being*; and Barbier, E.B., et al. 1997. *Economic Valuation of Wetlands*. Ramsar Convention Bureau, Department of Environmental Economics and Environmental Management, University of York, Institute of Hydrology, IUCN-The World Conservation Union.

1. Commercial Fishing Value of Rogue River Salmon

Although the market price for wild salmon provides a reasonable starting point for calculating the commercial fishing value of a Pacific Northwest salmon or steelhead, many factors complicate the calculation. Salmon are often caught far from the streams in which they were spawned. Since many Pacific Northwest salmon are caught in the ocean near Alaska and Canada, estimates of the contribution of Northwest-spawned salmon to the total Pacific catch must be made.

Table 5 shows the results of studies conducted by the Independent Economic Analysis Board (IEAB) (2005)[17] and Radtke and Davis (1995 a), In each of these studies, the authors estimate the economic impact that commercial-caught salmon and steelhead has on the Northwest economy.[18] Both studies focus on Columbia River Basin fisheries.

Table 5: Economic Value of Commercial-Caught Salmon and Steelhead, Estimates from the Academic Literature

Study	Species	Location	Average weight	Ex-vessel price per lb	Per Fish Economic Value ($2007)*
Radtke & Davis, 1995 a	Chinook	WA. Coast	11.51	$2.56	$64.95
Radtke & Davis, 1995 a	Chinook	WA. Coast	23.53	$1.09	$78.14
Radtke & Davis, 1995 a	Chinook	OR. Coast	11.4	$2.53	$68.14
Radtke & Davis, 1995 a	Coho	OR. Coast	4.56	$1.18	$13.64
IEAB, 2005	Coho	WA. Ocean	3.8	$1.84	$15.29
IEAB, 2005	Coho	OR. Ocean	5.8	$1.89	$21.34
IEAB, 2005	Coho	CA. Ocean	5.9	$1.89	$25.28
IEAB, 2005	Chinook	WA. Ocean	12.2	$2.17	$59.14
IEAB, 2005	Chinook	OR. Ocean	11.2	$2.17	$51.48
IEAB, 2005	Chinook	OR. Ocean	11.2	$2.17	$51.48
IEAB, 2005	Chinook	CA. Ocean	11.6	$2.51	$65.86
IEAB, 2005	Steelhead	B.C. Ocean	7.00	$1.67	$27.28

ECONorthwest compilation of various studies

Table 6 shows the estimated economic impact to the Northwest of salmon and steelhead caught commercially in coastal areas of the Northwest (excludes British

[17] Independent Economic Analysis Board. 2005. *Economic Effects from Columbia River Basin Anadromous Salmonid Fish Production*. Document IEAB 2005-1.

[18] The regional economic impacts include wages, proprietor's incomes, rents, interest and dividends.

Columbia and Alaska). The total estimated economic impact is not great—only $1.36 million, but represents a lower bound estimate as the estimates of the number of Rogue River fish commercially harvested off the Northwest coast is conservatively estimated.

Table 6: Per-Fish and Total Economic Impact of Commercially Caught Rogue River Salmon,* 2007 Dollars

Species	Harvest of Rogue River-Spawned Fish	Per-Fish Economic Impact	Total Economic Impact
Coho	3,299	$19	$62,307
Chinook	20,264	$63	$1,271,379
Steelhead	1,040	$27	$28,360
Total	24,603		$1,362,046

Source: ECONorthwest analysis of data from studies shown in Table 5 and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp)

*Does not include economic impacts associated with Rogue River-spawned salmon and steelhead commercially harvested in Pacific Ocean off the Canadian or Alaskan coast.

2. Sport Fishing Value of Rogue River Salmon

The sport fishing value of Rogue River salmon is primarily a function of the pleasure derived from the fishing experience and is significantly greater than the commercial value, as measured on a per fish or per pound basis. Based on estimates from several peer-reviewed studies of sport fishermen, the average value of a Northwest salmon or steelhead is approximately $245 expressed in 2007 dollars.

