State of Oregon Department of Environmental Quality

Written Comments

Powder River Basin TMDL

This document is a compilation of written and oral comments received during the public comment period for the Powder River Basin TMDL.

On June 2, 2023, DEQ sent a notice of the public comment period open until Aug. 2, 2023, and public hearing on July 26, 2023, to approximately 24,713 interested parties. DEQ held another public comment period from Jan. 3, 2024, through March 22, 2024.

MARTIN Michele * DEQ

To: chrysalis@thegeo.net
Subject: RE: Powder River

From: chrysalis@thegeo.net <chrysalis@thegeo.net>
Sent: Thursday, February 8, 2024 9:37 AM
To: PowderTMDL * DEQ <powderTMDL@deq.oregon.gov>
Cc: Jill Wyatt <chrysalis@thegeo.net>
Subject: Powder River

Dear Sir/Madam,

I live in Baker City and recreate on the Powder River and its tributaries. I enjoy fishing on the Powder and when I am hiking in the Powder River Canyon area that has been designated Wild and Scenic have seen trout fry in Big Creek. Children and adults float the river through Baker City and swim in the river.

The Powder River belongs to all of us, not just farming and ranching operations, or the extractive industry (i.e., mining). The Powder River Basin fails to meet water quality standards for bacteria. Thus, why I won't eat any fish I catch and release them back in the river, but many people DO eat the fish from the river. Federal and state law require a plan to clean it up and all users will benefit from its clean up - healthier people, livestock, and wildlife. The Powder River Basin should not be used as a dump site or sewage lagoon.

Excess bacteria levels have been documented in the river basin for more than 20 years. It IS time for DEQ to act by adopting a plan to clean up the river and its tributaries for all the people of the area.

Thank you for the opportunity to submit comments.

Jill Wyatt

From: Jim Sterling
To: PowderTMDL * DEQ
Subject: Powder river protections
Date: Sunday, February 4, 2024 8:02:07 AM

- Please implement the TDML protections for the Powder River!
-
- Excess bacteria levels have been documented in the river basin for more than 20 years. **Now is the time for DEQ to take action** by adopting a plan to at least start to clean up the river and its tributaries.
- Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law **require a plan to clean it up**.

THANK YOU!……Jim Sterling, Bend Oregon

Sent from my iPad

From: bccorelse@frontiernet.net
To: PowderTMDL * DEQ
Subject: Protect the Power River - for all
Date: Friday, February 2, 2024 2:29:21 PM

Hello,

Please consider our comments regarding the limiting of contaminants in the Power River.

- The Powder River **belongs to all Oregonians**, not just those who use it to support their farming and ranching operations.
- The **Powder River should be clean** enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use.
- Excess bacteria levels have been documented in the river basin for more than 20 years **Now is the time for DEQ to take action** by adopting a plan to at least start to clean up the river and its tributaries.
- Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law **require a plan to clean it up**.

Thank you for your time and consideration.

Gloria and Bob Ziller
PO Box 419
O Brien, OR 97534

From: Emily Simko
To: PowderTMDL * DEQ
Subject: I Support Powder River Basin TMDL for public recreation, people, fish and wildlife use
Date: Friday, February 2, 2024 4:07:25 PM

Hello,
I am writing in support of Powder River Basin TMDL to better protect public recreation, people, fish and wildlife use of the Powder River Basin. Our river is an important ecosystem for far more than just agriculture use. A healthy river is a right to all who live near and access the Powder River Basin. Further, jeopardizing the health of those who access and utilize the Powder River Basin for the benefit of a select few agricultural efforts is in my opinion unethical. Please continue the TMDL efforts to determine the maximum level of pollutants to limit risk to our Powder River ecosystem.

Thank you,
Emily Simko
1785 4th St.
Baker City, OR 97814

From: Ed Hughes
To: PowderTMDL * DEQ
Subject: Powder River Water Quality
Date: Friday, February 2, 2024 4:59:39 PM

As an Oregonian who spends a lot of time outdoors, often fly fishing, it saddens me to see how humans have impacted many of our rivers.

I fully support the DEQ in any efforts it makes to establish TDML standards for the Powder River that ensure the water quality in this river supports recreation which includes swimming and fishing, and negates the pollutants that are unhealthy to man and wildlife. It would be my understanding that Federal and State laws mandate such standards?

I do recognize the importance of agriculture, but in 2024, farmers can't treat this river as their personal septic system. This river belongs to ALL of us, not just adjacent farmers and ranchers. As a whole, mankind needs to start changing the way it treats all of our resources, including the Powder River.

Ed Hughes
Redmond, OR
Sent from my iPhone

From: Doug Heiken
To: PowderTMDL * DEQ
Subject: Powder River TMDL - comments
Date: Friday, February 2, 2024 3:11:48 PM

TO: Oregon DEQ
FROM: Doug Heiken
DATE: 2 Feb 2024
RE: Powder River TMDL - comments

Please accept the following comments on the Powder River TMDL.

Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law require a plan to clean it up.

The Powder River belongs to all Oregonians, not just those who use it to support their farming and ranching operations. The TMDL should support the broadest public interest, not just the interests of locals and water appropriators.

The Powder River should be clean enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use. The TMDL should ensure high water quality to meet the purposes of the Clean Water Act and support the public interest in water recreation and the conservation of biodiversity.

Excess bacteria levels have been documented in the river basin for more than 20 years. Now is the time for DEQ to take action by adopting a plan to clean up the river and its tributaries.

Sincerely,
/s/

Doug Heiken

From: Kermit Williams
To: PowderTMDL * DEQ
Subject: Comments on protecting the Powder River
Date: Friday, February 2, 2024 6:15:43 PM

To the DEQ decision makers:

- The Powder River **belongs to all Oregonians**, not just those who use it to support their farming and ranching operations.
- The **Powder River should be clean** enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use.
- Excess bacteria levels have been documented in the river basin for more than 20 years. **Now is the time for DEQ to take action** by adopting a plan to at least start to clean up the river and its tributaries.
- Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law **require a plan to clean it up**.
- Nature ,if given a chance , can reverse degradation of its habitat caused by human activity, such as from the agricultural and livestock industry. Strict requirements on controlling runoff from these industries is one key method . Why would this industry be against making our precious and declining water sources healthy for all, especially for our declining wildlife populations which depend on clean water ? The answer if that they are regulation averse. Not a valid excuse in my book !

Respectfully submitted,
Donna Harris
Sent from my iPad

From: David & Karen Andruss
To: PowderTMDL * DEQ
Subject: Support public use & cleanup of Powder River
Date: Friday, February 9, 2024 7:30:37 AM

David and I strongly support the clean-up and public use of the Powder River.
We live in New Bridge/Richland and watch with despair the increasing algae growth each time we drive to Baker City.

We strongly believe Oregon rivers, and in particular the Powder River, should be available to and safe for all Oregonians to use.

Sincerely,
Karen and David Andruss

From: DAVID GRANT
To: PowderTMDL * DEQ
Subject: Powder River
Date: Sunday, February 11, 2024 8:26:41 AM

Sirs:

It is my belief that the waterways of Oregon are the community property of all of this state's citizens, if not all the citizens of the USA. It is nonsensical to assert that the Powder River is proprietary to agricultural and ranching interests that border a minority portion on the river.

This majestic river has an 11 mile stretch designated as part of the National Wild and Scenic Rivers System. It is used for boating, swimming and fishing by the public at large. Native fish and wildlife require clean water in the Powder River for their survival.

The chronic chemical and fecal bacterial contamination of the Powder River contravenes national and state laws and regulations concerning water quality and public safety. The DEQ is mandated by law to address this contamination, despite pushback from agricultural and ranching interests.

I urge you not to let this problem fester any longer. The law and common decency demand that an action plan be mandated for the Powder River that will limit such contamination and preserve it for all of its users.

Please put me on your communications list for updates on this matter. Thank you for your time and attention.

Sincerely,
David Grant

Sent from my iPhone

From: Cliff Mitchell
To: PowderTMDL * DEQ
Subject: Powder River TMDL
Date: Tuesday, February 6, 2024 10:14:52 AM

The Powder River is protected as a federal Wild and Scenic River. It belongs to ALL Americans, not just ranchers and cowboys and cowgirls.

A TMDL must be completed in order to properly manage water quality and aquatic resources and fish and wildlife habitat. This will ensure a ecologically viable river many years and not a degraded sewer for cows.

- The Powder River **belongs to all Oregonians**, not just those who use it to support their farming and ranching operations.
- The **Powder River should be clean** enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use.
- Excess bacteria levels have been documented in the river basin for more than 20 years. **Now is the time for DEQ to take action** by adopting a plan to at least start to clean up the river and its tributaries.
- Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law **require a plan to clean it up**.

Cliff Mitchell

cliffmitchell1@yahoo.com

From: Carolyn Kulog
To: PowderTMDL * DEQ
Subject: Powder River Basin
Date: Friday, February 9, 2024 12:00:12 PM

Greetings,
I have been disturbed to learn that excess bacteria levels have been documented in the Powder River basin for a significant length of time, without a plan in place to clean up the river and its tributaries.

I recognize the tremendous value of agriculture to our economy and fundamental subsistence, but this unique and precious river should be clean enough to support many uses beyond agriculture.
Simply observing the many people who float the river through Baker City in the summer months is testimony to its recreational use and of course there are many more examples.
In addition, the vital importance of the health of the river in terms of supporting fish and wildlife cannot be overstated.
As a long-time Baker County resident, I wish to add my voice to those of others who value the great importance of a healthy river system in our area--and who support creating a plan to clean up the Powder River.
Carolyn Kulog

From: Caroline Chalmers
To: PowderTMDL * DEQ
Subject: Powder River
Date: Friday, February 9, 2024 8:29:35 AM

[You don't often get email from cechalmers@gmail.com. Learn why this is important at https://aka.ms/LearnAboutSenderIdentification]

Hello,

I live in Baker City and enjoy the Powder River frequently with my children and husband. We swim and hike and enjoy the water and the ecosystem that surrounds it. Our river should not be for agricultural use only. It is a massive benefit to our community and allowing it to be further polluted would be a strike again a Baker City and Baker Valley. Baker would be less appealing to my family, our visitors, and people who might wish to enjoy this place. Please don't allow this to happen! My family deserves more from our environment, not less. While agriculture has power, they aren't the only people who live here and shouldn't be allowed to hurt our environment without consequence.

Thank you for your time and consideration,

Caroline Chalmers

From: True Sims
To: PowderTMDL * DEQ
Subject: POWDER RIVER
Date: Monday, February 5, 2024 5:58:32 AM

I'm writing to remind the DEQ the Powder River is not just for those who use it to support their farming and ranching operations, it belongs to ALL Oregonians and visitors to the state.

The Powder River needs to be clean enough to support fish and wildlife, as well as allow for fishing, swimming and boating. It cannot only serve as an agricultural and farming resource, that has already left the river with high levels of pollutants and contaminants. The river must be usable for ALL Oregonians and visitors to the state.

I've ridden my bike in this beautiful region of Oregon, and it's not okay that the farmers and ranchers don't have to make sure they are protecting the wildlife and beauty of the river for future generations.

It's not acceptable for the Powder River to only support agricultural and farming, it cannot be full of contaminants and pollutants. Please don't allow the Powder River to be destroyed.

Please stand strong and protect this river and region for all the people of Oregon now and in the future.

Thank you,

True Sims

From: Tom Fauria
To: PowderTMDL * DEQ
Subject: Powder River
Date: Friday, February 2, 2024 8:53:22 PM

Clean, clear water is critical to quality life - especially in Eastern Oregon. There are multiple interests in the Powder River, not just agriculture.

- The Powder River **belongs to all Oregonians**, not just those who use it to support their farming and ranching operations.
- The **Powder River should be clean** enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use.
- Excess bacteria levels have been documented in the river basin for more than 20 years.
- Because the Powder River basin fails to meet water quality standards for bacteria, state and federal law **require a plan to clean it up**.

Please take action to preserve and restore clean, clear water in the Powder River.

Thomas Fauria

From:	John Thelen
To:	PowderTMDL * DEQ
Subject:	I support the protection of the Powder River to safeguard its health and of the fish and wild life. thank you, Robert Thelen, York, PA.
Date:	Friday, February 2, 2024 3:59:48 PM

From: Robert Borst
To: PowderTMDL * DEQ
Subject: Powder River Restoration
Date: Sunday, February 4, 2024 10:10:22 AM

All rivers, including the Powder River, belong to the public and NOT just those who use it to support their farming and ranching operations. As such, the desires and needs of the public (and public welfare in general) should always come first. The Powder River should be clean enough for safe fishing, boating and swimming recreational activities and should NOT ONLY be used as a sewer for agricultural use. Excess bacteria levels have been documented in the river basin for more than 20 years. It is long overdue for the government to take aggressive and much needed action by adopting a legally enforceable plan that begins the process to clean up the Powder River and all its tributaries. Clean water is quickly becoming a scarce commodity that urgently needs nourishing and protection.

Respectfully,
Bob & Gayle Borst

Borst Engineering & Construction LLC
www.borstengineeringconstruction.com

From: Rachel Bender
To: PowderTMDL * DEQ
Subject: Clean water in the Power River Basin
Date: Sunday, March 10, 2024 9:33:39 AM

I've lived in Baker County for 20+ years and wanted to share my care and concern for having clean, accessible water for everyone. I personally enjoy the Powder River regularly walking my dogs and enjoying the pathways and trails along it. I see others fishing, kids swimming as well. It's so important to have a standard that applies to recreation, fish, and wildlife. I'm aware that there are those who don't consider that water quality is that important or that don't see how their part affects the whole, but it is so necessary to have a strategy that can improve conditions for all. Water quality is a mirror and we really need to take a good look at what's going on. Please consider the voices of this community. We want to see long term health of the Powder River for everyone.

Thank you,
Rachel Bender

From: Mary DiLoreto
To: PowderTMDL * DEQ
Subject: Protect Powder River
Date: Saturday, February 3, 2024 11:23:02 PM

I am writing to encourage limits on pollutants in the Powder River. The Powder River should be clean enough for fishing, boating and swimming — and to support fish and wildlife, not just agricultural use.

Thank you!

Mary DiLoreto

From: Marshall McComb
To: PowderTMDL * DEQ
Subject: Support for the Powder River Basin TMDL standard for recreation, fish and wildlife use
Date: Friday, March 15, 2024 10:39:24 AM

Dear Department of Environmental Quality,

I have lived in Baker County for 23 years, and I have come to see the importance of good water quality to our community.

I support the Powder River TMDL, and I want to see it approved to benefit our current and future generations.

Sincerely,

Marshall McComb

1641 Washington Ave.
Baker City, OR 97814

From: Mark Stromme
To: PowderTMDL * DEQ
Subject: Powder River
Date: Saturday, February 10, 2024 7:52:37 AM

Hello,
I would like to express my support for cleaning up the powder river, so that it may be usable for humans as a recreation opportunity, and not only be usable for cows and grazing.
I travel through the area frequently, and think it is a beautiful stream, but I am stunned that there are cows wandering into the river, and doing what they do in it. It should be pretty simple to create a buffer, and decrease the load of nutrients that lands in the river.
I am sure it is a complicated issue, but I would like to add my voice of support for cleaning it up
Thank you
Mark Stromme
503–3 14–4412
Sent from Mark's iPhone

From: Mark Scantlebury
To: PowderTMDL * DEQ
Subject: I fully support your TDML action on the Powder River
Date: Friday, February 2, 2024 4:56:10 PM

Dear DEQ,

Please don't give in to those that would like to the reduce restrictions on contaminants. The Powder River belongs to all Oregonians, not just those who use it to support their farming and ranching operations. We need to keep the river clean to support fish and wildlife, not just agricultural use.

I've read that excess bacteria levels have been documented in the river basin for more than 20 years. This is a great time and opportunity for DEQ to take action by adopting a plan to start cleaning up the river and its tributaries. In fact, because the Powder River basin fails to meet water quality standards for bacteria, state and federal law require a plan to clean it up.

Let's put the TDML in place with no compromises.

Sincerely yours,

Mark Scantlebury
Lower Columbia Canoe Club
1710 SW Westwood Ct
Portland OR 97239
503-246-2918

From: Judith Fisher
To: PowderTMDL * DEQ
Subject: Keeping the Powder River clean for all
Date: Thursday, February 8, 2024 8:55:58 AM

This comment is in support of the TDML process for the Powder River in Eastern Oregon.

Agricultural operations around the Powder River contaminate its water, threatening fish and wildlife and making it dangerous for boating, fishing and swimming. It is a wild river that belongs to all Oregonians, not just those who would contaminate it through excessive and inappropriate agriculture and ranching practices. It must be kept clean enough for wildlife to live and all to enjoy.

Because excess bacteria levels have been documented in the river basin for more than 20 years and the powder River basin fails to meet water quality standards for bacteria, state and federal law require a plan to clean it up.

Now is the time for DEQ to take action.

Thank you for your attention,
Judith Fisher

August 29, 2023

TO: Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property landowner, who raises commodities within the Powder Basin. I attended your open house for public comment on August 15th 2023, have reviewed the draft documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of the water. There are also no protocols for the sampling listed. Above where the tests were being taken was there a procedure in place to check for anything that could be adversely impacting the data? For example a Beaver Dam, homeless camp discharging effluent into the system, an elk feeding site. The document states that agriculture is responsible for a significant percentage of the bacteria concern in our waterways, however states that Elk Feeding sites are not causing a negative impact, this is deeply defective. DNA testing should be completed to show the species of animals contributing bacteria inputs into the system by an independent lab to certify the data is accurate and fair for all parties involved.

The financial impact to local landowners and agriculture producers will be significant. DEQ has no money or financial assistance programs for landowners available. Landowners will be footing the bill on their own to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations to a potential issue.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

Kate Rohner
Rohner Farms Inc.
Baker City OR

August 29, 2023

TO: Department of Environmental Quality (DEQ)

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Thank you,

Alice Knapp
2811 12th Street
Baker City, OR 97814

CERTIFIED MAIL

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Dept of Environmental Quality

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Oregon DEQ
700 NE Multnomah Street
Portland, OR 97232

ATTN: Alex Liverman

97232-2137 99

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

Re: Powder River Basin, Total Maximum Daily Load Rulemaking-Please Extend the Comment Period

Mr. Liverman,

My husband and I farmed and ranched for many years in Baker County. I am retired now, but am extremely concerned about the TMDL rule that was presented to Baker County residents on August 15, 2023, and the effects of implementing this rule will have on our way of life.

It is a complicated rule, and I do not understand that much about all the graphs and the statistics presented at the meeting, but I do know that our farmers and ranchers are known for good stewardship practices. Off-channel watering where practical, has been a practice as long as I can remember.Other practices such as taking care of riparian areas, and not overgrazing pastures, are important practices that insure the land will continue to be productive.

I can not understand why DEQ did not consider other sources of coliform other than that associated with cattle. When my husband and I ranched, huge herds of elk would graze on our fields. One rancher testified that his ranch receives run-off from an elk feeding station upstream of his ranch. There are four of these stations, each housing anywhere from 400-800 head of elk all winter long. For DEQ to come to the conclusion that e coli bacteria all comes from cattle, without any evidence that this is true, is not based on science and is the wrong conclusion to make.

Agriculture is the leading economic factor of Baker County's economy. It is the livelihood for families who have farmed and ranched in this area for generations. Baker County citizens and organizations such as Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW) should have all been involved during the formulation of this rule.We are asking that you work with us, not against us.

Along with my County Commissioners and other citizens, I am requesting a time extension beyond the stated deadline of August 31, 2023, for comments to be submitted. As I learn more about this rule, I would like the opportunity to provide further comments.

Sincerely,

Alice Knapp

Alice Knapp
Retired Farmer/Rancher and Concerned Citizen
541=519-8004

August 29, 2023

TO: Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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The financial impact to local landowners and agriculture producers will be significant. DEQ has no money or financial assistance programs for landowners available. Landowners will be footing the bill on their own to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations to a potential issue.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

August 29, 2023

TO: Department of Environmental Quality (DEQ)

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Thank you,

Becky S Harrell

8-31-23

August 29, 2023

TO: Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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Thank you,

Becky Curry - Schafer
8-31-2023

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 155
Seattle, WA 98101

WATER
DIVISION

August 25, 2023

Alex Liverman
Oregon Department of Environmental Quality
Watershed Management
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232-4100
powderTMDL@deq.oregon.gov

Re: EPA Comments on the Powder River Basin Bacteria Total Maximum Daily Loads

Dear Alex Liverman:

The Environmental Protection Agency (EPA) has reviewed the public draft of the Powder River Basin Bacteria Total Maximum Daily Loads (TMDLs), which was released for public comment on June 2, 2023. EPA's comments on these TMDLs are enclosed in chronological order with this letter below. In particular, please carefully review the fourth comment regarding load allocations.

1. **Protection Plan (Section 3, pg. 8)**

   This sentence, *"DEQ developed these TMDLs to address Category 5 listed assessment units and to protect all other assessment units and assessment categories, including "unassessed"* seems to imply that Oregon DEQ intends this TMDL to also serve as a protection plan for unimpaired waters. EPA supports and value Oregon DEQ's efforts to incorporate a protection plan into this TMDL and explicitly afford protection to unimpaired waters. EPA Region 10 has been working with Oregon DEQ on information to include in TMDL documents so, the TMDL can also be deemed a protection plan in the TMDL program.

   Since there are different thresholds for EPA action on TMDLs (approval) versus protection plans (acceptance), it is highly recommended to create a new section in the TMDL document clearly delineated as the protection plan. This protection plan section can rely upon and refer to analysis in other TMDL sections and the TSD; it could also contain core elements of a protection plan not included in other sections of the documents. The EPA website describes protection approaches[1] and the Protection Plan FAQ[2] includes a basic outline as to what a protection plan should include. Key elements are listed below.

   - *Identification of specific waters to be protected and risks to their condition*
   - *Activities proposed and/or implemented that are expected to resist degradation or impairment of these waters, or improve water quality (e.g., quantification of loading or assimilative capacity)*

[1] https://www.epa.gov/tmdl/protection-approaches
[2] https://www.epa.gov/sites/default/files/2021-06/documents/protection_faqs.pdf

- *Time frames over which a protection target condition is expected to be attained, maintained, or improved*
- *Quantitative and qualitative measures of expected success and planned responses to observed changes in risks or condition*

Collectively, the Powder River Basin TMDL, TSD, and WQMP generally include elements of a protection plan as outlined in the bullets above. Although, it is recommended that specific unimpaired waters to be protected are clearly identified. Ideally, a protection plan section in the TMDL document would summarize information needed under each of the above bullets referring to other TMDL sections, as necessary. Once again, EPA supports the inclusion of a protection plan within a TMDL, and we appreciate working with Oregon DEQ staff on this topic.

2. Water Quality Standards & Downstream Protections (Section 4, pg. 10-11)

Thank you for including the following language to acknowledge downstream water quality standards and use protections with respect to the state of Idaho relevant for this TMDL. The paragraph below is currently included in *Section 3: Pollutant Identification* but would be more appropriate in *Section 4: Water Quality Standards and Beneficial Uses*. EPA recommends moving this language into Section 4 and including references to Idaho's water quality standards for bacteria[3] (at a minimum). For additional information or a possible reference, please see EPA's Protection of Downstream Waters in Water Quality Standards FAQ sheet[4].

"Because waters of the Powder River, Burnt River and Brownlee Subbasins drain to the Snake River, which forms the border between the northeast portion of Oregon and Idaho, DEQ considered downstream impairments and effects of implementation of this TMDL. The mainstem Snake River does not currently have Category 5 bacteria listings by either Oregon or Idaho at or downstream of discharges from the Powder Basin. The flow volumes of the Powder, Burnt and Brownlee Subbasins are very small, relative to the Snake River flows. These smaller flows at multiple discharge points are unlikely to measurably improve or degrade bacteria conditions in the Snake River. However, because Oregon and Idaho share the same bacteria criteria, DEQ concluded that implementation of the TMDL allocations in Powder, Burnt and Brownlee Subbasins will result in attainment of both state's bacteria water quality criteria at the points of discharge to the Snake River."

3. Water Quality Standards & Downstream Protections (Section 4, pg.11, first paragraph)

The sentence below refers to a section of the TMDL Technical Support Document that no longer exists. It is recommended to strike this sentence:

"As explained in Section 3.2 of the TMDL Technical Support Document, DEQ used the single sample maximum criterion as the maximum daily concentration for the TMDL and specified that this concentration will not be exceeded over the 90-day period, so that the geometric mean criterion is also met."

[3] Refer to for specifics: https://www.epa.gov/sites/default/files/2014-12/documents/idwqs.pdf
[4] https://www.epa.gov/sites/default/files/2018-10/documents/protection-downstream-wqs-faqs.pdf

4. Load allocations (Section 9, pg. 17).

The TMDL currently does not include load allocations that meet both water quality standards at all times, which means that EPA would not be able to approve the TMDL. The TMDL must include allocations for all flow regimes that will meet water quality standards. The two water quality criteria for bacteria, the single sample maximum and geometric mean, are independently applicable and both must be attained to fully protect the beneficial use. The TMDL lists allocations in Table 9.1a, which correspond to the flow regime with the highest percent reduction. Although applying the highest percent reduction across all flow regimes meets water quality standards in all cases, applying a single allocation (in terms of mass loads) associated with the flow regime with the highest percent reduction does not meet water quality standards in all cases. Consolidating allocations by choosing a single mass load allocation corresponding to the flow regime with the highest percent regime can undermine water quality standards.

An allocation set at a higher flow regime allows for a greater bacteria concentration at lower flows. For instance, the loading capacity at flow gauge 11494-ORDEQ: Burnt River at Snake River Rd (Huntington) Burnt River from Clarks Creek Rd to Snake River near Huntington is 3.10E+12 based on exceedances at the high flow regime, and the load allocation in Table 9.1a is 2.75E+12 for irrigation drains and stormwater. At the lowest flow regime, where the flow is 45 cfs, (Table nn., TSD, p. 54), the allocation would allow irrigation drains and stormwater to discharge at 2500 cfu/100mL, using the following equation:

LOAD = (86,400*28,316.85*FLOW [cfs] * BACTERIA CONC. [org/100 mL])/100.

Another example is at 36192-ORDEQ: North Powder River at Miller Rd. Bridge, where the loading capacity of 5.46E+11 is associated with the medium-high flow regime. The water quality standard would not be met at the lower flow regimes. For instance, at the medium flow regime (17 cfs), the allocation allows a discharge at 1170 cfu/100mL and at the low flow regime (5 cfs), the allocation allows irrigation drains and stormwater to discharge at 3970 cfu/100mL.

This also applies for stations where water quality standards are currently being met. Selecting a loading capacity associated with the highest flow regime would not meet water quality standards at lower flow regimes, because they would authorize discharges of bacteria above water quality standards when flows are lower. Consolidating allocations would also not meet the TMDL requirements to ensure that allocations meet water quality standards under critical conditions and in different seasons.

To address this, Oregon DEQ could include the full TMDL loading capacities and allocations in a TMDL appendix to meet regulatory requirements ensuring that loading capacities and allocations meet both water quality standards in all conditions. Alternatively, Oregon DEQ could incorporate by reference Tables 4.5.2a through 4.5.2nn in the TMDL load allocation section. If the TMDL incorporates the allocations by reference, it should clearly state this in the TMDL.

5. Loading capacities (Section 8, pg 15).

The TMDL includes equations to calculate loading capacities throughout the basin. It also refers the reader to Tables 4.5.2a through 4.5.2nn in the TSD for the full loading capacities where flow gauges

are available. We recommend these Tables be included in the TMDL appendix. If Oregon DEQ chooses to refer the readers to the TSD for the loading capacities, these tables should be incorporated by reference to the TMDLs, not referred to. EPA Region 10 recommends including the loading capacities and allocations in the TMDL itself, rather than incorporated by reference, since they are the core of the TMDL.

6. Reasonable Assurance, (Section 11, pg. 20-21).

EPA strongly supports implementation of the TMDL, including actions that implement Oregon's Nonpoint Source Plan. These are necessary to meet Oregon's water quality standards and protect and restore water quality in the Powder River Basin. Federal and state regulations for reasonable assurances differ slightly. As explained in the Water Quality Management Plan, federal regulations for reasonable assurances apply to watersheds with point and nonpoint sources, where WLAs are based on an assumption that nonpoint source control measures will achieve expected load reductions, and the TMDL must provide reasonable assurances that it will achieve expected load reductions. The state regulations for reasonable assurances require the TMDL to demonstrate how it will be implemented in all circumstances. If the final TMDL includes the federal definition for reasonable assurances, the language should be clarified as above or refer to Section 7 of the Water Quality Management Plan. Though federal and state regulations differ slightly for reasonable assurances, EPA supports the inclusion of detailed information to implement all TMDL allocations.

We appreciate the opportunity to work closely with Oregon DEQ and look forward to continued coordination as this TMDL report gets finalized. Please feel free to contact me, at *clark.sydney@epa.gov* or (206) 553-4689, if you have any questions regarding our comments.

Sincerely,

Sydney Clark
Watersheds Section

cc: Vanessa Rose, Powder River Basin Coordinator, ODEQ
Steve Mrazik, Watershed Management Manager, ODEQ

August 29, 2023

TO: Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property landowner, who raises commodities within the Powder Basin. I attended your open house for public comment on August 15th 2023, have reviewed the draft documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of the water. There are also no protocols for the sampling listed. Above where the tests were being taken was there a procedure in place to check for anything that could be adversely impacting the data? For example a Beaver Dam, homeless camp discharging effluent into the system, an elk feeding site. The document states that agriculture is responsible for a significant percentage of the bacteria concern in our waterways, however states that Elk Feeding sites are not causing a negative impact, this is deeply defective. DNA testing should be completed to show the species of animals contributing bacteria inputs into the system by an independent lab to certify the data is accurate and fair for all parties involved.

The financial impact to local landowners and agriculture producers will be significant. DEQ has no money or financial assistance programs for landowners available. Landowners will be footing the bill on their own to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations to a potential issue.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

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Baker City OR 97814

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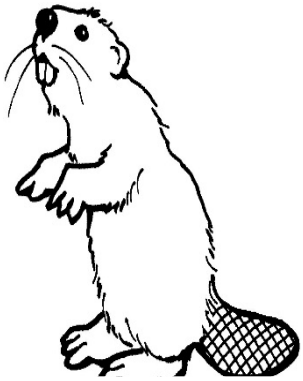

Not Just Another Dam Project

Burnt River Irr. District

19498 Hwy 245

Hereford, Or. 97837

Shawn Klaus Manager

541-446-3313 Office

541-480-4465 Manager (Cell)

briver@ortelco.net

Oregon Department of Environmental Quality

Burnt River Irrigation District (BRID), and representing our local patrons, adamantly oppose any TMDL rules being established for the Burnt River Sub-basin as part of the Powder River Basin.

BRID should not be considered a "DMA Responsible Person" due to the definitions. In paragraph two of Chapter 340-042-0030 the only responsibility of the irrigation district is to deliver water according to certificated water rights. Once water is delivered the irrigation district has no control.

There are many flaws that were found in the Draft Technical Support Document, Draft Water Quality Management Plan, Draft TMDL Rule, and data collection and analysis, that pertain to the Burnt River Sub-basin. Throughout these documents a lot of analysis and data is based on assumptions instead of on science. Listed below are just some of the inaccuracies and flaws that were found.

1. At the Clarks Creek measuring and collection area, the flow data used from Idaho Power was proven to be **inaccurate** for many years. The site has never been a good control point for flow data. BRID had our own flow measuring system installed there and due to inaccurate data BRID moved our site. Idaho Power then came in with their own measuring device and we found that method was not accurate either. BRID does not rely on that site for our water management needs.
2. The Burnt River Sub-basin should not be held to the contact recreation standard for E. coli. The reaches identified by DEQ as impaired are mostly on private ground with little to no access for public recreation. The only area in the sub-basin that we consider as recreation is Unity Reservoir and by DEQ's findings it is not considered impaired.
3. Impaired river reaches are poorly identified for Burnt River Sub-basin, specifically Indian Creek to Marble Creek. Knowing fully well the Indian Creek starting point is on private land with no public access therefore no flow data or sampling could have taken place.

4. At the Clarks Creek site, according to raw data sampling, it appears that data in any three-day period was a high E-coli day with a preceding day of a low number and a following day with a low number. We believe these discrepancies are due to improper sampling and collecting and not the fault of the lab. (For example, see dates 6/27/12, 6/28/12, and 6/26/12, also some of the two-day samples are suspect for sampling technical problems as well). At the Huntington site there was not enough sampling done for accurate analysis. BRID disputes your usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years.
5. Throughout all three documents, assumptions and conclusions are made that the main contributor is cattle without any DNA verification.
   Everything regarding the source of E. coli above Unity Reservoir, specifically the West Fork of Burnt River, is assumptions. The collection site at Rice Road which had high E. coli according to table 5.1b: BR Sub-basin Bacteria table 2010-2023, had no flow data, yet it is stated in the table that it is during irrigation season. There is no ag land on the West Fork of the Burnt River, as it is made up entirely of forest land and a very large subdivision that sits just above the lake. Many of these homes have been there since the 1960's with lots still being developed today and there are many homes that sit above the sampling site.
   The South Fork of the Burnt River which is listed as a Strategic Implementation Area also has no flow data and limited raw data. There were only approximately seven samples taken over a three-day period during irrigation season. In our opinion we need more data, more sampling along with flow data over a longer period to establish a true reflection of accuracy.

6. As part of detailed study to truly understand the perceived water quality issues on the Burnt River, BRID must convey to DEQ the importance of DNA testing to determine exactly what is responsible for any E. coli issues.
   A DNA study which can be referenced by a Capital Press article dated Jan 13, 2023 title "University Uses DNA to Determine Source of E. coli" by Carol Ryan Dumas, makes the case that "correlation is not causation". Even though cattle may be present at the time of high E. coli levels does not mean they were the source of contamination. The Mink Creek study determined that cattle were only responsible for a small percentage of E. coli, while humans, pets, birds, and wildlife were in fact the biggest contributors. After the study little or no changes had to be made in cattle management.
   Again, any TMDL E. coli regulations will only be effective if we know the actual sources of problems in the watershed. BRID reserves the right to research and present other studies on any appeal.

7. In the Draft TSD in table 5.2.1-page 69, Livestock grazing and pasture irrigation, shows bias towards animal agriculture without proof in the DEQ conclusions and are only based on assumptions. The Draft Water Quality Management Plan (WQMP) further shows the bias towards cattle as the main contributor based on assumptions instead of valid data. This section also concludes that the ag water quality program (Burnt River LAC) is ineffective in addressing E. coli. This conclusion is a direct slap in the face to ODA and the 1010 committee in their work over the last several years. The committee can only address the Water Quality Impairments that have a standard tied to them, which are temperature, sediment, and algae and in our opinion

have done a great job addressing these issues. Until now the committee has not had a standard for E-coli but are very capable of addressing it in the future.
Further in the Draft SQMP section 6.1 Persons Responsible for Monitoring, the BRID feels the requirements for submittal and monitoring requirements are a financial and time burden. As stated, many times, the lack of current and adequate data must be addressed before a monitoring plan can be developed. The monitoring and reporting requirements will be very expensive for the DMA's and may not be needed if current and adequate data proves there are no exceedances of E-coli standards. The BRID ask to be removed as a "Persons Responsible".

With the data deficiencies and blatant bias against animal agriculture throughout these documents, adopting the Draft TMDL Rule will only create landowner's distrust in the regulating agencies and fuel years of litigation and legislative involvement creating little landowner involvement in reaching a higher level of water quality in the Burnt River Sub-basin.

The Burnt River Irrigation District proposes a joint five-year detailed Water Quality Study with DNA and full flow data collection before TMDL rules are adopted. This would be working collaboratively with other experts and advisory groups within the Powder River Basin.

The BRID would like to reserve the right to point out other Oregon DEQ document deficiencies and flaws in the future and correct any errors.

Thank you for your consideration.
Sincerely,
Burnt River Irrigation District

Bill Moore-Board Chair
Ted Bloomer- Board Member
Pat Sullivan- Board Member
Shawn Klaus – District Manager

August 29, 2023

TO: Department of Environmental Quality (DEQ)

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I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

Mark R. Coons

Baker County, Oregon

Natural Resources Plan

Adopted by the Baker County Board of Commissioners
July 20, 2016

Adopted by the Baker County Natural Resources Advisory Committee,
June 28, 2016

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Purpose & Need

It is the Purpose of the Baker County Natural Resources Plan to set forth the policies of Baker County in regards to the use, and access to, natural resources located on public land. It is a Baker County Board of Commissioners priority to engage in coordination with federal and state agencies to provide for the health, safety and welfare and economic benefits of its natural resources for its citizens. The Baker County Board of Commissioners will exercise its legal right to full participation in the planning processes utilized by state and federal agencies for developing and implementing land use plans and actions within the County. The Baker County Board of Commissioner's interests extend to land use plans or action formulation, development and implementation, including monitoring and evaluation. Baker County directs that all decisions be based on current, relevant, peer reviewed science and data, which take into account multiple land uses within all plans or actions.

The use of public land is critical to the health, safety and welfare and economic stability of Baker County citizens. The Baker County Board of Commissioners recognizes the inherent natural beauty and the quality of life afforded to the citizens and visitors to Baker County. The Board knows and values the importance of private property rights, water rights, open roads systems and RS 2477 right-of-ways, the multiple uses for all public lands within Baker County and the quality and quantity of the natural resources.

The Board of Commissioners accepts that it is its duty and obligation to enter into coordination for official resource planning activities and that federal and state agencies must fulfill their requirement to coordinate with the County's plan to seek to ensure consistency between plans as required by federal and state laws.

The Board commits to the following principles to guide decision making governing natural resources within the County:

1. Expansion, revitalization and continuation of multiple uses on all public lands in Baker County.
2. Multiple use shall be inclusive rather than exclusive, thereby avoiding pitting one use against the other.
3. All plans shall mitigate based on multiple use rather than by a resource by resource issue.
4. Maintain flexibility in all plans to allow for extraction of natural resources from public lands and to continue to use existing resources in accordance with all laws.
5. Protect and preserve the following rights of all County's citizens, including:
    a. Private property interests, such as water and grazing rights and access to lands, which have ties to public lands,

b. Traditional economic structures in the county that form the base for economic stability,
c. Historic custom, culture and values of the local people, and
d. Enjoyment of the natural resources of the County.