The total value of a salmon or steelhead to a recreational angler is the dollar amount that the angler is willing to pay to fish for it. Economists typically decompose the total value into two parts: the first part is the amount the angler *actually* spends to fish.[19] In most cases, however, recreational anglers are willing to spend more than they actually do to fish. The difference between what an angler is willing to pay and what he or she actually pays is referred to by economists as *consumer surplus*, and represents the second part of the total value of a sport-caught salmon. It is important to measure consumer surplus because it represents a real gain in overall economic well being above that which is observed in market transaction by those engaging in sport fishing. Consumer surplus is a means of recognizing that for many anglers, the economic value associated with the enjoyment of fishing is greater than the sum of the market-based transactions undertaken to go fishing. Thus, fishing-related expenditures alone do not account for the entire economic benefits derived from the fishing experience.

Table 7 shows the results of several studies conducted in the Pacific Northwest to estimate the value of salmon to sport anglers. The results varied depending on the location of the study and the method of evaluation employed. However, even the most conservative calculations show that the recreational value of salmon and steelhead fishing is far greater than the market (purchase) price for salmon or steelhead.

[19] Note: this amount is accounted for in the "Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River."

Table 7: Estimates of the Economic Value of Sport-Caught Salmon and Steelhead from Various Studies, 2007 Dollars

Study	Location	Species	Study Method	WTP Per Fish ($2007)
Olsen et al., 1990	Washington Ocean	Salmon	CVM	$63.60
Meyer et al., 1983	Oregon Ocean	Steelhead	TCM	$154.32
Olsen et al., 1990	Oregon Coastal	Steelhead	CVM	$97.92
Olsen & Richards, 1992	Rogue River	Fall Chinook	CVM	$103.64
Meyer et al., 1983	Rogue River	Fall Chinook	TCM	$57.04
Meyer Resources, 1987	San Fran. Bay/ Sacramento & San Joaquin Rivers	Chinook	CVM	$684.65
Meyer Resources, 1987	California statewide	Chinook	CVM	$307.37
Meyer Resources, 1987	North Coast Streams	Chinook	CVM	$307.37
Olsen et al., 1990	Washington Freshwater	Salmon	CVM	$56.13
Meyer Resources, 1985	Sacramento and San Joaquin Rivers	Salmon	TCM	$302.76
Meyer et al., 1983	Columbia River	Salmon	TCM	$200.23
Olsen et al., 1990	Columbia River	Salmon	CVM	$69.83
Meyer et al., 1983	Oregon	Steelhead	TCM	$234.68
Olsen & Richards, 1992	Rogue River	Steelhead	CVM	$128.18
Meyer et al., 1983	Rogue & Illinois	Steelhead	TCM	$208.88
Meyer Resources, 1985	Sacramento and San Joaquin Rivers	Steelhead	TCM	$896.19
Meyer Resources, 1986	California, Statewide	Steelhead	TCM	$909.83
Donnelly et al., 1985	Idaho, statewide	Steelhead	CVM	$42.04
Meyer et al., 1983	Columbia River	Steelhead	TCM	$320.28
Olsen et al., 1990	Columbia River	Steelhead	CVM	$202.49
Olsen & Richards, 1992	Rogue River	Half-Pounder*	CVM	$16.73
Olsen & Richards, 1992	Rogue River	Steelhead	CVM	$33.86

ECONorthwest compilation of various studies

Although not shown here, recreational fishing also impacts the local and regional economies through the multiplier effect.[20] Dollars spent by recreational anglers on fishing supplies, food and lodging create income for local businesses and provide income and salaries for local residents. Consequently, public policy and decisions makers should take into account how decisions which impact salmon and steelhead habitat will impact sport angling and other related recreational activities that have a wider scope of influence in the economy than the market value of salmon alone.

[20] For information on the economic impact that sport fishing on the Rogue River has on the Josephine County and Oregon economies, please see "Regional Economic Impacts of Recreation on the Wild and Scenic Rogue River."

Table 8 shows the annual WTP by sport anglers for Rogue River salmon and steelhead based on information presented in Table 7. Given the unique wilderness experience offered by the Wild Rogue, the per fish and total willingness to pay (WTP) shown in Table 8 are likely low for that section of the river.