In accordance with federal and state laws regarding public land use planning and protection of private property interests, the Board of Commissioners seeks to expand, continue and to revitalize the various multiple uses of federally managed lands. To that end, the Board of Commissioners have adopted this plan, which includes policies regarding the various multiple uses on publicly managed lands in Baker County. This plan serves to assure the County's elected officials have meaningful public involvement in the development of land use programs, land use regulations, and land use decisions for public lands in recognition of the significant impact these actions can have on private lands and the health, safety and welfare and economic benefits of its citizens.

This plan has been prepared by the Baker County Natural Resources Advisory Committee with input from the citizens of Baker County and subsequently reviewed and adopted by the Baker County Board of Commissioners. It is intended to be a base line plan and designed to be supplemented and amended as better information becomes available, unforeseen problems arise or issues become apparent which need to be addressed.

Revision

As natural resource issues develop and change over time, it is to be expected that Baker County's policies will evolve to meet the needs of the community. It is, therefore, to be expected that the Baker County Natural Resources Plan will be amended from time to time, and further, will undergo routine and periodic review on a yearly basis or as needed or as directed by the Baker County Board of Commissioners.

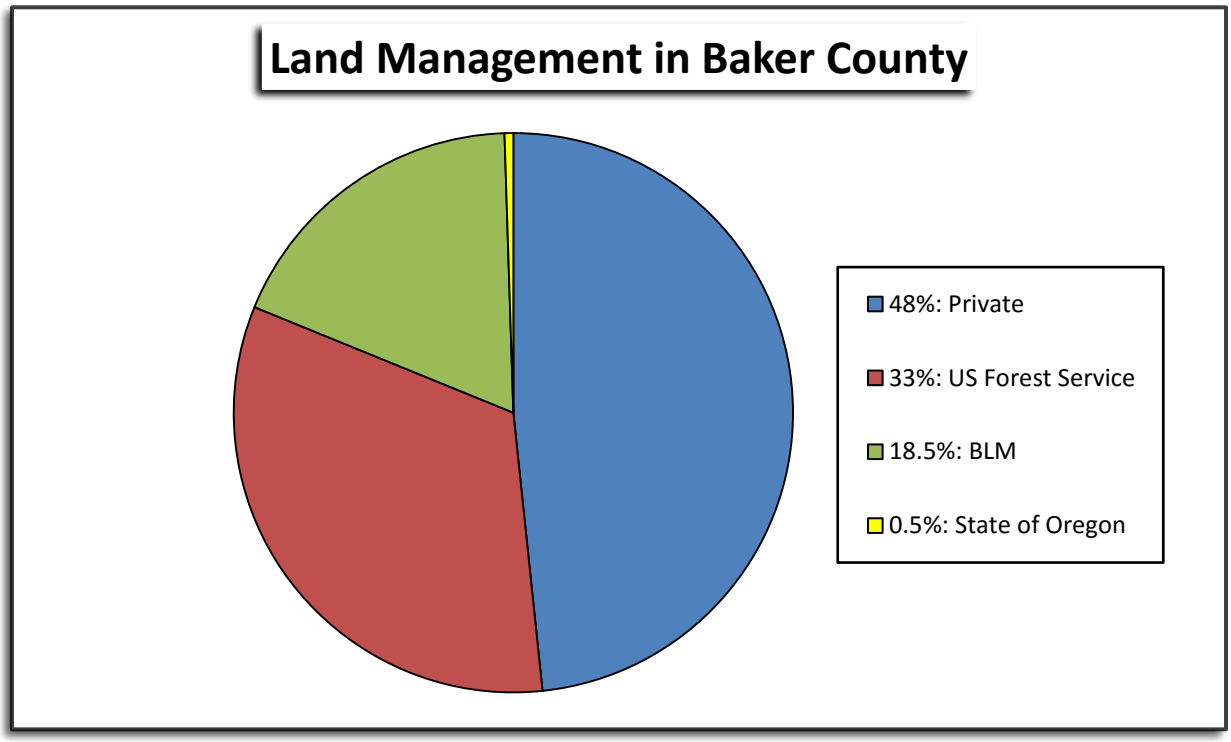
Severability

Should a court declare any part of these policies void, unenforceable, or invalid, the remaining provisions shall remain in full force and effect.

Land Use

Land Management

Baker County spans 3,089 square miles[1] (1,976,960 acres), making Baker County larger than Rhode Island or Delaware. Federal agencies manage approximately 51.5% of the land in Baker County, comprising a total of 1,016,511 acres. Approximately 33% of the County is managed by the US Forest Service[2] (USFS), 18.5% is managed by the Bureau of Land Management (BLM)[3], and an additional 10,067 acres[4], or 0.5% of Baker County, is managed by the State of Oregon. The remaining 48% of the land in the county, approximately 950,382 acres, is privately owned. The citizens of Baker County rely on *both* public and private land for natural resources, recreation, and the ability to continue our way of life—especially agriculture and livestock grazing, mining, and timber harvest (discussed in later sections); therefore, all decisions affecting public lands could potentially affect Baker County's economy, customs, culture, and enjoyment of the land.



[1] Oregon Blue Book, Baker County
[2] 652,265 acres. USFS Northeast Oregon Land Zone Realty Specialist
[3] 364,246 acres. BLM Vale District, Baker Resource Area
[4] Baker County Assessors Office

Land Use

Agriculture and Timber

Agriculture and forest production are the predominant land uses in Baker County. According to Baker County Assessor's records, there are approximately 146,386 irrigated acres and 1,129,662 non-irrigated acres that are, or could be, used for agricultural production. Of those acres, 377 irrigated acres and 399,097 non-irrigated acres are publicly owned.[5] There are an additional 673,681 acres of timber, 628,681 acres of which are publicly managed.

Mining

Mining is an important resource in Baker County. According to the Northwest Mining Association, the State of Oregon is home to over 300 medium to large-scale mining operations. Approximately 20 operations in Baker County are large enough that they are administered by the Oregon Department of Geology and Mineral Industries (DOGAMI). Currently, there are over 1,200 mining claims filed in Baker County on U.S. Forest Service (USFS) and Bureau of Land Management (BLM) managed lands, and these claims are owned by both local and out of area miners. In addition, there are many patented mining properties and other lands that are mineral in character where small-scale mining takes place.

Wilderness and Areas of Critical Environmental Concern

A total of 76,310 federally managed acres in the County are restricted under these special programs, totaling approximately 8% of the public land and approximately 3.8% of the total land in Baker County. Specifically, the U.S. Forest Service administers two Wilderness Areas totaling over 37,650 acres in Baker County. The Monument Rock Wilderness Area covers approximately 18,650 acres, while the Eagle Cap Wilderness Area covers approximately 19,000 acres.

The Bureau of Land Management does not currently manage any Wilderness Areas in Baker County, but does manage 14,846 acres designated as a Wilderness Study Area.[6] The Federal Land Policy and Management and Act (FLPMA) requires the Department of the Interior to manage lands that are being studied for their suitability for wilderness in a manner that does not impair the suitability of the area for "preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on October 21, 1976." (FLPMA pg. 45)

The Bureau of Land Management is also responsible for managing 23,817 acres of Areas of Critical Environmental Concern (ACEC) in Baker County[6]. The ACEC program also came from the

[5] The Baker County Assessor's Office used soil class, market class, and water factors to make these approximations.
[6] BLM Vale District, Baker Resource Area

1976 Federal Lands Policy and Management Act (FLPMA). The FLPMA directs the BLM to protect important riparian corridors, threatened and endangered species habitats, cultural and archeological resources and unique scenic landscapes that the agency assesses as being in need of special management attention.

Custom & Culture

Baker County is steeped in the traditions of the Oregon Trail and the settlement of the western United States. By 1811, explorers, trappers and hardy mountain men explored the mountains, hills and valleys looking for furs, game and gold. The first wagon trains along the Oregon Trail started in 1843 and passed through the area that would become Baker County on their long trek to the Willamette Valley.

By the early 1860's, mining was a familiar activity in the Blue Mountains of Eastern Oregon. Gold discoveries in areas such as Griffin Gulch and Blue Canyon prompted an influx of eager miners and shop keepers to this area. As a result, settlements grew to provide necessary supplies and services for miners working the streams and hills of Baker County. The town of Auburn was the first established city in the Blue Mountains, touting a population of 5,000 people in 1862, which exceeded Portland, Oregon's population by nearly 2,000 people during the same time period. While gold was a lucrative commodity, many mines such as the Iron Dyke mine near Homestead and the Mother Lode mine near Keating, produced significant amounts of copper, gold and silver as well as lead and zinc as minor by-products of the industry. The extension of the railroad to Baker City in 1884, and the completion of the Sumpter Valley Railroad in 1896, accelerated the mining boom in Baker County. Mining in northeastern Oregon yielded nearly 3,500,000 ounces of gold and an equal amount of silver, comprising nearly 60 percent of all the gold and silver produced in the state of Oregon.

On October 24, 1866, the state legislature named Baker City the county seat, and by 1900, Baker City was a regional trade center. By the end of the 19th century cattle, sheep and farming operations dominated the area and local settlements grew. Logging and the lumber business soon followed and the Baker County area thrived due to the abundance of Natural Resources in the area.

After 1900, agriculture, mining and the lumber business were mainstays of the local economy. Water was a vital commodity and the early miners and settlers stored and moved water throughout the County.

Shortly after the onset of World War II, an order from the War Production Board declared men and materials could be better used elsewhere in the war effort. After the war, mining labor and material costs increased, few mines were reactivated and the price of gold remained fixed for more than 40 years. The result was a rapid decrease in the mining industry.

As the large mining operations began to close, logging and agriculture continued to thrive in the County. Baker Livestock Auction brought people from all over Eastern Oregon to market their livestock and the retail businesses were strong and vital.

Forest policy changed in the 1980's and 90's and the forest product industries began to disappear. The loss of the forest products industry and the jobs in the woods were devastating to the local economy. In addition, the livestock auction closed in 1985, which dealt another blow to the County.

Baker County citizens worked hard to weather this economic disaster. Though the natural resource industries had been dealt a tremendous blow, the County moved forward. Agriculture remained the mainstay of the economy, but a focus on tourism helped to stabilize the impact of the loss of mining and lumber.

The demographics of the County has changed dramatically. Young people have left the County due to the lack of jobs. The population has grown older. The citizens remain committed to our heritage, the natural beauty of our surroundings and an independent spirit which our ancestors possessed and passed down to us.

Baker County is rich in natural resources. Our forests are a great source of renewable products. Our water resources are excellent and the lifeblood of our agricultural industry. Minerals are still abundant throughout the County and can be a significant economic generator. The natural beauty of the landscape, the abundance of wildlife and the clear skies make Baker County a great place to live and visit.

Baker County citizens and businesses understand the importance of our natural resources and the concept of multiple uses of all resources. We have seen the rise and fall of the industries which our County was founded upon. We believe that economic opportunities and new industries will be achieved through sound stewardship of the county's natural resources and the use of common sense, coordination and innovative thinking.

Principles for Federal and State Land Management Within Baker County

Public lands dominate the landscape in Baker County, with approximately 52% of the land in the County managed by a public agency. Therefore, decisions made by the agencies managing our public lands and resources directly affect Baker County's residents, custom and culture, economy, and valued way of life. The following policies codify Baker County's requirements, needs, and expectations of federal and state agencies with land-use planning and decision-making powers within the boundaries of Baker County.

Recognition of County Status, Responsibilities, and Authority

Baker County represents a local government as defined by ORS 174.116 (1)(a).[7] In order to discharge its statutory obligations and duties as a County within the State of Oregon,

> "Baker County has the primary responsibility for securing and promoting the public peace, general welfare, health, and safety of the citizens of the County through preservation of their customs, culture, and economic stability, protection and use of their environment, and protection of their private property rights."
>
> Baker County Ordinance No. 2001-1

Furthermore, Oregon State law empowers Baker County to pass ordinances in the interest of fulfilling these responsibilities to its citizens, and to exercise its authority over such matters insofar as doing so does not conflict with State or Federal law:

> **"**…[T]he governing body or the electors of a county may by ordinance exercise authority within the county over matters of county concern, to the fullest extent allowed by Constitutions and laws of the United States and of this state… The power granted by this section is in addition to other grants of power to counties, shall not be construed to limit or qualify any such grant and shall be liberally construed, to the end that counties have all powers over matters of county concern that it is possible for them to have under the Constitutions and laws of the United States and of this state."
>
> ORS 203.035

Baker County expects federal and state land management agencies to respect and understand the County's responsibilities to its citizens, and to work through coordination with the County in

[7] "…as used in the statutes of this state "local government" means all cities, counties and local service districts located in this state, and all administrative subdivisions of those cities, counties and local service districts". ORS 174.116 (1)(a)

order to ensure that these responsibilities are satisfied with regard to issues pertaining to public lands and natural resource management within the County's boundaries.

Statutory and Regulatory Authority

Management of the Federal and State lands is dictated by a system of federal and state statutes, regulations, and policies. Baker County expects that all applicable statutes, regulations, and policies will be followed by federal and state land management agencies, and that federal and state agencies shall fulfill their affirmative responsibility to be apprised of all pertinent laws and policies.

County Involvement in Federal Land Management

Certain federal statues, regulations, and policies discussed below offer special opportunities to state, tribal, and local government agencies to participate in federal agency planning and decision-making when such actions take place within the purview of the state, tribal, or local government's responsibilities to the people it represents. Importantly, many such opportunities are **only** offered to government agencies; they are not available to private individuals, special interest groups, or NGOs.

As a local government within the State of Oregon, Baker County is therefore entitled to avail itself of these special opportunities for government involvement in federal decision-making. In accordance with federal statute and regulations, federal agencies shall recognize that certain opportunities, such as coordination as defined by FLPMA and NFMA is exclusive to government agencies, and therefore not fulfilled merely through soliciting "public input" or engaging in "stake holder consultation" or "collaboration"—opportunities that are available to the broader interested public.

Coordination

Coordination is a federally mandated process that requires all state and federal agencies including the BLM and Forest Service to work with local governments to seek consistency between state and federal land use planning and management and local land use plans and policies. Coordination, by its plain meaning, requires state and federal agencies do more than just *inform* local governments of their future management plans and decisions and it requires that they do more than merely *solicit comments* from local government entities. Coordination calls for something beyond that: a negotiation on a government-to-government basis that seeks to ensure officially approved local plans and policies are included in the public lands planning and management decisions of state and federal agencies.

Baker County expects the state and federal agencies to engage in coordination with the County, upon the County's request, for land use planning efforts **and on an ongoing basis**—as mandated by applicable statute, regulations, policy, and case law. Coordination as envisaged by Congress involves use of a local government plan or policy to determine whether proposed

federal agency plans, policies and management decisions are consistent with the needs and requirements of the local community. **Baker County expects that all agency planning efforts and subsequent management actions shall be reviewed, in coordination with the County, with an aim of achieving maximum consistency with the Baker County Natural Resources Plan. Agency decisions and plans are expected to be consistent with this Plan wherever practicable and/or wherever mandated by applicable federal statute or regulations.**

Statutory Authority—Coordination with the BLM

> "In the development and revision of land use plans, the Secretary shall […] to the extent consistent with the laws governing the administration of the public lands, coordinate the land use inventory, planning, and management activities […] with the land use planning and management programs […] of local governments… Land use plans of the Secretary under this section **shall be consistent with State and local plans** to the maximum extent he finds consistent with federal law and the purposes of this Act."
>
> 43 U.S.C § 1712(c)(9), emphasis added (FLPMA)
>
> "*Consistent* means that the Bureau of Land Management plans will adhere to the terms, conditions, and decisions of officially approved and adopted resource related plans, or in their absence, with policies and programs, subject to the qualifications in § 1615.2 of this title."
>
> 43 CFR § 1601.0-5(c)

Statutory and Regulatory Authority—Coordination with the U.S. Forest Service

> "[T]he Secretary of Agriculture shall develop, maintain, and, as appropriate, revise land and resource management plans for units of the National Forest System, **coordinated with the land and resource management planning processes of State and local governments** and other Federal agencies."
>
> 16 U.S.C. § 1604(a)
>
> (b) *Coordination with other public planning efforts.*
> (1) The responsible official shall coordinate land management planning with the equivalent and related planning efforts of federally recognized Indian Tribes, Alaska Native Corporations, other Federal agencies, and State and local governments.

(2) For plan development or revision, the responsible official shall review the planning and land use policies of federally recognized Indian Tribes (43 U.S.C. 1712(b)), Alaska Native Corporations, other Federal agencies, and State and local governments, where relevant to the plan area. The results of this review shall be displayed in the environmental impact statement (EIS) for the plan (40 CFR 1502.16(c), 1506.2). The review shall include consideration of:
(i) The objectives of federally recognized Indian Tribes, Alaska Native Corporations, other Federal agencies, and State and local governments, as expressed in their plans and policies;
(ii) The compatibility and interrelated impacts of these plans and policies;
(iii) Opportunities for the plan to
address the impacts identified or contribute to joint objectives; and
(iv) Opportunities to resolve or reduce conflicts, within the context of developing the plan's desired conditions or objectives…

36 CFR § 219.4

"The responsible official shall coordinate with appropriate Federal, State, county, and other local governmental entities and tribal governments when designating National Forest System roads, National Forest System trails, and areas on National Forest System Lands pursuant to this subpart."

36 CFR § 212.53

NEPA Consistency Review

NEPA requires that a federal agency prepare a consistency review for any federal agency action calling for an environmental impact statement (EIS). Specifically, CEQ regulations require that EISs "shall discuss any inconsistency of a proposed action with any approved state or local plan and laws (whether or not federally sanctioned). Where an inconsistency exists, the [EIS] should describe the extent to which the agency would reconcile its proposed action with the plan or law." 40 CFR § 1506.2(d). Baker County fully expects that all EISs prepared by the BLM, Forest Service, or other federal agencies on lands within the County's boundaries—in whole or in part—feature such a consistency review with the Baker County Natural Resources Plan, and that **all practicable efforts are made to reconcile inconsistencies of proposed actions and/or alternatives with the Plan**. If consistency is not achieved, the federal agency shall justify its decision on the record. Further, in the event that consistency is not achieved, Baker County expects that the federal agency shall engage with the County in conflict resolution and work with the County to mitigate any residual impacts to the County and its citizens.

BLM Dispute Resolution

While it is inevitable that there will be occasional disagreements between the BLM and Baker County over natural resource issues, Baker County requires that such conflicts be resolved to the maximum extent possible. For this reason, Baker County expects that unresolved conflicts and inconsistencies between BLM plans and/or actions and the Baker County Natural Resources Plan, and conflicts between permittees, leasees, and other public land users and the BLM, be addressed through the Rule that provides if consistency cannot be resolved, there is an appeal to the National Director of BLM.

Further Opportunities for County Involvement with Federal Agency Decision-making

In addition to the coordination mandate in FLPMA and NFMA a number of other federal and state statutes and corresponding regulations require state and federal agencies to offer other opportunities for coordination with local governments in making land and resource management decisions. Relevant statutes featuring such opportunities include the Clean Water Act, the Clean Air Act, the Endangered Species Act, the Wild and Scenic Rivers Act, and the National Preservation Act. Many of these opportunities for additional County involvement will be covered in the resource-specific sections below.

It is the policy of Baker County to engage in all such opportunities, and to work through coordination with federal and state agencies on all projects and decisions that could affect County interests. Further, it is the express expectation of the County that federal and state agencies will give the County early notification of forthcoming decision-making and extend an early invitation to the County to participate in joint planning and consultation.

Private Property Rights and Property Interests

Many private individuals hold either private property rights or property interests on public lands within Baker County. These may include water rights, mining claims, rights of way, as well as preference to grazing permits. Such property rights and interests constitute valuable holdings, increase the County tax base, and are vital for the stability of small businesses essential to the economic make-up and culture of free enterprise of Baker County. Baker County is dedicated to preserving these rights and interests, and expects that federal agencies shall not attempt to terminate, or otherwise demand the transfer or relinquishment of, such holdings in whole or in part from private individuals.

Data Quality

Baker County requires that all data—environmental, economic, and social—used to develop

federal land and natural resource use decisions be impartial, collected and analyzed using tested and peer reviewed methods, and current. Environmental data used to justify changes in land or natural resource use must be firmly anchored in on-the-ground monitoring and trend data (as opposed to computer modeling and other remotely-collected data). Where remotely-collected data are used to supplement monitoring or other on-the-ground data, federal and state agencies shall clearly state the mapping error, or similar margin of error, of the methodology used and ensure that the methodology is applied at the appropriate scale.

Further, federal and state agencies shall routinely solicit input and data from authoritative regional sources including Baker County, the OSU Extension Service, and the OSU/USDA Eastern Oregon Agriculture Research Center (EOARC). All data used in land management decisions by federal agencies must meet the minimal requirements outlined in the Data Quality Act[8] and guidelines pursuant to this Act: Data gathered and used by the BLM shall meet the standards established by the DOI Information Quality Guidelines and Policies and the BLM Information Quality Guidelines; information gathered and used by the Forest Service shall meet the General Requirements for Information Quality established by the USDA.

Coordinated Management and Conservation

Baker County believes that a coordinated, interdisciplinary approach to the management of public lands will best promote the conservation of our natural resources while developing sustainable methods for their use. Baker County also holds that locally-based, on-the-ground management, monitoring, and information gathering is preferable to out-sourcing data collection and/or analysis to remote providers. Therefore, Baker County expects that federal and state agencies will work with the County, the local Soil and Water Conservation Districts, Rural Fire Protection Agencies, Oregon State University Department of Range Science, Oregon State University Extension Service, USDA range scientists at the Eastern Oregon Agriculture Research Center, as well as permittees and leasees on public lands on an ongoing basis to monitor, manage, share information, problem solve, apply adaptive management strategies, and promote the health of public lands to ensure that natural resource use is both ongoing and sustainable.

[8] "…for ensuring and maximizing the quality, objectivity, utility, and integrity of information, including statistical information, disseminated by Federal agencies…"
Sec. 515 of Public L. No. 106-554.

Economy

The historic roots of Baker County—mining, ranching, farming, and timber harvest—are still the lifeblood of Baker County's economy. The County's customs and culture are based on a land stewardship ethic stemming from the people's dependence on the land to provide a livelihood- for those who directly work on the land, and those whose businesses serve the natural resource industries and people. It is Baker County's intent to protect those values through coordination with those who implement policy on both private and public lands.

Economic Policies

Baker County supports efforts to maintain or improve the overall economic base of the county through the judicious use and enjoyment of federal and state lands in the county.

It is Baker County's policy that economic diversity and long-term stability are beneficial to the welfare of county residents and the environment.

Baker County will not support federal and state agencies on land management decisions when the economic impact is not carefully considered in the decision. In such cases, Baker County may be forced to appeal or seek other relief.

Any proposed change in land use must evaluate, mitigate, and minimize impacts to the customs and culture and the economic stability of the county.

Baker County recommends federal and state agencies entertain and evaluate opportunities for free trade and enterprise based on their merits and impacts to federal and state lands. While economics should not always be the driving factor in decision making, it should be part of the balance of interests considered.

Federal and state land management agencies must work in coordination with Baker County to accurately provide socioeconomic impact analysis and provide socioeconomic impact mitigation recommendations to both the agencies overseeing the development as well as county government officials. Agencies overseeing the development should make every reasonable attempt to implement the socioeconomic impact mitigation recommendations while working with local government officials.

Baker County recommends that socio-economic monitoring and analysis be performed by experts familiar with the area's unique history, culture, economy and resources. It is Baker County's policy that such monitoring and analysis be paid for by the entity creating the impact, and that this requirement be understood by all involved, early in the process.

Federal land management agencies shall notify Baker County of any actions or regulations that affect the economic base of the county at the earliest opportunity; and Baker County will review and comment on proposed actions significant to the economic base of the county.

When a negative impact of a proposed action is unavoidable, provisions should be made for mitigation or compensation for those impacts.

It is Baker County's policy that analysis of proposed major federal actions must include consideration of the following socioeconomic factors:

• An evaluation of the social and economic conditions in the area of site influence. The social and economic conditions shall be inventoried and evaluated as they currently exist, projected as they would exist in the future without the proposed industrial facility and as they will exist with the facility.

• A study of the area economy including a description of methodology used. The study may include, but is not limited to, the following factors:

* Employment projections by major sector
* Economic bases and economic trends of the local economy
* Family and per capita income
* Purchasing power of earnings within the area of site influence
* Short and long term fluctuations in resource consumption and resource availability
* Employment dislocation and skill obsolescence
* Diversity of economy
* Estimates of basic versus non-basic employment
* Unemployment rates
* Population, optionally including demographics and projections
* Housing, including quantitative evaluations of the number of units in the area and discussion of vacancy rates, costs, and rental rates of the units
* Transportation
* Governmental facilities
* Sewer and water distribution and treatment facilities
* Solid waste collection and disposal services
* Health and medical care facilities and services
* Human service facilities
* Recreational facilities
* Schools
* Mental Health services
* Problems due to the transition from temporary, construction employees to operating

workforces

* Fiscal analysis over the projection period for all local governments, including revenue structure, expenditure levels, mill levies, services provided through public financing, and the problems in providing public services

* Estimate of sales and use taxes and ad valorem taxes generated by the proposed activity

* Impact controls and mitigating measures proposed by the applicant to alleviate adverse social and economic impacts associated with construction and operation of the proposed industrial facility.

Access & Travel Management

Access to private and public lands in Baker County is an integral piece of the Baker County Natural Resources Plan. The intent of Baker County's travel management policies is to provide access for multiple land uses while respecting private property rights as well as utilizing the resources on public lands.

Historic access to what are now public lands is important for the sustainability of the citizens' customs and culture and promotes a positive outdoor experiences for visitors. Therefore, Revised Statute (RS) 2477 rights-of-way, will be enacted at appropriate areas. RS 2477 rights-of-way is a simple and straightforward law. This is the entire text of RS 2477 rights-of-way: "The rights-of-way for the construction of highways across public lands not reserved for public purposes is hereby granted." Congress granted rights-of-way, not a road. In fact, RS 2477 rights-of-way can host a number of things besides roads. The legal definition of "highway" in the law means not only the frequently-traveled, periodically-maintained roads commonly associated with it, but also other kinds of public ways, including carriage-ways, bridle-ways, footways, trails, bridges, and even railroads, canals, ferries and navigable rivers. The essential element in defining "highway" is that whatever the means of transport, the public has the right to come and go at will for the economic viability of the County.

The Baker County Natural Resources Plan is intended to sustain the management of road systems to deal with the changing uses of lands within Baker County. The use and enjoyment of the natural resources of Baker County dictate that we have a transportation system which is efficient, available and balances the various resource values. Access and travel issues are critical to all resource uses encompassed in the Baker County Natural Resources Plan.

Travel Management Policies

It is the policy of Baker County that roads providing access for the use and enjoyment of public lands shall remain open and be accessible as needed. Specifically, there will be no net loss to access. Proposed road closures affecting access to or on public lands in Baker County shall be discussed on a case-by-case basis, and shall be individually justified. Where there is no clear and overriding reason to close a particular road, it shall remain open. Further, proposed road closures require an appropriate County and public review process; noticing, appeal periods, and a genuine good faith effort to incorporate the suggestions and concerns put forth by the public. Proposed road closures shall also be discussed in coordination with the Baker County Board of Commissioners, and shall be consistent with the Baker County Natural Resources Plan to the maximum extent practicable and allowable by law.

Road inventories shall be carried out in coordination with Baker County and with the input of Baker County citizens. Unless prohibited by law, roads accessing grazing allotments, water developments, mining claims, foraging sites and other authorized land uses shall remain open.

Baker County supports the partnering of public and private entities for the ongoing access of roads on public lands.

Baker County supports the improvement of signage and maps for navigation on public lands to enhance the enjoyment and safety of visitors. Maps must reflect the valid federal land use plan.

It is the policy of Baker County that all RS 2477 rights-of-way roads historically and currently used for any natural resource to market must remain open for public access. These include, but are not limited to, forest-to-market, mine-to-market, livestock trailways, wagon and stage coach roads, access trails to reservoirs, streams, springs and rivers, historic sites of towns, post offices and schools, and other places of historic land uses.

All RS 2477 rights-of-ways and historical site roads will be open to the public at all times to support the recreation and tourism industries. Where appropriate, installation of informational signage shall be installed to explain the significance of the site.

It is Baker County's policy to continue the open road systems for off-road (cross country) access for firewood cutting and gathering, snowmobiling and other lawful uses.

Agriculture – Livestock and Crop Production

Production Agriculture

Production agriculture, which includes livestock and crop, is an important part of the Baker County economy. Many of the farms and ranches of the county are three or more generations of the same family operating and caring for the land. Agriculture is an integral part of the economy, custom and culture of Baker County, as well as a way of life to the farming and ranching families.

Baker County's Ordinance 2000-01, "Baker County Resource Use Protection Ordinance" is not only a right to farm ordinance, but also describes other protection for other natural resource uses in Baker County (See Appendix A). The State of Oregon also has a right to farm law which further describes actions and responses to farming and use of other natural resources (See Appendix B). These Right to Farm laws shall be taken into account and used with consistency during federal and state land use decisions.

Crop Production

The comparatively short growing season of the county dictates the rather narrow variety of cash crops that can be grown here. Examples of crops include, but are not limited to, small grains, hay, potatoes, mint and some grass seed. Crops are grown in the valleys where the soils are deep and rich and water is supplied through various irrigation methods. Generally, crop production occurs on private lands.

Crop Production Agriculture Policy

It is the policy of Baker County to support production agriculture and the conscientious use of natural resources necessary for sustaining agricultural enterprise.

Wildlife managers shall work with private property owners to keep private property damage to land and livestock to a minimum.

Livestock Production and Grazing

Livestock production has customarily been, and continues to be, a significant contributor to the economic stability of Baker County. With over $40 million in annual sales, livestock production totals 63% of all agricultural sales in Baker County.

Livestock producers who graze on public land have been issued grazing permits by the federal land management agencies based on the ownership of base property to which a grazing permit is tied. Currently, the base property does not need to be adjacent to a livestock grazing allotment. For rangelands managed by the BLM, this right was defined in the Taylor Grazing Act of 1934 and the Federal Land Policy and Management Act of 1976. Grazing administration on the National Forest System lands are administered under the Granger-Thye Act of 1950, the Multiple-Use Sustained-Yield Act of 1960 and the Forest and Rangeland Renewable Resources Planning Act of 1974, among others.

In Baker County, many livestock producers rely on grazing permits administered by the BLM and the U.S. Forest Service. In 2009, the Whitman Ranger District of the Wallowa Whitman National Forest has 51 designated cattle allotments that total 749,946 acres. The carrying capacity of these allotments equals 31,810 Animal Unit Months (AUM). The seasons of use vary on these allotments, but most extend from June 1-September 30, although some begin as early as April 15 and some end as late as October 31.[9] The Baker District of the BLM had 281 allotments that total 368,689 public acres, which are tied to 312,969 private acres. The carrying capacity of these allotments equals 44,402 AUMs. The seasons of use vary by permit, but some begin as early as April 1 and some end as late as December 1. An AUM is defined by the Society of Range Management as the amount of forage required by an animal unit (1,000-pound cow or the equivalent) for one month. The preservation of these permits and the continuation of historic stocking rates is a crucial factor in sustainable livestock production in Baker County.

Public Lands Livestock and Grazing Policy

The continued viability of livestock operations and the livestock industry shall be supported on federal and state lands within Baker County through 1) proactive and coordinated management of land and forage resources; 2) proper optimization of livestock AUMs; 3) the use of unbiased, current scientific methods and data; and 4) upholding the multiple use provisions of federal and state law.

Federal and state grazing allotments and leases shall be managed through working partnerships with permittees and leasees, which will include joint monitoring and data collection, joint problem-solving, developing adaptive management strategies, development of grazing plans and NEPA alternatives for permit renewal.

In general, grazing on federal and state allotments and leases shall continue at historical stocking rates. In the event that range health standards on a permit or lease are not being met, stocking rates will be reduced only in the event that; 1) failure to meet range health standards

[9] Range Management Specialist, Whitman District, Wallowa Whitman National Forest 11/17/2009

is established on the basis of current, on-the-ground monitoring data; 2) failure to meet range health standards is shown to be caused by current, as opposed to historic, livestock management practices; and 3) all adaptive management approaches have been exhausted.

When range health returns to acceptable levels, suspended AUMs shall be returned to active use by the next grazing season.

In the event that grazing is temporarily suspended due to fire or drought, grazing shall recommence on the basis of case-by-case monitoring and site-specific rangeland health determinations, as opposed to fixed and/or predetermined timelines.

Where range health standards are being met, or if failure to meet rangeland health standards is not due to current livestock management, stocking rates shall not be diminished and season of use will not be curtailed.

Range health on allotments shall be managed on a case-by-case basis, based on current and ongoing data collection. Agencies shall take an interdisciplinary approach to range management, including soliciting input from Oregon State University Extension Service, the Eastern Oregon Agriculture Research Center, permittees and leasees and Baker County in determining best approaches to maintaining sustainable use of rangeland resources.

In light of amendments to NEPA included in the National Defense Authorization Act for FY 2015, §3023(3), Baker County expects that:

> Categorical exclusions shall be used in the renewal of grazing permits where current management is continued and rangeland health standards are being met (or failure to meet rangeland health standards is not due to existing livestock grazing).
>
> Livestock trailing and crossing on public lands shall be categorical excluded from environmental assessments and environmental impact statements under NEPA.[10]

Federal permit renewals (such as grazing permits) or authorization of federal permits for the development or improvement of water rights on federal land shall not be contingent upon the transfer of privately-held water rights, in whole or in part, to the US Government.

Federal agencies shall work with permittees and other land managers on riparian management,

[10] See also: "Whenever any grazing district is established pursuant to this subchapter, the Secretary shall grant to owners of land adjacent to such district, upon application of any such owner, such rights-of-way over the lands included in such district for stock-driving purposes as may be necessary for the convenient access by any such owner to marketing facilities or to lands not within such district owned by such person or upon which such person has stock-grazing rights." 43 USC §315 (TGA)

to ensure that monitoring data are current, and potential issues regarding stream bank erosion, channel depth, etc. are addressed early through adaptive management approaches. Reduction or elimination of grazing on riparian areas shall occur only; 1) if current livestock grazing methods, as opposed to historic livestock grazing or wildlife, are demonstrably the cause of riparian degradation, and 2) if adaptive management approaches are exhausted.

Grazing on designated Wilderness areas shall be ongoing and unimpeded, in accordance with the Congressional Grazing Guidelines set forth in H.R. 101-405, Appendix A.

The Baker Grazing District, a sub-district of the Vale BLM District, comprise the majority of BLM-managed grazing land within the County. It is Baker County's policy that grazing districts within the County shall remain intact, as defined by their historic boundaries. In accordance with the Taylor Grazing Act, grazing shall continue to be a primary use on all lands specially designated for grazing (i.e. grazing district lands).

Federal and State agencies shall not encourage the relinquishment of, nor allow the retirement of, grazing permits on designated grazing lands (i.e. grazing districts) for uses that exclude substantive livestock grazing. Voluntarily relinquished permits shall be made available to other livestock operators to address the economic needs of Baker County citizens and to support the County's tax base.

The benefits of managed livestock grazing for fire control, weed control, and wildlife habitat enhancement shall be recognized and incorporated into planning and NEPA documents.

Energy

Energy Source Development

It is the intent of the Baker County Natural Resources Plan to direct the development of alternative energy sources. These policies are believed to be realistic and achievable in current circumstances but adaptable to meet changing circumstances and local public attitudes to environmental issues. The Baker County Natural Resources Plan will thus provide policies which are transparent to the community and federal land managers.

Energy Source Development Policies

It is the policy of Baker County that there will be no development of any energy sources that do not directly benefit residents of the County. Further, proposed energy developments require an appropriate County and public review process; noticing, appeal periods, and a good faith effort to incorporate the suggestions and concerns put forth by the public. Proposed energy developments shall also be discussed in coordination with Baker County, and shall be consistent with the Baker County Natural Resources Plan to the maximum extent practicable and allowable by law.

Except for geothermal development, there will be no development of any alternative energy sources on forestland. This is due to the site disturbance and road building for most types of energy projects.

Forest Resources

The beneficial use of forest natural resources has always been a large part of the County's economy, custom, and culture. The County's forest resources must be governed in the best interest of local citizens while promoting the health of the forests. Approximately two-thirds of the acres of forestland in Baker County are held in public trust under the authority of the US Forest Service, Bureau of Land Management and State of Oregon. Federal and State planning decisions have the potential to transfer a disproportionate amount of fiscal and social costs and responsibilities to the County. In order for the County to provide and maintain roads, schools and other services, the forest industry and the forest products commerce within the county must be encouraged and strengthened.

Forest Management Policies

Sound, peer reviewed science and common sense support the premise of active forest management on the public forested lands in Baker County. Forest management practices on public land within Baker County shall include a stable timber-harvesting program, which is essential to maintain healthy forest ecosystems and to provide employment and economic security to individuals and businesses in Baker County.

Forest management shall follow the mandates of the 1897 Organic Act and adhere to the Multiple-Use/Sustained Yield Act of 1960 as well as the later acts: National Forest Management Act; National Environmental Policy Act; and the Endangered Species Act. The Baker County portions of the National Forest and State Forest systems, as well as any forestland managed by the BLM within the County shall be managed and administered for outdoor recreation, livestock grazing, timber harvesting, watershed protection, public access and wildlife in the best interests of Baker County citizens and the American people generally. These resources shall be managed for sustained multiple use in perpetuity so that future generations will have the opportunity to benefit from, use and enjoy them.

Forest management on National Forest, BLM, and State lands within Baker County shall foster a permanent roads system and trails open to the public. It is Baker County's policy that roads on State and National Forests and on forests managed by the BLM shall remain open to provide for the economic benefit, enjoyment, and safety of the public. Where State and Federal agencies propose to close roads on forestlands, specific justification for the proposal shall be given on a case-by-case basis, and the proposal shall be discussed in coordination with the Baker County Board of Commissioners.

Baker County's road policy as it pertains to the Forest Service is consistent with the Multiple Use Sustained Yield Act, which states:

> The Congress hereby finds and declares that the construction and maintenance of an adequate system of roads and trails within and near the national forests and other lands administered by the Forest Service is essential if increasing demands for timber, recreation, and other uses of such lands are to be met; that the existence of such a system would have the effect, among other things, of increasing the value of timber and other resources tributary to such roads; and that such a system is essential to enable the Secretary of Agriculture (hereinafter called the Secretary) to provide for intensive use, protection, development, and management of these lands under principles of multiple use and sustained yield of products and services.