Table 8: Estimated Annual WTP by Sport Anglers for Rogue River Salmon, 2007 Dollars

Species	Catch Location	Estimated 2007 Catch	WTP Per Fish	Estimated Total WTP	Upper Bound WTP
Coho	Ocean	6,488	$64	$412,696	$412,696
	River	1,200	$157	$188,732	$363,404
Chinook	Ocean	5,355	$64	$340,600	$340,600
	River	15,988	$232	$3,711,003	$10,946,101
Steelhead	Ocean	1,040	$126	$131,130	$160,447
	River	4,165	$299	$1,246,599	$3,789,289
Total Sport Fishing		34,236		$6,030,759	$16,012,535

Source: ECONorthwest analysis of results from studies presented in Table 7 and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp)

3. Non-use Value of Rogue River Salmon

Even those who do not consume salmon or steelhead may benefit from their existence. In fact, the non-use value of an environmental resource is often far greater than it's commercial or sport value. Non-use value can take several different forms: option value, which is the value of saving a good for use at another time; bequest value, the value of saving a good for future generations; altruistic value, the value of saving a good for others to use now; and existence value, the value of saving a good for the sake of its existence[21]. Surveys indicate that, in aggregate, residents of the Pacific Northwest and California place a much higher non-use value on salmon than they do use value. Only a relatively small proportion of West Coast residents participate in fishing for salmon and steelhead. Thus there are many fewer households over which to aggregate total value. For example, based on information from the *2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Oregon*, 455,000 Oregonians age 16 or older participated in fishing in 2006, out of a 16+ population of 2,894,050. This represents only 16% of Oregon's 16 and older population[22]. Comparatively, based on household survey results, a much larger percentage of Oregonians (and Americans in general) value Northwest salmon even though they likely will never participate in salmon fishing or even view a wild salmon (see Loomis, 1999, Pate and Loomis 1997, Loomis 1996).

Loomis (1999) estimated the marginal non-use value of salmon and steelhead on the Lower Snake River to residents of Oregon, Washington, and California[23]. The results of the analysis indicate that, as one would expect, the marginal value (i.e., the value of the next additional salmon) goes down as the total population of salmon goes up. At very low populations, (e.g. fewer than 5,000 total fish) the marginal value of an additional fish is more than $1.0 million. This immense per-fish value embodies the scarcity associated with a small fish population and society's desire to preserve the species for current and future generations.

Based on the results of the survey analysis and through the incorporation of information from other surveys, Loomis (1999) developed a *marginal WTP benefit function*, which provides estimates of the marginal value of a fish based on the

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[21] Schuhmann, P.W. and K.A. Schwabe. 2002. "Fundamentals of Economic Principles and Wildlife Management." In L. Clark, J. Hone, J.A. Shivik, R.A. Watkins, K.C. VerCauteren, and J.K. Yoder, eds., *Human Conflicts with Wildlife: Economic Considerations. Proceedings of the Third NWRC Special Symposium*. Fort Collins, CO: National Wildlife Research Center from http://www.aphis.usda.gov/ws/nwrc/symposia/economics/.

[22] U.S. Department of Interior, Fish & Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. *2006 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation: Oregon.*

[23] Loomis reviewed and augmented survey data from three other studies which asked households in the Pacific Northwest and California how much they were willing to pay for a specified increase in the number of either salmon or salmon and steelhead on a given river as a result of dam removal. None of the fish in these studies were endangered which is an important consideration when relating the results of these studies to other rivers since individuals will likely place greater existence value on an endangered species than on a non-endangered species.

size of the underlying population. He then demonstrates that as the underlying population increases, the marginal value that society places on increasing the population by one fish decreases. For example, based on a salmon population of 500,000, the marginal value of one additional fish is $1,595. However, the marginal value of a second additional fish (e.g., the marginal value based on a salmon population of 500,001) is only $1,539.

Loomis (1999) developed the marginal WTP benefit function based on analysis of society's WTP to increase the salmon populations on the lower Snake River. Based on comments from one or more reviewers of his analysis, he contends that the benefit function may in fact be representative of the entire Pacific Northwest salmon population. What this means is that, though there are many distinct populations of salmon throughout the Pacific Northwest, many Northwest and California residents do not differentiate between salmon of various populations. Society's concern is for the overall welfare of salmon populations throughout the Northwest. Thus, the value that society places on the marginal fish returning to spawn in any one Northwest river is a function of the aggregate count of all salmon returning to spawn in all Northwest rivers. The result of embracing the assumption that society views all Northwest salmon as members of one Northwest-wide population, is that society's WTP for the marginal salmon of any actual (biological) population will be lower than if society viewed each biological population separately.