16 USC §532

A forest management policy of no action or arms-length management is unacceptable, irresponsible, and potentially disastrous. Baker County policy supports a coordinated, hands-on, proactive approach to forest management that uses timber harvesting as a tool to accomplish overall forest health and to ensure a healthy and vibrant forest for current and future generations.

It is critical that an active management approach to forests within Baker County be applied immediately and continuously for the health, safety, and welfare of Baker County residents. Over-mature, overstocked and stagnant conifer forests cover much of the public land in the County. These stressed trees are subject to insects, disease and fire. Varying tree stands may have a different rotation age, stocking density, species diversity, access availability, or environmental and economic viability. However, all public lands provide products that may be suitable for harvest, and should therefore be considered for logging and thinning projects.

Timber harvesting shall be used to promote forest health, reduce disease and insect infestation, and prevent waste of forest products while supporting the economic stability of Baker County.

It is the policy of Baker County to seek to ensure early detection and management of forest fires, and to maximize fire control potential through full coordination and communication between state and federal agencies and local firefighting associations.

It is the policy of Baker County that during fire season, wildfires shall not be left unattended, that all wildfires be contained and attended until the threat of the fire is reasonably diminished and that a local, adequately trained, firefighting association member shall be present to represent the county's best interest.

It is a policy of Baker County to support the use of managed livestock grazing and prescribed burns as fire control tools.

On public lands, all tree mortality caused by forest fire and pests shall be harvested before additional loss of economic value occurs, in coordination with the Baker County Board of Commissioners.

It is the policy of Baker County to promote the prompt reseeding and rehabilitation of harvested areas and areas affected by wildfire.

It is the policy of Baker County that the customary permitted extraction of forest products by private citizens for fuel, building materials, and Christmas trees shall be ongoing. Access to these sites shall be through an open roads and cross county travel system.

Baker County supports the timber industry, and this industry's ability to provide economic support to the citizens of Baker County.

Baker County supports and encourages active and economic viable timber industries. Therefore, until the timber industries can supply the needed revenue to support Baker County services, the Baker County Commissioners support federal payments in lieu of taxes (PILT) to Baker County, comparable to property tax payments from private forest property owners in Baker County.

Invasive Species

Invasive Species include noxious weeds and other pests. Weeds and pests negatively affect existing plant and animal communities by competing for limited resources such as water, soil, space and nutrients. It is the policy of Baker County to try to limit the introduction of invasive species into the county that can adversely affect the area, both economically and environmentally. To that end, it is imperative that federal agencies coordinate invasive species control efforts directly with Baker County Weed Department.

Noxious Weeds Policies

Invasive noxious weeds species include terrestrial and aquatic weeds not native to this area. Often they are unintentionally introduced by vehicles, boats, people, animals and wildlife. Public land managers at the federal, state and county level shall work in close coordination with private land owners to ensure effective weed control in Baker County.

Noxious weed populations on public lands shall be promptly treated to prevent their spreading, in coordination with the Baker County Weed Department. There is a noxious weed list in Baker County, and designated by four sub-headings:

"Watch List" – High Priority Noxious Weeds; very few known sites; controlled and monitored by the County Weed Supervisor
"A" Designated Weeds – Mandatory Control County-wide
"B" Designated Weeds – Widespread and/or of High Concern
"C" Designated Weeds – Widespread and/or of Moderate Concern

It is the policy of Baker County to be active in education of the public on the proper use of various treatment methods invasive species.

Pests and Other Invasives Policies

Insect and other pest control on federal and state lands in Baker County shall be conducted in order to reduce the risk of transmission of diseases and pests. Examples include treatment for mosquitoes as a vector for the West Nile Virus, the treatment of grasshoppers responsible for the defoliation of forages and the utilization and/or reduction of mistletoe – infected timber stands to address extensive wildfire fuel loads.

Early detection, rapid response and follow-up monitoring of invasives have proven to be very effective to control noxious weeds, insects and pest infestations. It is essential to address these invaders to allow the public health, welfare and economy of the citizens of Baker County to

flourish. Discovery of noxious weed plants and/or insect infestations on public lands shall be reported to the Baker County Board of Commissioners to ensure coordinated control. Utilizing the knowledge and resources of the local Oregon State University Extension Service in coordination with Baker County will also help to limit the impact these threats represent to the health and welfare of people, livestock and wildlife in our area.

Oregon Department of Fish and Wildlife, in conjunction with the Oregon Marine Board, are responsible for control and eradication of invasive aquatic species. They maintain vessel inspections at ports of entry, and when needed, at inland rest stops. Baker County urges all boat owners to be vigilant about the possibility of transporting invasive aquatic species, in particular two species of mussels, when recreating out of state.

Mining

Baker County is one of the most mineralized counties in Oregon. Locatable mineral production has provided an important contribution to the economy of Baker County and the State of Oregon. The mining industry makes up an important part of the property tax base of Baker County and the payrolls and expenditures for equipment, materials and supplies are important to the economic stability of the county.

Mining is one of the historical uses of public land with Baker County and mining predates the establishment of the Forest Service and the Bureau of Land Management. Maintenance of such use is statutorily compatible with multiple use principles.

Federal management agencies shall comply with laws, beginning with the Congressional Act of July 26, 1866 and the General Mining Law of 1872, which granted all American Citizens the right to go into the public domain to prospect for, and develop, locatable minerals resources. Every mining law or act enacted since then has contained a "savings clause" that guarantees that the originally granted rights have never been rescinded.

Mining Policies

It is the policy of Baker County that all exploration, development and mining on lands in the county with locatable mineral potential, shall be governed by scrupulous adherence to all laws which pertain to mining and production by the state and federal agencies.

Federal management agencies shall facilitate the orderly exploration, development and production of minerals resources within all federal lands in Baker County open to these activities, consistent with valid existing rights and in accordance with the National Mineral Policy Act of 1970 and the Organic Act. Federal management must recognize the adverse economic effects to Baker County's economy when federal agencies unnecessarily restrict or eliminate mining.

Federal lands historically open for mineral access in Baker County shall remain open and all proposed road closures shall be coordinated with Baker County.

The economic importance of exploration, development and production of locatable mineral resources shall be incorporated into all federal management agencies land and resource management plans.

It is the policy of Baker County that federal management agencies must address the need for maintaining mineral related access during the planning process for all activities in mineralized areas.

The analysis of Plans of Operation by federal management agencies for locatable minerals projects shall take precedence over, or take place simultaneously with, analysis of non-discretionary proposals.

The approval of locatable minerals Plans of Operation by federal land management agencies must occur within one year from the submittal of a complete Plan. Baker County and the mine operator shall be notified if this timeframe cannot be met, the reasons for the delay and what it will take to get the Plan finalized.

It is the policy of Baker County that mineral development and production are not subject to unreasonable stipulations, Best Management Practices, mitigation measures or reclamation bonds.

Federal land management agencies must not restrict or in any way interfere with legitimate water rights. All mining water use is subject to the statutes and administrative rules of the Oregon Water Resources Department and it is the duty of the Watermaster, not the federal agencies, to assure legal and appropriate use of the waters.

Recommendations by federal management agencies for withdrawals of federal land from mineral exploration and development shall only occur in coordination with Baker County.

Prior to initiating the administrative withdrawal of public lands from mineral entry, the agency shall carefully take into account and document for the record; 1) the impacts to rural communities affected by the withdrawal; 2) the economic value of the mineral resources foregone; 3) the economic value of the resources being protected, and; 4) an evaluation of the risk that the renewable resources within the minerals surface use regulations.

Recreation & Tourism

Baker County's landscape is a recreational haven for residents and visitors alike. Amenities such as a bounty of wildlife and breath-taking scenery, a pioneer history imbedded in the social backdrop of the county as deep as the ruts of the old Oregon Trail, and year-round outdoor recreational possibilities, makes recreation an essential part in the lives of the residents. Recreation, both motorized and non-motorized, is a critical economic drawing point for Baker County. It attracts visitors who come to view wildlife, fish, hunt, ski, snowmobile, hike, camp and generally enjoy the opportunities that an open access motorized forest and range system provides.

Historically, recreation has been an essential part in the social framework of the County. Families who live in Baker County have the right to enjoy its resources that surround our home communities. One of the longest standing traditions for residents and visitors alike is having open motorized and non-motorized access to our recreational resources including open forests.

The management of federal lands for multiple use will positively impact recreational values, and the use of, and access to, public lands encourages economic development that sustains businesses and provides jobs.

Recreation and Tourism Policies

Baker County's policy supports a multiple use management approach on public lands as a means of continuing and enhancing recreation opportunities within the County.

Baker County shall not support unreasonable or unsupportive land use fees and/or fee increases, or the creation of new and/or unnecessary fees for the use of public lands within the County. Any entity considering fee increases with the potential to impact recreation in the County must coordinate with the Baker County Board of Commissioners on the decision.

It is the policy of Baker County that roads providing access for the use and enjoyment of public lands shall remain open and be maintained as needed. Proposed road closures affecting access on public lands in Baker County shall be discussed on a case-by-case basis, and shall be individually justified. Where there is no clear and overriding reason to close a particular road, it shall remain open. Further, proposed road closures require an appropriate County and public review process; noticing, appeal periods, and a genuine good faith effort to incorporate the suggestions and concerns put forth by the public. Proposed road closures shall also be discussed in coordination with the Baker County and shall be consistent with the Baker County Natural Resources Plan to the maximum extent practicable and allowable by law.

Baker County supports the accessibility, improvement, maintenance and development of motorized and non-motorized trails to facilitate recreation and access to natural resources for residents and visitors. This policy reflects the no net loss of our open roads system.

Baker County supports developing and maintaining adequate means of access to public lands for those with limited mobility and compliance with the American Disabilities Act.

Baker County supports the promotion of tourism through signage that explains historical significance of areas, sites and roads.

It is Baker County's policy to continue the open road systems for off-road (cross country) access for snowmobiling, game retrieval, visitations of cultural sites, other recreational or tourism interests and other lawful uses.

Because there is significant economic loss to communities and the county due to the extreme fluctuations of Brownlee Reservoir, Baker County encourages federal agencies and other stakeholders in the Brownlee Reservoir to value the healthy, warm water fishery by maintaining stable water levels to meet the needs of recreationists. This includes allowing accessibility to launch boats at a minimum elevation of 2044 feet.

Special Designations

Federal agencies, Congress, and the President of the United States are variously authorized to create special designations on the public lands that have the potential to restrict customary use, limit economic opportunity, and erode the multiple use character of lands within Baker County. Such designations include, but are not limited to: Areas of Critical Environmental Concern (ACECs), Wild and Scenic Rivers, National Monuments, Wilderness and Wilderness Study Areas (WSAs), and National Conservation Areas (NCAs).

Special Designations remove the ability of the County to tax natural resource based businesses thereby reducing the tax base for local government needs.

Special Designation Policies

Wilderness and Wilderness Study Areas

It is Baker County's Policy that no Special Designation be introduced in Baker County unless it is firmly endorsed by the local community, and the proposal has been fully coordinated with the Board to ensure maximal consistency with the Baker County Natural Resources Plan. Should such designations be created, their planning and management shall also be coordinated with Baker County to the maximum extent allowable by law.

Federal agencies responsible for making wilderness recommendations to Congress shall coordinate with Baker County in making wilderness determinations and developing wilderness inventories. It is Baker County's position that no additional lands are suitable for Wilderness designation within the County. Baker County therefore opposes any further Wilderness designations.

Grazing on designated Wilderness areas shall not be encumbered with unreasonable requirements, in accordance with the Congressional Grazing Guidelines (H.R. 101-405, Appendix A).

Land determined to have "wilderness characteristics" will not necessarily be managed to preserve wilderness characteristics, as other resources may prove more valuable. Management of lands with wilderness characteristics shall be coordinated with Baker County.

Baker County supports the expedient processing of Wilderness Study Areas by Congress to a decision within 2-years from when the designation is first proposed. Baker County supports a prompt return of Wilderness Study Areas not designated by Congress as wilderness into multiple-use status.

Wild and Scenic Rivers

Baker County opposes any further designations of Wild and Scenic Rivers within the County. Any proposed designation of a Wild and Scenic River within the geographic boundaries of Baker County shall be coordinated with Baker County.

Any existing or established Wild and Scenic River occurring within Baker County shall be managed by the designating federal agency in coordination with Baker County.

National Monuments

Baker County oppose the use of the Antiquities Act for designation of National Monuments.

Baker County opposes the designation of any National Monument within its borders unless the proposal is coordinated with the County and is strongly supported by the local community.

It is the policy of Baker County to support the multiple-use character of public lands for the economic welfare and enjoyment of Baker County citizens and visitors. Baker County therefore opposes the restriction or elimination of customary uses on proposed or existing national monuments.

Areas of Critical Environmental Concerns (ACEC)

The proposal of any ACEC on land managed by the BLM shall be fully coordinated with Baker County in accordance with FLPMA. Proposals for ACEC designations shall strictly adhere to the relevance and importance criteria, and the BLM must demonstrate the need for an ACEC designation to protect the area in question and prevent irreparable damage to resources or natural systems. A proposed ACEC designation must be consistent with the BCNRP, provided that such consistency is not in conflict with federal law. 43 U.S.C § 1712(c)(9). Further, it shall be recognized that ACECs are administrative designations, and as such, are only valid for the term of a resource planning document. An ACEC designation may be revisited through subsequent land use planning, revision, or amendment.

Other Areas of Concern

Baker County opposes any other Special Designations including those in the Congressional Designated National Landscape Conservation System as of September 2002. These include, but are not limited to, National Conservation Areas, National Research Areas, National Recreation Areas, Outstanding Forest Areas, Outstanding Natural Areas, Cooperative Management and Protection Areas, Headwaters Forest Reserves, National Historic Trails and National Scenic Trails.

Threatened & Endangered Species

The federal designation of a species as threatened or endangered can have a profound negative impact on the economy, safety, and welfare of Baker County residents. In view of this, Baker County will pay particular attention to any species designated in any category or classification for protection or consideration of protection under the Endangered Species Act and will act to require the agencies to comply with full procedural provisions of federal statutes.

Threatened and Endangered Species Policies

The listing of any species shall be based on current, quantifiable monitoring data and peer reviewed studies and determinations that meet the standards of the Data Quality Act.[11]

Consideration of any species for federal listing shall take into careful account all state, regional, and local conservation efforts.

All recovery planning efforts for sensitive, threatened, or endangered species shall be made in coordination with Baker County, and shall take into account the custom and culture of Baker County while minimizing and mitigating any economic impacts to the County's economy. All recovery planning shall be consistent with the BCNRP wherever practicable.

In accordance with statute, federal agencies shall coordinate with Baker County in the use of water resources as they pertain to the conservation of endangered species:

> It is further declared to be the policy of Congress that Federal agencies shall cooperate with State and local agencies to resolve water resource issues in concert with conservation of endangered species.

16 USC 1531 (c)(2)

In the event that a species within Baker County is listed under the Endangered Species Act, Baker County requires the Recovery Plan to include:

a. a site specific management plan for any proposed conservation plan of an ESA listed species;

b. assurances that the listed species are native to Baker County;

[11] Sec. 515 of Public L. No. 106-554.

c. efforts to make sure that critical habitat designation not be in substantial conflict with customary use of natural resources or negatively impact the economy;

d. establishment of on-the-ground baseline data and population goals for the species;

e. clear identification of target populations that will qualify the species for delisting, and prompt delisting when such targets are reached.

In the event that a listing under the ESA and/or critical habitat designation has an economic impact on Baker County, the County expects the U.S. Fish and Wildlife Service to coordinate with the County to develop viable mitigation measures. Further, Baker County endorses the establishment of a federal funded/managed compensation program for property owners who suffer losses as a result of an ESA listed species.

Water and Water Rights

Water Rights

Agricultural, mining, industrial and domestic water rights in Baker County date back to the early 1860's. The dates on priorities (filing dates) trace the history of mining and settlement of farms in Baker County.

All water in Oregon is publicly owned.

Oregon water code is based on two legal principles that include appurtenancy to the land, and first-in-time, first-in-right. (Prior appropriation doctrine)

1. Appurtenancy – the legal right to use the water affixed to the parcel of land upon which the water right was filed and is to be used. The right is a part of the land value. Its use may be transferred to another parcel, subject to some restrictions such as diversion points and non-injury to other users.
2. "First-in-time, first-in-right" – the legal, adjudication system of determining which right may use water when flow volumes are restricted. The oldest date (senior) has the highest priority. Newer, younger rights are considered junior and are subject to having their use restricted when flow volumes decrease to a level where all rights cannot be satisfied.

Water Quantity:

All water use is subject to the statutes and administrative rules of the Oregon Water Resources Department (OWRD) with few exceptions. A network of 21 watermasters are charged with assuring legal and appropriate use of the waters throughout the state. The original court decrees established quantity and use through claims of landowners and water users. Now, the OWRD determines water quantity on new water rights filings based on availability of water, injury analysis and existing law.

There are three primary sources of irrigation water in Baker County:

1. Surface water which is free running and un-impounded from rivers, creeks and springs flowing from the mountains;
2. Stored water which is impounded, or reservoirs, which collect water during a legally defined time, and later distributed to lands holding water rights or permits for the stored water.
3. Groundwater pumped from the underlying aquifer(s).

It is the policy of Baker County to encourage the development of both surface storage impoundments and groundwater storage and recharge projects.

Water quality:

Water quality for agriculture is primarily under the jurisdiction of the Oregon Department of Agriculture (ODA) through the Water Quality program in the Natural Resources Department. They are charged with Oregon's regulation and enforcement of the agricultural portion of the Federal Clean Water Act. (CWA). The Powder/Brownlee Agricultural Water Quality Plan and the Burnt River Agricultural Water Quality Plan address water pollution from agriculture in Baker County.

Other point source and non-source point pollution contributors are controlled by the Oregon Department of Environmental Quality (DEQ).

Wetlands

Wetlands are generally considered to be areas that are undrained or poorly drained, below field gradient (catch basin), bogs or trapped stream meanders. They are an important filtration element on the landscape as catch basins for sedimentation, as well as wildlife, songbird and waterfowl and other bird habitat and shelter.

Wetland jurisdiction is controlled by the USDA-Farm Service Agency (FSA) and the Natural Resource Conservation Service (NRCS) in land determinations for FSA, as well as the Division of State Lands, Army Corps of Engineers and the Clean Water Act. At the present time, wetlands are not considered to be navigable waters of the state, unless they drain into a stream or ditch. However, implementation of the new EPA Waters of the United States rule (WOTUS) may have a negative impact on these determinations.

Public pressure on water:

Competing interests including fish, hydroelectric production, instream water rights, threatened and endangered species (T&E) protection and housing development expansion into agricultural areas and increasing demands from cities for municipal uses are putting pressure on the available supply of water.

The focus on fish habitat is perhaps one of the biggest pressures on water quantity. This focus is restricting the placement and construction of new storage containments, and other innovative irrigation water developments.

It is Baker County policy that in streams where there is no documented T&E population, aggressive unreasonable protection measures for critical habitat by state and federal agencies will be discouraged. In-stream water rights designed to maintain water for fish, may at times restrict the availability of more junior rights to obtain irrigation water. Conservation Easements can affect not only land use, but also water use. Impacts of Conservation Easements to Baker County include water quantity for agricultural irrigation due to transferring of water rights to an in-stream status and use.

It is Baker County policy that in-stream transfers will be discouraged through conserved water transfers, instream leases and/or purchases if the upstream users are negatively impacted from the historic beneficial use.

Other state and federal water initiatives are either already implemented or are on the horizon. The county needs to be watchful of developments in these areas, and be prepared to make comments at the appropriate times:

1. Waters of the United States. (WOTUS) (EPA rule in conjunction with Army Corp of Engineers.) Although the future of the rule is uncertain due to numerous court challenges, if enacted, it may have negative impacts on future irrigation developments in Baker County because of the new interpretation of waters-of-the state.
2. Columbia River Treaty. The original treaty with Canada addressed two issues – flood control and hydro-power development. Now, a third focus of environmental concern to benefit fish, is adding a shared focus to the sustained flows measurement at The Dalles Dam. The dispute between the inequalities of water withdrawal for Washington vs. Oregon continues to be a strong discussion point. The Treaty has jurisdiction over all tributaries of the Columbia River. Treaty renewal discussion began in 2014, and will terminate in 2024.
3. Oregon Department of Agriculture Reservation of Water permits. These water rights for new water storages are in the process for a 20 year permit extension. There are potentially 6 storage sites identified in Baker County for these reservation permits. The Baker Soil and Water Conservation Districts will work cooperatively with ODA as the process moves through the system. If public funds are used for construction of a storage project from the Water Supply Development Program (SB 839), 25% of the new reserved water must go for in-stream flows for fish. Other funding sources may not require 25% of the stored water.
4. Oregon Integrated Water Resources Strategy (IWRS) is a state water policy that was adopted by the Water Resources Commission in 2012. The IWRS is a collaborative effort that encourages participation from all water users. The idea is to manage

supplies and increase utilization of existing supply. This includes development of storage or recharge projects for all uses including irrigation and habitat enhancement.

The Clean Water Act

The Clean Water Act (CWA) is the primary federal law in the United States governing water pollution. As with many other major U.S. federal environmental statutes, it is administered by the U.S. Environmental Protection Agency (EPA), in coordination with state governments. Its implementing regulations are codified at 40 C.F.R. Subchapters D, N and O (Parts 100-140, 401-471, and 501-503).

Water Resource Policies Pertaining to Federal Agencies

Many of Baker County's water resources originate, or are otherwise located on, federal lands. Baker County establishes the following policies:

Federal agencies shall acknowledge and respect that groundwater resources in Baker County are managed by the State of Oregon, which is responsible for managing groundwater quality and distribution within the County. Further, the State has exclusive jurisdiction over surface water distribution.

> **Authority of States over water**
> It is the policy of Congress that the authority of each State to allocate quantities of water within its jurisdiction shall not be superseded, abrogated or otherwise impaired by this chapter. It is the further policy of Congress that nothing in this chapter shall be construed to supersede or abrogate rights to quantities of water which have been established by any State. **Federal agencies shall co-operate with State and local agencies to develop comprehensive solutions to prevent, reduce and eliminate pollution in concert with programs for managing water resources.**

33 U.S.C. 1251(g) (Clean Water Act)

Federal permit renewals (such as grazing permits) or authorization of federal permits for the development or improvement of water rights on federal land shall not be contingent upon the transfer of privately-held water rights, in whole or in part, to the US Government.

Federal agencies shall work in partnership with permittees and other land managers on riparian management to ensure that monitoring data are current, and potential issues regarding stream bank erosion, channel depth, etc. are addressed early through adaptive management approaches. Reduction or elimination of grazing on riparian areas shall occur only; 1) if current livestock grazing methods, as opposed to historic livestock grazing or wildlife, are demonstrably

the cause of riparian degradation, and; 2) if adaptive management approaches prove unsuccessful.

It is the policy of Baker County to support the improvement of delivery systems, including, but not limited to, livestock watering facilities, diversion structures and pipelines, which originate on and/or traverse federally managed land, including those waters originating in wilderness or other special use areas. Baker County will assert coordination on site specific projects that have been approved and that adhere to water and land use laws.

Baker County will support water users in protecting their water rights, if the water users are managing their rights according to state laws, including restrictions governing that use. This includes water rights to surface water that originates on federal land including wilderness and other special use areas, ground water including agricultural and domestic and industrial wells and other sources such as springs and seeps.

The water level and associated dynamics of the Brownlee Reservoir are an integral part of the economic success of Baker County. The water level can vary significantly based on several factors, including the amount of water coming in from upstream, water being used for power generation, summer drawdown for the fall Chinook flow program and most dramatically, spring drawdown for flood control. It is Baker County's policy to promote a more stable system that facilitates the need of spawning warm water fish through coordination with federal agencies responsible for the drawdown mandates.

Watersheds

A watershed is the area of land where all of the water that is under it or drains off of it goes into the same place. Watersheds come in all shapes and sizes. They cross county, state, and national boundaries.

Watersheds are the over-arching, all-encompassing lands to which all natural resources belong. Healthy watersheds contain forests that are in good health, have minimal weed infestations, functioning riparian areas, rangelands with a variety of vegetation and valleys that support farming and urban developments. These watersheds provide recreation opportunities for residents and visitors, serve cultural needs, and provide habitat for native plants, wildlife, and fisheries. The health of the County's watersheds directly affects the current and future availability and quality of the water resources and water-dependent natural resources in the County, and the ability of watersheds to adapt to climate variability (i.e., periods of drought, periods of high rainfall, rain-on-snow events).

The County's watersheds are diverse and dynamic. They consist of forestlands, shrublands and grasslands, mountains, canyons and valleys, uplands, floodplains, wetlands, channels, streams, springs, lakes, reservoirs, and groundwater. They continue to evolve under the influence of climate, plants, animals, geology, floods, landslides, faults, uplift, volcanoes, erosion and sedimentation, and human land use. A successful management strategy for the County's watersheds must consider how the various watershed components and uses interrelate and influence each other from ridgeline to stream and across adjacent watersheds.

Baker County lies primarily within the Snake River basin. The County is contained primarily within the Brownlee Reservoir, Burnt River, and Powder River HUC 4[12] watersheds with portions within the Imnaha River, Upper Grande Ronde River, Upper Malheur River, and Willow Creek HUC 4 watersheds.

Watershed Policies

It is the County's policy to encourage wise management and use of the County's surface and groundwater resources to sustain economic development and to maintain and improve stream, floodplain, wetland, and groundwater functions. Also to encourage, and allow, consumptive water right owners to improve water quality and water-use efficiency to provide additional water for economic development and, where possible, to enhance instream flow, during low water flow periods.

[12] USGS Hydrological Unit Code for watersheds.

It is Baker County's policy to encourage good management of watersheds, including stream channels, floodplains, wetlands and uplands to retain and slowly release water for desired plant, animal and human uses, and to reduce the risk of flash floods.

Baker County shall direct the US Forest Service, Bureau of Land Management, other relevant public agencies to manage the watershed, including the municipal watersheds, to meet the multiple needs of residents and promote healthy forests.

Construction and management of roads, bridges, culverts, cutslopes, fillslopes, and artificial surfaces to minimize water concentration, erosion, and delivery of water and sediment to streams is critical.

Land managers shall properly manage water under, around and above mapped landslides to prevent/minimize new movement, especially where landslides could disrupt public transportation or threaten public safety.

The County supports reclamation activities on mined-land that improve soil productivity and water quality and the function of streams channels, floodplains and wetlands.

Wildfire

Wildfires have the potential for catastrophic effects on Baker County. Historic wildfire events in Baker County have severely damaged the County's watersheds, timber, grazing lands, wildlife habitat, and recreation activities that rely on healthy growing forests and rangelands. In addition, the loss of the resource has directly affected the revenue stream and fiscal stability of the County's residents.

A wildfire is defined as an unplanned, unwanted wildland fire, which includes unauthorized human-caused fire, escaped wildland fires being used as a management tool, escaped prescribed fire projects, and naturally occurring fire not designated as a management tool. Proactive planning for and effective response to wildland fire events is critical to the protection of Baker County citizen's safety, private property, forest, and rangeland health.

Wildfire Policies

A high degree of coordination between federal, state, and local agencies is necessary for maximal prevention and suppression of wildfire. Federal agencies shall incorporate local fire association plans into their fire suppression and control plans. Federal agencies shall enter into coordination (as required by FLPMA and NFMA) with local fire agencies (such as RFPAs) at the local agencies' request.

It is the policy of Baker County that during the fire season, as established by the Oregon Department of Forestry, that wildfires will not be left unattended and that all wildfires be attended until a control line has been established around the fire, and any associated spot fires which can reasonably be expected to stop the fire's spread. While not always possible in the first operational period due to weather conditions and fire behavior, the expectation would be that all fires be further controlled by completing mop-up from the control line, inward, around the perimeter (e.g. 25' – 100' depending on fuel, loading, etc.) as soon as fire behavior allows.

The Forest Service shall adhere to all requirements set forth in the Cooperative Forestry Assistance Act, including:

> (4) the effective cooperative relationships between the Secretary (of Agriculture) and the States regarding fire prevention and control on rural lands and in rural communities should be retained and improved;
> (5) efforts in fire prevention and control in rural areas should be coordinated among Federal, State, and local agencies; and
> (6) in addition to providing assistance to State and local rural fire prevention and control programs, the Secretary should provide prompt and adequate assistance whenever a

> rural fire emergency overwhelms, or threatens to overwhelm, the firefighting capability of the affected State or rural area.

16 USC §2106(a) (parentheses added)

Baker County supports the Department of Interior's Secretarial Order 3336—*Rangeland Fire Prevention, Management, and Restoration*. Baker County expects the BLM to comply with SO 3336 and all subsequent reports and guidance.

Coordination between the BLM, Baker County, local fire associations, and local stakeholders shall be informed by the BLM policy document *Earning Bridges: Strategies for Effective Community Relations Before, During, and After the Fire*.

In the event that grazing on public lands is temporarily suspended due to fire, grazing shall recommence on the basis of case-by-case monitoring and site-specific rangeland health determinations, as opposed to fixed timelines.

Baker County policy supports the use of managed livestock grazing and prescribed burns as fire prevention tools.

Baker County supports and encourages temporary fire restrictions based on professional fire hazard designations to minimize the potential for human caused wildfires. Such restrictions shall be removed as soon as the fire potential allows for safe work and recreation on public lands.

Wildfire damage on range land shall be rehabilitated as soon as possible to facilitate habitat for wildlife, reduce the potential for erosion and the introduction of invasive weeds and grasses and to benefit other authorized uses.

Wildlife

Wildlife Policies

It is Baker County's policy to coordinate with the Oregon Department of Fish and Wildlife (ODFW) to utilize management plans for all managed wildlife, in cooperation with local stakeholders. Such management plans shall maintain adequate hunting and fishing opportunities and encourage the maintenance and improvement of wildlife habitat. Further, Baker County will seek to encourage the development of public/private partnerships to improve hunting, fishing, and viewing opportunities, and to encourage the development of peer-reviewed studies documenting the relationship between humans, predators, and other wildlife species.

It is Baker County's policy to ensure mitigation of damage caused by wildlife on private ground. To advance this policy, Baker County encourages the stewardship of habitat on public lands. Further, Baker County supports emergency hunts to control wildlife populations, and winter feeding programs as a means of mitigating damage to private property. Where private property is destroyed, damaged, or depleted as a result of wildlife impacts, Baker County policy supports just compensation to private property owners.

State (and where applicable, federal) agencies shall develop comprehensive management plans in coordination with Baker County for predatory species. Such plans shall include a determination of appropriate predator numbers in light of desired game populations.

Predator control is supported and encouraged by Baker County.

State (and where applicable, federal) agencies shall employ all currently recognized methods of predator control—including aerial gunning, traps, hounds, additional tags—as options for predator control on state and federal lands within the County.

State (and where applicable, federal) agencies shall rely on the USDA APHIS Wildlife Services to provide expertise and conduct predator control on public lands, determine livestock losses, and to determine methodology for animal damage management.

Federal and state agencies shall consider the impacts of wildlife to rangelands when making rangeland health assessments and when conducting monitoring on grazing allotments.

Baker County supports the coordinated management and conservation of game species in the County within a framework that protects property rights and the State's management authority over wildlife resources.

It is the policy of Baker County that land not be removed from existing authorized use for the purpose of establishing wildlife corridors.

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Dept of Environmental Quality
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Attn: Alex Liverman

Re: Powder River Basin, Total Maximum Daily Load Rulemaking

Mr. Liverman,

This letter is submitted in response to the Public Hearing regarding the Powder River Basin TMDL on August 15, 2023.

1. We request a time extension beyond the stated deadline of August 31, 2023, for comments to be submitted. The current deadline is not adequate for a thorough review of the information related to the rulemaking process, information that the vast majority of our members were not aware of until the Public Meeting.
2. We request that the study conclusion be put on hold for a period of five years while a more detailed and objective study is done, including DNA analysis of e. Coli bacteria. Perhaps there are other sampling/testing methods that could be considered but to simply draw the conclusion that significant levels of bacteria in Powder River come from cattle is too big a stretch of logic based on information provided to date.
3. We request that a local committee be formed to work in conjunction with you to develop a plan for sampling and testing of the Powder River over the next five years. Baker County Livestock Association will commit to participating in this committee and there are other, local, organizations and agencies that should be included. Examples include Baker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW).

The details of our concerns regarding the information provided are too lengthy to detail in this request/feedback letter. We need to have a face-to-face meeting with your staff (with much more time allotted than for the Public Hearing) to discuss our concerns and development of a mutually agreeable plan of action. There were numerous questions and points made at the Public Meeting that were not adequately answered by your staff. Agriculture is the leading economic factor of Baker County's economy. It is the livelihood for families who have farmed and ranched in this area for generations. We ae asking that you work with us, not against us.

Sincerely

Executive Committee of the Baker County Livestock Association

Travis Bloomer, President Bryce Svedin, Vice-President Martin Arritola, Treasurer

DocuSigned by:
TRAVIS BLOOMER
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DocuSigned by:
Martin Arritola
11EB6A62E55C43B...

Liner leaking at Baker City's new wastewater lagoon

- By JAYSON JACOBY Baker City Herald

- Aug 24, 2023 Updated 19 hrs ago

A liner was installed in the fall of 2021 at Baker City's new wastewater storage lagoon east of the Baker City Airport and south of Highway 203.

Baker City officials are dealing with two problems with the city's wastewater disposal system, one involving the $5.7 million project, completed in 2021, to build a new pipeline and storage lagoon.

Joyce Bornstedt, the city's public works director, told city councilors during their work session Tuesday, Aug. 22 that "it's just not a very pleasant situation."

Leaking liner

The liner in the new storage lagoon, at the eastern edge of Baker Valley just south of Highway 203, is leaking, Bornstedt told councilors Tuesday.

She said city workers started seeing bubbles in the pond last spring while it was being filled for the first time.

The liner was installed in the fall of 2021.

The problem has worsened, and for the past several months city officials have been working with the project's contractor, Gyllenberg Construction of Baker City, to drain the pond so the liner can be repaired, Bornstedt said.

Mayor Beverly Calder said city officials have been meeting with the contractor as well as officials from the company that made the liner. She said the source of the leaks can't be determined until the lagoon is drained.

Bornstedt told councilors that the contractor is responsible for the costs of the draining, as well as repairs and any fines the city might incur from regulatory agencies.

Brent Gyllenberg of Gyllenberg Construction declined to comment on Thursday, Aug. 24.

The new lagoon, on a 51-acre parcel the city bought in 2019 for $123,000, is much deeper, at about 20 feet, than the four lagoons built in the early 1960s about one mile north of town, and thus has a greater capacity. The older lagoons are 6 to 8 feet deep.

The city began the project, one of the most expensive in the past couple decades, after the Oregon Department of Environmental Quality (DEQ) mandated that the city eventually cease piping treated wastewater into the Powder River.

The DEQ is monitoring work on the lagoon liner, and the agency has not issued any penalties to the city, DEQ spokesman Harry Esteve said in an email reply Thursday, Aug. 24 to questions from the Baker City Herald.

In 2017, the city entered into a Mutual Agreement and Order (MAO) with DEQ that required the city to pursue a modification to the wastewater treatment process.

City officials decided to build the new lagoon, and construct a pipeline connecting the old lagoons to the new pond, which is about 7 miles away.

In November 2020 the City Council agreed to have the city borrow as much as $7.5 million from the state to pay for the wastewater project. The city will repay the loan over 30 years with a 1.36% annual interest rate. Because the contract with Gyllenberg Construction was for about $5.7 million, the city didn't need to borrow the full amount.

Bornstedt told councilors Tuesday that the city might need to borrow more money, however, to deal with another wastewater issue — what to do with the tens of millions of gallons of treated wastewater.

Where to put the wastewater?

Bornstedt said the DEQ denied the city's application to use treated wastewater from the new lagoon to irrigate non-food crops on private property adjacent to the lagoon, a vital part of the city's plan for its wastewater system.

That denial created "quite a quandary" for the city, Bornstedt told councilors Tuesday.

Calder said the DEQ had initially given the city permission to use treated wastewater from the lagoon for irrigation on the property adjacent to the lagoon. She said agency officials earlier this year withdrew that permission, citing issues related to the mineral composition of the soil that made it less than ideal for irrigation with the treated wastewater.

Bornstedt said the city is looking at three other sites for irrigation, but none is adjacent to the lagoon, and each would require the city to build a new pipeline, for an unknown cost.

Calder credited Bornstedt with working quickly to meet with landowners who are interested in using the treated wastewater for irrigation.

"She's doing an amazing job getting other options in play," Calder said.

Esteve, the DEQ spokesman, said the city's initial plan to use wastewater to irrigate crops "did not meet Oregon's recycled water land application requirements for all the selected sites."

Some of those sites have a shallow groundwater table as well as soils that are acidic and that don't readily absorb water.

"Their geography puts groundwater and surface water at risk for contamination if there were to be land application outside what is approved in the revised plan," Esteve said.

In a March 20, 2023, letter to State Sen. Lynn Findley, the Vale Republican who represents Baker County in the Oregon Legislature, Brandon Mahon of Anderson Perry & Associates, the La Grande firm the city hired to help design the new wastewater system, addressed the DEQ's partial denial of the city's plan to irrigate with wastewater from the new lagoon.

Mahon wrote that the DEQ had made "several revisions" to the city's plan, and that the agency prohibited the city from using two center pivot irrigation systems due to "poor soil conditions" on the land.

"The City has been trying to evaluate and discuss compromises with DEQ, but all items that have been suggested have resulted in a firm 'no' from the agency," Mahon wrote. "We need your help."

Mahon wrote that if the city can't use those two pivots, it won't be able to use enough wastewater for irrigation to keep the lagoon's level at acceptable levels "and ultimately make it through the winter" — the period when irrigation isn't needed because no crops are growing.

Record rain exacerbates city's challenge

While the new lagoon is being drained to facilitate an inspection and repairs to the liner, the city has been pumping wastewater from the new lagoon back through the pipeline to the old lagoon. From there the city had been diverting the treated wastewater into the nearby Powder River — the method of disposal the city has used for several decades. Bornstedt told councilors the city is still permitted to pipe the treated wastewater into the river.

However, the concentration of E. coli bacteria in the water recently exceeded the allowed limit, forcing the city to temporarily stop releasing water, Bornstedt said. The same thing happened in March 2022, forcing the city to stop releasing water into the river for about two weeks.

Esteve said the city is permitted to pipe treated wastewater into the river so long as the water doesn't exceed E. coli limits.