To estimate the society's non-use WTP for Rogue River salmon and the value society places on the entire population of Rogue River salmon we embrace the all-Northwest assumption regarding the WTP benefit function for Rogue River salmon. In doing so, we acknowledge that our estimates of the non-use or existence value represents a lower bound estimate of the actual non-use value society places on Rogue River salmon. That is, although we are unsure of society's actual non-use WTP for Rogue River salmon, we are confident that it is no lower than and may be much higher than the estimated value based on the WTP benefit function developed by Loomis (1999).

Table 9 shows the estimated marginal and average values of Rogue River salmon, as well as the total value of the Rogue River fishery based on various assumptions about the entire population of Northwest salmon. To our knowledge, "official" estimates of the aggregate population of Northwest salmon are not available.[24] However, based on escapement counts[25] for the Columbia River system from the Pacific Fishery Management Council (PFMC), we estimate the 10-year average annual salmon escapement for the Northwest to be approximately 830,000 fish.[26] Based on this estimate of the Northwest salmon

[24] We define "aggregate population" as the 10-year average salmon escapement summed across all Northwest river systems.

[25] Escapement is the annual count of salmon and steelhead returning to their spawning ground or hatchery.

[26] The PFMC 2007 report can be found at: http://www.pcouncil.org/salmon/salsafe.html.

population, we estimate society's annual marginal non-use WTP for a Rogue River salmon to be $1,008, the average WTP to be $1,824, and the total annual non-use WTP of the entire Rogue River salmon fishery to be just over $1.5 billion.

At first glance, these numbers appear to be very large. However, consider that these estimates are aggregated across the entire population of Oregon, Washington, and California—more than 46 million people in 2007. The per-person value of the entire Rogue River salmon fishery is $32.37 per year. Another perspective from which to view the annual value of the fishery is to compare it to the economic output of the 3-state region. Based on Bureau of Economic Analysis data (BEA), the combined gross state product of the three states was $2.28 trillion. The estimated annual value of the Rogue River fishery represents a mere 0.07% of the total annual output for 2007.

Table 9: Annual Non-Use Value of Rogue River Salmon, 2007 Dollars*

Assumed Northwest Salmon Population	Marginal Value of a Rogue River Salmon	Average Value of a Rogue River Salmon	Total Value of Rogue River Salmon Population
500,000	$1,595	$4,892	$2,446,138,182
750,000	$1,112	$2,217	$1,662,959,665
828,282	**$1,008**	**$1,824**	**$1,514,072,103**
1,000,000	$822	$1,266	$1,266,345,698
1,250,000	$793	$821	$1,026,859,060
1,500,000	$525	$576	$863,315,110

Source: ECONorthwest analysis of results from Loomis, J. 1999. *Recreation and Passive Use Values From Removing the Dams on the Lower Snake River to Increase Salmon*. Agricultural Enterprises, Inc. for the Department of the Army Corps of Engineers; data from the Pacific Fishery Management Council (http://www.pcouncil.org/salmon/salsafe.html) and data from Oregon Department of Fish and Wildlife (http://www.dfw.state.or.us/resources/fishing/sportcatch.asp).

* Consistent with the results of the WTP salmon question in the 1996 through 2006 Oregon Population Surveys, we assume no inflationary growth in the WTP between 1996 (the data year of the Loomis 1999 study) and 2007.

Table 9 also provides estimates of the value of Rogue River salmon based on alternative assumptions regarding the size of the entire Northwest salmon population. The declining values associated with increasing salmon populations shown in Table 9 are consistent with economic principles of diminishing marginal value. Under an assumption of relative scarcity (e.g. a total average annual escapement of 500,000 salmon across all Northwest rivers), the marginal value of Rogue River salmon is greater. And under the alternative assumption of relative abundance (e.g. 1.5 million salmon), the marginal value of Rogue River salmon is less. Stated another way, as local, regional, and oceanic conditions worsen for Northwest salmon, the value of the next Rogue River salmon increases.

While the results of Loomis' study provide insight into the values society place on salmon in general, it is important to realize that all salmon populations in the Northwest may not be valued the same. A 2005 report by Goodstein and

Matson[27] summarized and augmented research by Layton, Brown, and Plummer in 1999 on people's willingness to pay for specific salmon restoration projects. Goodstein and Matson (2007) used these data to find the perceived economic benefit of restoring salmon populations or, alternatively, of avoiding further declines in salmon populations and they extended the data collected from Washington and Oregon households to households nationwide by assuming that residents outside of Oregon and Washington, on average, placed a value on salmon restoration equal to half that of Oregon and Washington residents. This is a conservative assumption according to other studies on the value of Pacific Northwest salmon for residents outside of the Northwest region. Table 10 summarizes their findings.

Table 10: The Economic Benefits of Restoring Salmon Populations and of Preventing Further Declines in Salmon Populations

The economic benefits to residents of Oregon and Washington of restoring salmon populations:	
Columbia River Salmon	$2,890 per fish
Washington Coastal Chum Salmon	$872 per fish
Oregon Coastal Coho Salmon	$872 per fish
Rogue River Coastal Coho Salmon	$872 per fish
Puget Sound Chinook Salmon	$872 per fish
The economic benefit per year, to residents of Oregon and Washington, of preventing further declines in wild-salmon populations:	
Preventing a one-third decline in populations	$359 million - $3.6 billion
Preventing a two-thirds decline in populations	$718 million - $7.2 billion
The economic benefit per year, to residents of the U.S., of preventing further declines in wild-salmon populations:	
Preventing a one-third decline in populations	$5.4 billion - $54 billion
Preventing a two-thirds decline in populations	$10.9 billion - $109 billion

Source: ECONorthwest with data from Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy eds., *Frontiers in Ecological Economic Theory and Application*. Northampton, MA: Edward Elgar.

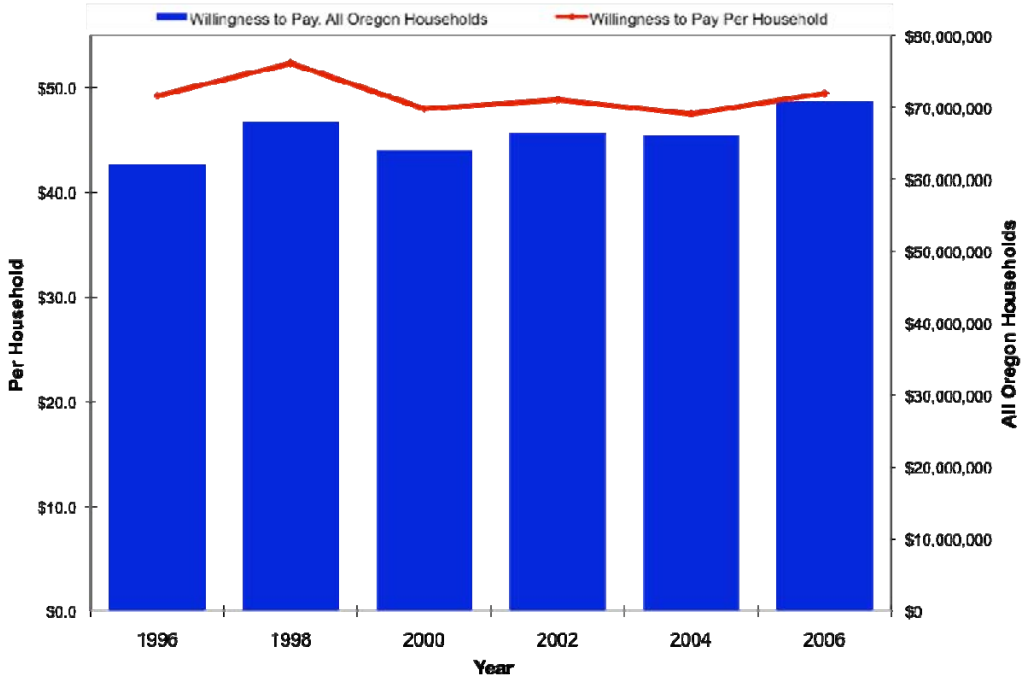
[27] Goodstein, E. and L. Matson. 2007. "Climate Change in the Pacific Northwest: Valuing Snowpack Loss for Agriculture and Salmon." In J.D. Erickson and J.M. Gowdy, eds., *Frontiers in Ecological Economic Theory and Applications.* Northampton, MA: Edward Elgar.