The old lagoons are nearing their capacity now, and are about two weeks from reaching that limit, Bornstedt told councilors Tuesday.

The record-breaking rainfall on Monday, Aug. 21 exacerbated the situation, she said, adding about 2 million gallons of wastewater to the system.

"It's a very difficult situation," Bornstedt said.

Calder said she's not sure when the city will be able to resume releasing water from the old lagoons into the river.

Bornstedt told councilors the goal is to drain the new lagoon before winter arrives so the liner can be repaired and wastewater can again be piped from the treatment facility, which is near the old lagoons, to the new lagoon.

Jan Alexander
PO Box 153
Unity, OR 97884-0153

PORTLAND OR 972
29 AUG 2023 PM 1 L

Alex Liverman
Dept of Environmental Quality

AUG 31 2023

Oregon DEQ
700 NE Multnomah St. Suite 600
Portland, OR 97232

97232-410050

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

Re: Powder River Basin, Total Maximum Daily Load Rulemaking-Please extend the deadline for comments

Dear Mr. Liverman,

As a citizen of Baker County, I am very much concerned with the TMDL developed for our County. It is a complicated rule, based on incomplete studies, and the effects of implementation will be adverse on our Baker County farmers and ranchers. The bottom line is, we need more time to address this proposed rule.

I attended the meeting August 15, 2023, where DEQ took testimony on this proposed rule. Over 100 citizens of Baker County turned out for the meeting, and many openly expressed their concern with this rule, which by all appearances, was designed to ruin their lives, and destroy the Baker County agricultural economy.

DEQ personnel had no answers to the many questions raised at that meeting. We heard repeatedly, "*we will get back to you to answer that question*" but that has not happened. This rule needs to be put "*on hold*" so that all pertinent information can be included, scientifically based studies can be analyzed, and conclusions and a path forward made that is based on science. There needs to be open lines of communication moving forward on the development of a rule such as this one. Many members of this community did not even know about this rule until the August 15, 2023 public meeting.

I was amazed DEQ did not consider other sources of coliform other than that associated with cattle. Ranchers testified that their ranches receive run-off from the four elk feeding stations where 400-600 head of elk gather each winter. For DEQ to come to the conclusion that e coli bacteria all comes from cattle, without any evidence that this is true, is wrong.

Instead of stuffing this rule down the throats of hard-working ranchers and farmers, why not work with Baker County citizens? We are all concerned about our County, and naturally we are concerned about the water. Water is the life of this county, and that is why county farmers and ranchers are known for their stewardship of the land. Baker County citizens and organizations are all willing to work with DEQ on a rule that will work for everyone.

Along with my County Commissioners and other citizens, I am requesting a time extension beyond the stated deadline of August 31, 2023, for comments to be submitted.

I appreciate this opportunity to comment, and as I learn more about this rule, I would like the opportunity to provide further comments.

Sincerely,

Jan Alexander
Concerned Baker County Citizen and Small-scale farmer
541-446-3413

OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY

The headline in the August 17th, 2023 edition of the Baker City Herald reads: **"RESIDENTS EXPRESS CONCERN ABOUT STATE WATER QUALITY PLAN:"** I don't think "CONCERN" is a strong enough word as to what seems to be in store for our communities in Eastern Oregon. Stronger words are perhaps "worry, fear, anxiety, uneasiness, uncertainty, apprehension, even iron-handed, etc.," as to what the future holds for our Eastern Oregon residents and our water.

The contention that cattle are the main culprit in the bacteria levels is ludicrous and deserves to be laughed at, especially in light of the fact that no DNA samples were taken. Conclusion: it apparently was only an assumption by the DEQ staff. Any study that will have such an impact on our Eastern Oregon citizens and, most relevantly, our cattle industry, needs more than a couple of studies. I attended the public hearing, where more than 100 people were present, on Tuesday, August 15th, at the OTEC office in Baker City, Oregon, and there certainly was no solid evidence presented at that time that I could see. DEQ has not proved that livestock are largely responsible for bacteria concentrations.

As Curtis Martin stated at the above-referred to public hearing: "You can't take a broad-brush approach to agriculture; we've got to be more specific than that. We're not gonna roll over for this. This is oppressive."

Jim Carnahan, a civil engineer for the US Forest Service, who lives near Baker City, said: "agriculture is the biggest industry in the county...this process clearly needs more time. We need a more detailed study and more information."

I have lived in Baker County for over 55 years and care about what happens to this county. One of our other biggest industries was the timber industry, including logging, which in turn helped prevent the catastrophic wild fires we see today. However, due to the timber/lumber industry being shut down due to the erroneous and fraudulent claim that logging was killing the Spotted Owl, we lost our timber and logging industry along with good paying jobs. As it turns out, it was the Barred Owl causing the demise of the Spotted Owl. And guess what, officials are now killing the Barred Owls. No solid evidence was presented at that time, and this decision to do away with our logging and timber industry was at the whim of some non-thinking, non-informed, obedient official(s)..... **it was a total lie.**

NOT AGAIN! We won't be duped into thinking that what was presented to us on Tuesday, August 15th, is the truth, the whole truth and nothing but the truth, so help you GOD!

YES, a long-term study, with hard evidence and DNA testing, needs to be set in place before any law(s) are passed, and DEQ needs the input of our area ranchers and citizens to achieve this goal. Without input and coordination with our area ranchers and citizens, it's looking as though Oregon is headed toward authoritarianism.

Respectfully submitted,
JoAnn Marlette
Phone: 541-523-5851

Jan Alexander
PO Box 153
Unity, OR 97884-0153

PORTLAND OR 972
Dept of Environmental Quality
22 MAR 2024 PM 3 L

MAR 25 2024

Oregon DEQ
700 NE Multnomah St Suite 600
Portland, OR 97232
Attn: Alex Liverman

Attn Alex Liverman

97232-41005O

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

March 20, 2024

Re: Powder River Basin, TMDL-Please stop this TMDL process, since we need to establish a baseline.

Mr. Liverman:

It's hard for me to imagine why DEQ is so set on implementing this rule when your agency has not established a scientifically-based baseline. Baker County Commissioner Christina Witham told me this morning that you are pushing the TMDL ruling on Baker County because of lawsuits.

That is a sad commentary on the agency. The TMDL should be implemented when the studies are complete and all needed information has been gathered, not because of some lawsuits. I continue to have concerns about the entire TMDL process.

I understand that DEQ may be able to implement the rule, but include a contingency that the rule will be modified based on gathering baseline information.

Of course it would make more sense to gather the information first, then implement with the correct baseline. I guess DEQ does not do much these days that makes sense to me.

The Burnt River Irrigation District has conducted sampling of four sites in the Burnt River subwatershed for e-coli, and this season they will also be checking for DNA. Similar testing is taking place throughout the watershed. We need a solid 5 years of sampling for e-coli levels, along with DNA, so we know what percentage of e-coli is coming from wild animals, humans and birds, and what percentage is coming from domestic livestock. But most importantly, we need to know if the e-coli levels are right now within State standards and no additional mitigation measures are needed.

I know DEQ doesn't care about my opinion, and realize your agency is planning to implement the TMDL despite the facts. And instead of answering Baaker County's questions, DEQ is saying they will do that later. So much for working together in partnerships, something I heard said at the last meeting in Baker City.

I believe DEQ should call a halt to this process, and actually begin working in partnership with Baker County and its citizens.

Sincerely,

Jan Alexander

Jan Alexander
541-446-3413

Jan Alexander
PO Box 153
Unity, OR 97884-0153

PORTLAND OR 972
29 AUG 2023 PM 1 L

Alex Liverman
Dept of Environmental Quality

AUG 31 2023

Oregon DEQ
700 NE Multnomah St. Suite 600
Portland, OR 97232

97232-410050

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

Re: Powder River Basin, Total Maximum Daily Load Rulemaking-Please extend the deadline for comments

Dear Mr. Liverman,

As a citizen of Baker County, I am very much concerned with the TMDL developed for our County. It is a complicated rule, based on incomplete studies, and the effects of implementation will be adverse on our Baker County farmers and ranchers. The bottom line is, we need more time to address this proposed rule.

I attended the meeting August 15, 2023, where DEQ took testimony on this proposed rule. Over 100 citizens of Baker County turned out for the meeting, and many openly expressed their concern with this rule, which by all appearances, was designed to ruin their lives, and destroy the Baker County agricultural economy.

DEQ personnel had no answers to the many questions raised at that meeting. We heard repeatedly, "*we will get back to you to answer that question*" but that has not happened. This rule needs to be put "*on hold*" so that all pertinent information can be included, scientifically based studies can be analyzed, and conclusions and a path forward made that is based on science. There needs to be open lines of communication moving forward on the development of a rule such as this one. Many members of this community did not even know about this rule until the August 15, 2023 public meeting.

I was amazed DEQ did not consider other sources of coliform other than that associated with cattle. Ranchers testified that their ranches receive run-off from the four elk feeding stations where 400-600 head of elk gather each winter. For DEQ to come to the conclusion that e coli bacteria all comes from cattle, without any evidence that this is true, is wrong.

Instead of stuffing this rule down the throats of hard-working ranchers and farmers, why not work with Baker County citizens? We are all concerned about our County, and naturally we are concerned about the water. Water is the life of this county, and that is why county farmers and ranchers are known for their stewardship of the land. Baker County citizens and organizations are all willing to work with DEQ on a rule that will work for everyone.

Along with my County Commissioners and other citizens, I am requesting a time extension beyond the stated deadline of August 31, 2023, for comments to be submitted.

I appreciate this opportunity to comment, and as I learn more about this rule, I would like the opportunity to provide further comments.

Sincerely,

Jan Alexander
Concerned Baker County Citizen and Small-scale farmer
541-446-3413

Eastern Oregon Mining Association
P.O. Box 932
Baker City, OR 97814

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

Re: Comments on the proposed Powder River Basin, TMDL and Request for Additional Time

Dear Mr. Liverman,

EOMA is an organization made up of over 200 individuals who live, work, visit and enjoy the natural resources of Baker County.

Our organization promotes use of the lands and waters of this basin, while also promoting healthy watersheds. Agriculture is the leading economic factor of Baker County's economy. It is the livelihood for families who have farmed and ranched in this area for generations. Our citizens, whether they are farmers, ranchers or miners, are good stewards of the land and work diligently to protect water quality.

Thus, DEQ's assertion that they know all there is to know about coliform in waterways, and what to do about it, despite a lack of science-based evidence, no recent studies and lack of involving the local citizens in the rule making process, has resulted in a complete lack of trust with the agency.

We heard at the January 31, 2024, meeting in Baker City that DEQ's goal was to "start making partnerships". This should have been done long ago. DEQ does not know this basin better than we do. DEQ should have involved our citizens, and involved our soil and water conservation districts, Natural Resources Conservation Service (NRCS), Baker County Livestock Association, Baker County Commissioners, and Oregon Department of Fish and Wildlife.

We request a time extension beyond the stated deadline of February 9, 2024, for comments to be submitted. DEQ has never answered Baker County's questions from the meeting held on August 15, 2023. Perhaps DEQ could use the extended timeframe to answer some of these questions.

The truth here, is that DEQ needs to go back to the beginning and establish baseline. Involve our local people, coordinate with Baker County. Our citizens and organizations could work in conjunction with you to develop a plan for sampling and testing of the Powder River waterways over the next five years.

This TMDL is unacceptable to Baker County and the people who use the land and water. Start over, establish those partnerships early, and work together for the benefit of the waterways and the benefit of Baker County and its citizens.

Sincerely,

Ken Alexander
President, Eastern Oregon Mining Association

Kenneth D. Alexander
PO Box 153
Unity, OR 97884-0153

PORTLAND OR 972
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Oregon DEQ
700 NE Multnomah St. Suite 600
Portland, OR 97232

Dept of Environmental Quality
FEB 12 2024

ATTN: Alex Liverman 97232-4100

Brad & Lorrie Andrews
P.O. Box 82
Unity, OR 97884
February 9, 2024

Oregon DEQ
powderTMDL@deq.oregon.gov
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

I live in the community affected by DEQ's assessment of e. coli and fecal coliform in the Powder River Basin. DEQ has essentially chosen one condition to measure water quality, and has decided to place the blame on cattlemen, saying cattle are 90%+ responsible. It is questionable that this decision is backed by sound science. Not only does this affect agriculture in general, but it affects the whole economy of our area.

The TMDL that DEQ advocates is the highest water purity standards accepted for recreation. However, the majority of surface water in Baker County is not recreational use, but a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion impeding recreation since they meander through private property with little or no public access points. This standard may be appropriate in some state cases, but not a standard for our primarily agricultural area.

DEQ's current TMDL documents blame agriculture for a high percentage of E. coli inputs that harm the watershed; the financial burden will be on privately owned land and agriculture operators. If that is truly the case, this should be done on an individual farm-to-farm basis using existing local resources like the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counter-productive, and will not be successful. The water flows at the time samples were taken can make a huge difference in water quality results and no protocols are listed for the samples being taken. These protocols are extremely important as it represents the overall health of the stream. If flows are not consistent while sampling, the data collected will not be consistent. No genetic testing has been done on the samples to determine the source. The only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process by a third-party, unbiased entity.

I am a private property owner who raises commodities within the Powder Basin. I have numerous concerns and questions regarding the DEQ's TMDL (total material daily load) for my area.
You are a government agency and are paid for and work for the people that live in this basin. The time frame for any implementation needs to be dialed back. Thank you for your attention to this matter.

Respectfully
Brad & Lorrie Andrews

Natural Resources Office
1995 Third St.
Baker City, OR 97814
541-519-1719
dbruland@bakercountyor.gov
March 20, 2024

Oregon DEQ
Attn: Alex Liverman/Watershed Management
700 NE Multnomah St, Suite 600
Portland, OR 97232-4100

Baker County appreciates the opportunity to comment on the proposed Draft Total Maximum Daily Load Rule (TMDL) for the Powder River Basin for bacteria.

The County is reiterating the request to put a hold on the Powder Basin TMDL Rulemaking/Implementation until complete data can be obtained. We propose to put together a Monitoring Stakeholders group that will guide the selection of sites, based on existing collection points, conduct field collections as well as electronic data including DNA analysis for 5-years, and then partner with ODEQ to develop and write a final TMDL for all water quality criteria.

Without accurate data, it is impossible to develop a Plan that will help to improve water quality. If we don't know the source of contaminants, how can we create a Plan to reduce them?

Unanswered Questions from the Public Hearing or brought in to the Baker Co office
During the Public Hearing on August 15, 2023, the community and Stakeholders asked several questions that did not receive an answer during the meeting. The County will ask them again now:

What happens when all of the best practices have been implemented and the standards still cannot be met?

How can you allege livestock are the primary contributors to E. coli without a DNA analysis?

What is the exact "timeline" for compliance? The answer of "it's going to take decades" lacks meaning and negates the entire process.

Why now? What's the rush? We already have Ag Water Quality Plans that are being implemented and have shown to improve the ecosystem.

What is the problem that must be solved with an intervention?

Who, and or what, is being harmed? How badly were they harmed?

Can you describe a specific incident that the E. coli in the Basin is directly linked to?

What are the criteria used to identify the harm?

Was peer reviewed scientific literature used to identify the harm?

Were comparable ecosystems utilized to compare and contrast the harm? (Systems that exist elsewhere in the western US with similar climate, ecology, geology, and rainfall?)

Does the harm exist in equal amounts throughout the Powder River Basin or are there particular places where the harm is objectively more dangerous?

Is the methodology used to obtain data clearly communicated, replicable, and is there a mechanism in the data collection process to pick up error in data collection?

Is there a method to minimize collector reliability, to test that collectors are doing the work properly?

In Summary

Baker County does not support the DRAFT Powder Basin TMDL Rules.

The process has been shoved through without the ODEQ taking County or public input seriously or into consideration. No one knows the county better than the people who live and work here, but it appears that our voices do not matter. Unfortunately, this Rule does not take into account public input from farmers, ranchers, and stakeholders who are forced to comply without their voices being heard. Our communities deserve regulatory certainty and safeguards from state government regulations dictating how they use their land.

The data that supports the ODEQ's allegation of livestock being the primary contributor to bacteria is non-existent. There was no consistency in data collection and the "irrigation" months are completely missing from the data set. The County will not accept the Rules based on incomplete and incorrect data.

Baker County is ready and willing to help make this program a success, but it will have to be based on factual data, collected by trained personnel, detailed to include DNA analysis, and not disregarding the public's input and shared knowledge.

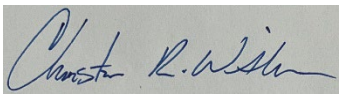
Please, do not hesitate to contact me with question or concerns.

Thank you,

Doni

Doni Bruland
Baker County Natural Resources/Parks Coord
541-519-1719

Thank you,



Christina Witham, Commissioner
Baker County Commission

The Environmental Compliance Organization LLC

7133 N Lombard St
PO Box 83706
Portland, Oregon 97283
Telephone 503/246-1514
environmental-compliance.com

Thomas R. Benke
Managing Member
trbenke@env-compliance.com

March 8, 2024

Vanessa Rose
Powder River Basin Coordinator
Department of Environmental Quality
Watersheds Management
700 NE Multnomah Street, Suite 600
Portland, OR 97232
powderTMDL@deq.oregon.gov

Re: Total Maximum Daily Load Rule
Powder River Basin - Bacteria

Dear Ms. Rose,

I represent Hayes Oyster Company and Tillamook Bay Shellfish Company. These comments on the proposed Total Maximum Daily Load Rule for the Power River Basin, as requested in the Department of Environmental Quality's public notice are made on behalf of each of Hayes Oyster Company and Tillamook Bay Shellfish Company, each of whom reserves the right to challenge any determination made by the Department with respect to the aforementioned proposed TMDL.

Reviewing the proposed Total Maximum Daily Load Rule for the Power River Basin – Bacteria (January 2024) we are struck by the complete absence of any reference to Confined Animal Feeding Operations and/or Concentrated Animal Feeding Operations ("CAFOs") as point sources. As you know, Concentrated Animal Feeding Operations are included in the definition of a "point source" under the Clean Water Act at § 502(14) and at OAR 340-045-001(17). Confined Animal Feeding Operations as defined at OAR 603-074-0010(3) are likewise included in the definition of a point source. This recognition of CAFOs as point sources, and the

establishment of Wasteload Allocations for each of them, has important ramifications for TMDL implementation.

We are likewise struck by the complete absence of any reference in the TMDL to "agricultural stormwater discharge" which, as you know, is excepted from the definition of a point source. We appreciate that such discharge is alluded to in the Technical Support Document [e.g., at page 11 "Surface and shallow subsurface runoff transport fecal bacteria into surface waters…" and at page 33 "This approach is appropriate because of the potential for disconnect between when and where fecal bacteria are deposited on the landscape in manure and the flow mechanisms responsible for delivering fecal bacteria to surface waters (runoff and irrigation practices")]. We do not appreciate evasive language such as that at page 75 of the Technical Support Document (e.g. at page 75 "areas occupied by livestock or *influenced by* livestock waste…").