One of the disadvantages of the reports of non-use value viewed thus far is that they take data only from one point in time and do not allow us to observe how residents' willingness to pay for salmon recovery changes with changes in the economy and social structure. To observe trends in Oregonians' willingness to pay for salmon habitat restoration and improved water quality, we look at the Biennial Oregon Population Survey, conducted by the Oregon Office of Economic Analysis and the Oregon Progress Board. The survey provides data from as far back as 1996 and asks Oregon residents, how much per month they are willing to pay for water quality and habitat improvement efforts to help improve salmon runs in Oregon.

In 2006, the survey results showed, on average, that each Oregonian household was willing to pay $4.42 per month in 2008 dollars. Extending that value over the course of a year and multiplying the result by 1,333,723 Oregon households, indicates that Oregonians alone are willing to pay a total of $75,958,977 per year to improve salmon runs. Figure 2 shows the average annual amount Oregonians stated they are willing to pay for water quality and salmon habitat improvements based on the results of the Oregon Population Survey. The willingness to pay remains fairly constant (in nominal dollars) throughout the years for which data are available indicating that Oregonians are willing to make a long-term commitment to protecting and improving salmon habitat. It also indicates that Oregonians have a continued concern for the health of salmon runs which has not diminished significantly over time.

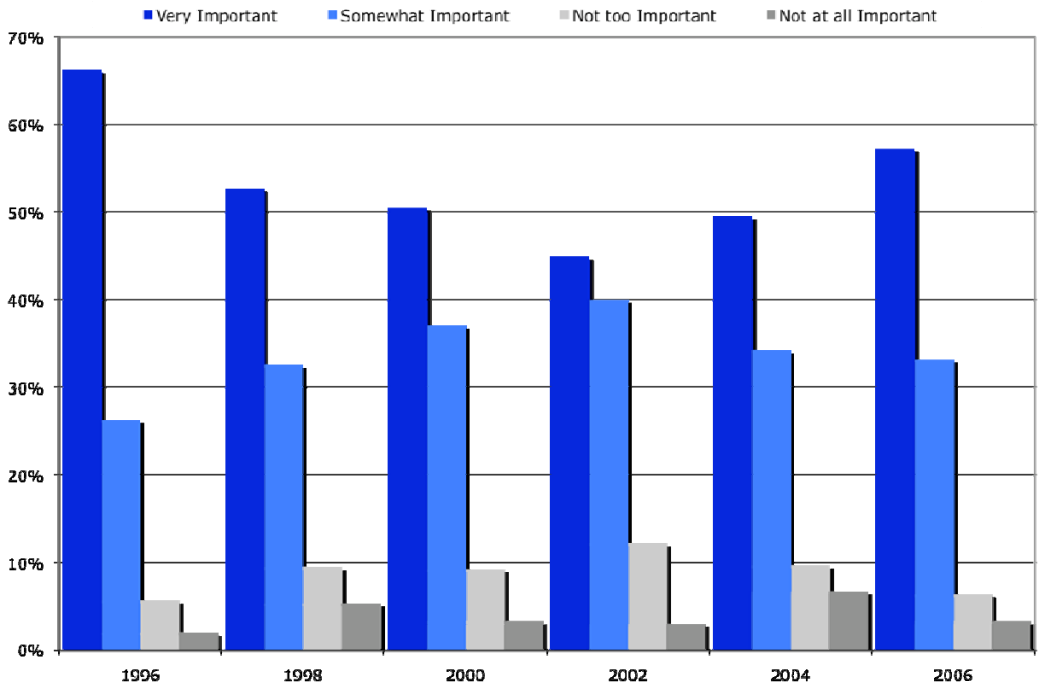
Figure 3 shows responses to another Oregon Population Survey question, "How important do you feel it is to improve salmon runs in Oregon?". It is noteworthy that in every year that the survey was conducted since 1996, over 80% of the respondents stated that improving salmon runs was very important or somewhat important and in all but two of the survey years, the majority of all respondents felt that improving salmon runs was very important.

Figure 2: Oregonian's Willingness to Pay for Water Quality and Habitat Improvement Efforts to Help Improve Salmon Runs in Oregon, In Current Year Dollars



Source: ECONorthwest with data from Oregon Progress Board. *Oregon Population Survey.* http://www.oregon.gov/DAS/OPB/popsurvey.shtml

Figure 3: How Important Do You Feel it is to Improve Salmon Runs in Oregon?



Source: ECONorthwest with data from Oregon Progress Board. *Oregon Population Survey.* http://www.oregon.gov/DAS/OPB/popsurvey.shtml

As shown by numerous surveys and studies, the continued existence of salmon and steelhead in the Pacific Northwest is very important to the local residents and is likely important to residents throughout the country. The non-use value reported in these studies has remained fairly steady over the past ten years and will likely remain so in future years. Consequently, government policies that preserve and/or enhance existing salmon and steelhead habitats have far-reaching benefits, which may not be captured by the market and these benefits will be felt by residents for many years to come.

SUMMARY

The findings of this report show that Rogue River salmon and steelhead are valuable assets to the Pacific Northwest with economic benefits that extends far beyond their market price. The commercial fishing industry for salmon and steelhead brings income into the regional economy through direct revenues and employment and is further increased by the multiplier effect. We estimate the economic value of the Rogue River to the commercial salmon fishery to be not less than $1.36 million annually.

The economic benefits society accrues from recreational fishing are even greater since the consumer surplus for each salmon and steelhead caught is typically greater than the angler's expenditures. Based on analysis of the academic literature, which includes studies of the sport value of salmon and steelhead throughout the Northwest, we estimate the annual value of all Rogue River salmon runs to be not less than $16 million.

By far, the most significant value associated with Rogue River salmon, is the non-use value to residents of Oregon, the Northwest, and the entire west coast. Based on the results of peer-reviewed, published studies and data from household surveys, we estimate the implicit value of all Rogue River salmon and steelhead runs to be approximately $1.5 *billion*—significantly greater than the total use value of Rogue River salmon. Households in the Pacific Northwest indicate they are willing to pay over eight hundred dollars per fish for salmon preservation and Oregonians consistently state a willingness to pay at least $70 million annually to enhance salmon habitat in the state.

Northwest salmon face the risk of extinction, in part, because healthy salmon habitat is scarce. As the supply of healthy salmon habitat diminishes and the risk of extinction increases, the marginal economic values associated with the remaining salmon and the cost of protecting remaining habitat will only grow. Any increase in the risk of extinction would negatively impact both the widely-recognized economic values of salmon discussed in this report, as well as the values that Congress recognizes to be "incalculable,"[28] including the spiritual, cultural, and health-related values that tribal members and others place on salmon and their habitat.[29] Protecting salmon habitat in the Wild & Scenic section of the Rogue River would reduce the risk of extinction of Northwest salmon.

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[28] House of Representatives. 1973. Report No. 93-4112. Pp.4-5.

[29] *See*, for example, Meyer Resources, Inc. 1999. *Tribal Circumstances & Impacts from the Lower Snake River Project: Executive Summary*, Columbia River Inter-Tribal Fish Commission. October.

"Despite the deprivations summarized previously, today, salmon remain connected to the core of tribal material and spiritual life. Faced with bleak present circumstances, and severely limited prospects for remedy, the tribal peoples still look first to the salmon with hope of a better future.

"Traditional activities such as fishing, hunting and gathering roots, berries and medicinal plants build self-esteem for Nez Perce peoples – and this has the capacity to reduce the level of death by accident, violence and suicide affecting our people. When you engage in cultural activities you

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build pride. You are helped to understand 'what it is to be a Nez Perce' – as opposed to trying to be someone who is not a Nez Perce. In this way, the salmon, the game, the roots, and the berries and the plants are the pillars of our world." –Leroy Seth, Nez Perce Elder

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