We appreciate that the TMDL (as a "rule") anticipates that the Oregon Department of Agriculture as the "Designated Management Agency" will be required (pursuant to OAR 603-090-0030(1)] to amend its rules (at OAR 603-095-3600 through -3660) to include such "pollution prevention and control measures" as deemed necessary by ODA to attain the applicable water quality standard but we are concerned that the TMDL does not address "agricultural stormwater discharge" more directly given its apparent contribution to pollution in the watershed. Moreover, as described in the Water Quality Management Plan for the Powder River Basin – Total Maximum Daily Load for Bacteria (January 2024), it appears that DEQ believes that continued water quality impairment may be due to "insufficient implementation" of the existing Powder River AWQMP promulgated at OAR 603-095-3640. We recognize the further statement (at page 20 of the WQMP) that "DEQ concluded that AgWQ program area rules combined with the area plan voluntary measures are either not fully implemented throughout the basin or are not adequate to meet bacterial load allocations…" Clearly, the Powder River AWQMP at OAR 603-095-3640 "Prevention and Control Measures" is not adequate in that it includes no "pollution prevention and control measures" specific to the basin (with the exception perhaps of the establishment and development of riparian vegetation).

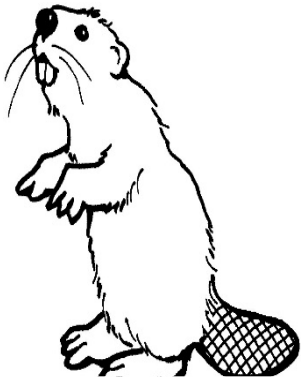
Importantly, pastures where manure is land applied in accordance with Agricultural Waste Management Plans approved by the Oregon Department of Agriculture are not part of the CAFO facility operating under the CAFO General Permit. Thus, the TMDL should address CAFOs (as point sources for which WLAs are established) separate and apart from the pastures where CAFOs land apply manure (as nonpoint sources for which LAs are established). Moreover, land application of manure "at agronomic rates in accordance with the permit registrant's ODA approved AWMP" ensures only that any subsequent pollutant discharge meets the definition of "agricultural stormwater discharge" and is thus exempt from the requirement of an NPDES permit. It does not mean that pollutant discharges will be sufficiently controlled to ensure attainment of the applicable water quality standard of the receiving stream. In short, DEQ should establish a LA for "agricultural stormwater discharge" specifically. Without it, ODA will likely continue to assume (erroneously) that land application at agronomic rates and in accordance with an approved AWMP will be sufficient to ensure attainment of the applicable water quality standard.

Sincerely,

Thomas R. Benke
Attorney – Managing Member
OSB #922251

cc: Jesse Hayes, President
Hayes Oyster Company

Nick Porta, Managing Member
Tillamook Bay Shellfish Company



Not Just Another Dam Project

Burnt River Irr. District

19498 Hwy 245

Hereford, Or. 97837

Shawn Klaus Manager

541-446-3313 Office

541-480-4465 Manager (Cell)

briver@ortelco.net

Oregon Department of Environmental Quality

Burnt River Irrigation District (BRID), and representing our local patrons, adamantly oppose any TMDL rules being established for the Burnt River Sub-basin as part of the Powder River Basin.

BRID should not be considered a "DMA Responsible Person" due to the definitions. In paragraph two of Chapter 340-042-0030 the only responsibility of the irrigation district is to deliver water according to certificated water rights. Once water is delivered the irrigation district has no control.

There are many flaws that were found in the Draft Technical Support Document, Draft Water Quality Management Plan, Draft TMDL Rule, and data collection and analysis, that pertain to the Burnt River Sub-basin. Throughout these documents a lot of analysis and data is based on assumptions instead of on science. Listed below are just some of the inaccuracies and flaws that were found.

1. At the Clarks Creek measuring and collection area, the flow data used from Idaho Power was proven to be **inaccurate** for many years. The site has never been a good control point for flow data. BRID had our own flow measuring system installed there and due to inaccurate data BRID moved our site. Idaho Power then came in with their own measuring device and we found that method was not accurate either. BRID does not rely on that site for our water management needs.
2. The Burnt River Sub-basin should not be held to the contact recreation standard for E. coli. The reaches identified by DEQ as impaired are mostly on private ground with little to no access for public recreation. The only area in the sub-basin that we consider as recreation is Unity Reservoir and by DEQ's findings it is not considered impaired.
3. Impaired river reaches are poorly identified for Burnt River Sub-basin, specifically Indian Creek to Marble Creek. Knowing fully well the Indian Creek starting point is on private land with no public access therefore no flow data or sampling could have taken place.

4. At the Clarks Creek site, according to raw data sampling, it appears that data in any three-day period was a high E-coli day with a preceding day of a low number and a following day with a low number. We believe these discrepancies are due to improper sampling and collecting and not the fault of the lab. (For example, see dates 6/27/12, 6/28/12, and 6/26/12, also some of the two-day samples are suspect for sampling technical problems as well). At the Huntington site there was not enough sampling done for accurate analysis. BRID disputes your usage of very old sample data at all sites on the Burnt River. Outdated sampling won't take into consideration the improvements made by landowners for the last 10 years.
5. Throughout all three documents, assumptions and conclusions are made that the main contributor is cattle without any DNA verification.
   Everything regarding the source of E. coli above Unity Reservoir, specifically the West Fork of Burnt River, is assumptions. The collection site at Rice Road which had high E. coli according to table 5.1b: BR Sub-basin Bacteria table 2010-2023, had no flow data, yet it is stated in the table that it is during irrigation season. There is no ag land on the West Fork of the Burnt River, as it is made up entirely of forest land and a very large subdivision that sits just above the lake. Many of these homes have been there since the 1960's with lots still being developed today and there are many homes that sit above the sampling site.
   The South Fork of the Burnt River which is listed as a Strategic Implementation Area also has no flow data and limited raw data. There were only approximately seven samples taken over a three-day period during irrigation season. In our opinion we need more data, more sampling along with flow data over a longer period to establish a true reflection of accuracy.

6. As part of detailed study to truly understand the perceived water quality issues on the Burnt River, BRID must convey to DEQ the importance of DNA testing to determine exactly what is responsible for any E. coli issues.
   A DNA study which can be referenced by a Capital Press article dated Jan 13, 2023 title "University Uses DNA to Determine Source of E. coli" by Carol Ryan Dumas, makes the case that "correlation is not causation". Even though cattle may be present at the time of high E. coli levels does not mean they were the source of contamination. The Mink Creek study determined that cattle were only responsible for a small percentage of E. coli, while humans, pets, birds, and wildlife were in fact the biggest contributors. After the study little or no changes had to be made in cattle management.
   Again, any TMDL E. coli regulations will only be effective if we know the actual sources of problems in the watershed. BRID reserves the right to research and present other studies on any appeal.

7. In the Draft TSD in table 5.2.1-page 69, Livestock grazing and pasture irrigation, shows bias towards animal agriculture without proof in the DEQ conclusions and are only based on assumptions. The Draft Water Quality Management Plan (WQMP) further shows the bias towards cattle as the main contributor based on assumptions instead of valid data. This section also concludes that the ag water quality program (Burnt River LAC) is ineffective in addressing E. coli. This conclusion is a direct slap in the face to ODA and the 1010 committee in their work over the last several years. The committee can only address the Water Quality Impairments that have a standard tied to them, which are temperature, sediment, and algae and in our opinion

have done a great job addressing these issues. Until now the committee has not had a standard for E-coli but are very capable of addressing it in the future.
Further in the Draft SQMP section 6.1 Persons Responsible for Monitoring, the BRID feels the requirements for submittal and monitoring requirements are a financial and time burden. As stated, many times, the lack of current and adequate data must be addressed before a monitoring plan can be developed. The monitoring and reporting requirements will be very expensive for the DMA's and may not be needed if current and adequate data proves there are no exceedances of E-coli standards. The BRID ask to be removed as a "Persons Responsible".

With the data deficiencies and blatant bias against animal agriculture throughout these documents, adopting the Draft TMDL Rule will only create landowner's distrust in the regulating agencies and fuel years of litigation and legislative involvement creating little landowner involvement in reaching a higher level of water quality in the Burnt River Sub-basin.

The Burnt River Irrigation District proposes a joint five-year detailed Water Quality Study with DNA and full flow data collection before TMDL rules are adopted. This would be working collaboratively with other experts and advisory groups within the Powder River Basin.

The BRID would like to reserve the right to point out other Oregon DEQ document deficiencies and flaws in the future and correct any errors.

Thank you for your consideration.
Sincerely,
Burnt River Irrigation District

Bill Moore-Board Chair
Ted Bloomer- Board Member
Pat Sullivan- Board Member
Shawn Klaus – District Manager

James C. Carnahan
14950 Pine Creek Lane
Baker City, OR 97814

February 5, 2024

Oregon Department of Environmental Quality
Attn: Alex Liverman/Watershed Management
700 NE Multnomah Street
Suite 600
Portland, OR 97232-4100

RE: Powder River Basin, Total Maximum Daily Load Rulemaking

Mr. Liverman,

I appreciate your extension of the public input period regarding the Powder River Basin TMDL issue and the meetings with DEQ staff last week. It is a good start, but DEQ is still moving way too fast on this issue in trying to regulate something that is still in question.

My questions and comments are based on the information provided by Oregon DEQ at your April 15, 2023, meeting, and the additional meetings January 31-February 1, 2024.

Regarding my perspective, I am a very small rancher (along with my wife), part-time cowboy, and full-time civil engineer with a career of almost 50 years. I am familiar with TMDLs from projects to design and construct wastewater treatment facilities. I have a life-long familiarity with the Powder River and its tributaries. I currently live near Baker City, but grew up in the Eagle Valley and Pine Valley areas, primarily on our family's homestead ranch that has been ours for five generations. Family members are still ranching there.

My questions and comments include the following:

1. The proposed TMDL is based on E. coli, a single item. What other constituents, if any, were included in your testing? For example, did you test for drinking water standards constituents or other types of bacteria such as giardia and cryptosporidium? If you did test for other items, what were those concentrations/results? Is there good (but not disclosed) news that only one item is of concern? If you only tested for E. coli, you may have had your conclusion in mind and focused activities to support that. It has the appearance of insincerity.
2. What were your sampling and testing protocols? If sampling was done by collecting grab samples, what was the consistency of time of day, time of year, surface vs. deep, specific location, retention time before testing, persons who collected the samples, split sampling, etc.? How many sample points were there? I was told by a representative of another governmental agency that your conclusion of high E. coli levels was based on only two sample points.
3. Table 3.0 and Figure 3.0 of your June 2023 handout provide summaries of the "contaminated" (Category 5) sections of the Powder River and its tributaries. Given your conclusion that "…runoff from grazed and irrigated areas…(are) primary sources of bacteria loads to streams..." the contaminated sections seem illogical as explained below:

    a. The entire length of the North Powder River is Category 5 even though it starts at Anthony Creek, in the national forest and well upstream of significant agricultural development.
    b. Most of the length of Eagle Creek is Category 5, from Two Color Creek to the Powder River. There is a short section above Two Color Creek but most of the contaminated length is through national forest and upstream of Eagle Valley with its associated agricultural development. There is grazing within the national forest, but it is very low density.
    c. Pine Creek, with almost identical conditions to Eagle Creek such as origin in national forest, extended flow upstream of developed agriculture, and then flow through an agricultural valley, is not

contaminated nor are the almost parallel East Pine Creek, Clear Creek, and Dry Creek. How can Eagle Creek be Category 5 while Pine, East Pine, Clear, and Dry Creeks, in identical conditions, are OK?

d. Powder River is Category 5 from Phillips Lake until it "magically" cleans up at Baker City. It is OK until Goose Creek enters, where Category 5 starts again, even though Goose Creek is not contaminated (nor is it even mentioned other than for location). Powder River remains Category 5 to the confluence with Eagle Creek. Downstream from Eagle Creek, the Powder River is OK, even though, as mentioned previously, Eagle Creek discharging into the Powder River is Category 5. In conclusion, Powder River is contaminated until it magically cleans up in passing through Baker City. It remains OK until flow from Goose Creek enters but is contaminated downstream even though Goose Creek is OK. Below Goose Creek, Powder River remains contaminated until flow from contaminated Eagle Creek enters, but this flow apparently cleans it up because it is then OK downstream of Eagle Creek to the Snake River. There is no logic in your conclusions.
e. Given all the possible animal contact (domestic and game animals) with streams in the Powder River basin, how can you conclude that irrigation runoff and associated livestock grazing are responsible for up to 95% of E. coli contamination? Table 2.3 shows that the category of Hay/Pasture only makes up 3.6% of the Powder Basin area but you conclude that contributes 95% of the E. coli! Although Shrub/Scrub (46.1%) and Evergreen Forest (26.9%) comprise 73.0% of the basin area, those two categories have very low-density livestock use and no irrigation. Your data do not support your conclusions.
f. Based on the information you have provided, DEQ wants to take control of Powder River water and force us to give up irrigation and livestock grazing within its basin. (I am aware all Oregon surface waters are state property but the Powder River, like most streams, has been adjudicated for use in long-standing water rights.) DEQ staff denied this conclusion at the February 1 meeting, but your written material indicates this.

In summary, I have a number of questions and can see no logic in your conclusions. At face value, you are simply choosing to attack agriculture, with irrigation and livestock in particular. Baker County's primary economic factor is agriculture, and, of that, the leading component is cattle raising. My conclusion is that your "study" is geared toward attacking our way of making a living, that you are outright attacking Baker County's livelihood through our water and cattle. You give no credit to how agricultural improvements such as Thief Valley and Phillips Reservoirs have improved late summer water flow in Powder River over the last one hundred years. Before those improvements, Powder River dried up in late summer!

If you are genuinely concerned about water quality in the Powder River, you first need to discuss the reliability of your data to show that water quality is really a problem. If you can first prove that, then sit down with the people of Baker County (a committee exists) and discuss it, mutually develop protocols, and then work to develop a plan of action. Come to help, not attack. Do I need to remind you that you work for us, that you are public servants? There are good folks here in Baker County who are willing to work with you. I strongly encourage you to join us in a positive effort.

Sincerely,

James C. Carnahan, P.E.

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property owner, who raises commodities within the Powder Basin. I have attended your open houses and meetings, as well as reviewed the Draft TMDL Documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of water. There are also no protocols listed for the samples being taken. Protocols for sampling, especially grab sampling, are extremely important; the sample is essentially capturing a moment in time that is then being represented as the overall health of the stream. If flows and protocols are not consistent while sampling, the data collected will not be consistent either.

Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

It is a general message in the current TMDL documents that agriculture is to blame for a high percentage of E. coli inputs into the watershed system and therefore must be the bearers of the financial burden to make improvements on our privately owned land and within our agriculture operations. If that is truly the case this should be done on an individual farm-to-farm basis using the local resources we have already in place, such as the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counterproductive and will not be successful.

There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners available. Landowners will be footing the bill to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

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DEE DEE CLARKE

J. TABOR CLARKE

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Thank you,

Chris M. Colton

Chris M Colton

Public Comment

Name: Holly McKim Email:

Street: 3165 College St. City: Baker City State: OR Zip: 97814

Comments:

1. Mosquitoes Carry e-coli
2. flies + ants Carry more e-coli
3. Will DEQ be able to determine which kind of ecoli is spread by insects as well as animals?
4. We need to work together so that we all benefit. There isn't need for more distrust with our government.

DEQ

State of Oregon **Department of Environmental Quality**

Public Comment

Name: Gloria Carlile Email:

Street: City: State: Zip:

Comments: All waters/basins should not have the same values Each should have their own

DEQ

State of Oregon **Department of Environmental Quality**

(THIS IS JUDY PRICE'S RESPONSE TO DEQ and you can use any and all of it for your response as well. Dead line is 2/9/24; each individual should sign their own copy. "Powder Basin fact sheet TMDL oregon" is website.)

TO:
Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

TO: 2 people
Leah.FELDON@deq.oregon.gov
and
Vanessa.rose@deq.oregon.gov

Attending the DEQ meetings regarding water quality management plan for the Powder Basin is disheartening...

DEQ requests communication, input, and concerns on our part, but it goes in one ear and out the other.
DEQ balks at independent scientific input to validate their data claiming that farmers and ranchers are 90% to blame for bacteria runoff into streams, and to achieve believable science by both parties.
DEQ ends the public comment period February 9, 2024, and will proceed with TMDL plan despite objections by concerned citizens to hold off until initial scientific practice and data are jointly acceptable and reliable.
DEQ should consider the competitive and conflicting water interests...flood water for water fowl, endangered Bull trout, AND last but not least--water being the life blood of our agricultural-based community going back as far as 7 generations rather than imposing "recreational water" as a priority standard.
DEQ's authority is delegated to them by the United States Environmental Protection Agency (EPA), to administer federal environmental programs including the Clean Air Act and the Clean Water Act. Who knows which Act can be used initially to benefit the success of the other? To fight the federal government is deadly and expensive because we are not paid for our efforts and effectively pay their salaries in the interim. The timber industry is greatly reduced in Eastern Oregon; the country's oil drilling for energy independence is curtailed; government subsidies for wind, solar, and electric cars reflect their agenda; even gas appliances will perhaps be outlawed.

Oregon's wildlife, farmland, our way of life, and every other resource we value in Eastern Oregon is actually at risk due to the manner in which DEQ justifies their required actions. My question is, "who else is interested in Eastern Oregon's resources"? If this TMDL program effectively harms our agricultural livelihood because ranchers have to reduce herd sizes or find more expensive grazing land if range lands including federal ground is off limits, then do we become the next one to say "T-I-M-B-E-R"? Whether anyone can predict the end result or not, my fear is that Eastern Oregon could become Western Oregon's industrial energy site. It started out as the Clean Water Act, but ends up as the Clean Air Act. We can

I want to collaborate with DEQ but will not simply listen to what you say and watch want you do. You are a government agency and are paid for and work for the people that live in this basin. The time frame for any implementation needs to be dialed back. Thank you for your attention; I look forward to working TOGETHER.

Judy Price
43215 Old Wingville Rd
Baker City, OR 97814
beborntwice@gmail.com
541-969-8660

(THIS IS A GENERIC RESPONSE TO DEQ. You can use any and all of it for your response as well. Deadline is 2/9/24; each individual should sign their own copy. "Powder Basin fact sheet TMDL oregon" is website.)

TO:
Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

TO: 2 people
Leah.FELDON@deq.oregon.gov
and
Vanessa.rose@deq.oregon.gov

I am a private property owner who raises commodities within the Powder Basin. I have numerous concerns and questions regarding the DEQ's TMDL (total material daily load) for my area.

The water flows at the time samples were taken can make a huge difference in water quality results and no protocols are listed for the samples being taken. These protocols are extremely important as it represents the overall health of the stream. If flows are not consistent while sampling, the data collected will not be consistent either.

Another issue is the TMDL that DEQ advocates is the highest water purity standards accepted for recreation. However, the majority of surface water in Baker County is not recreational use, but a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion impeding recreation since they meander through private property with little or no public access points. This standard may be appropriate in some state cases, but not a standard for our primarily agricultural area dating back as far as 7 generations.

DEQ requests collaboration...but do they? There are two Baker County Advisory Committees (TMDL Rules and Natural Resource), that have offered to apply for and manage a five-year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, that data would be available to any interested parties or agencies for comparison or supplementation to data collected by DEQ. At this point the TMDL rule making process would "begin" and the science behind it be truly unbiased, science-based, and acceptable to all parties.

DEQ's current TMDL documents blame agriculture for a high percentage of E. coli inputs that harm the watershed; the financial burden will be on privately owned land and agriculture operators. If that is truly the case, this should be done on an individual farm-to-farm basis using existing local resources like the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counter-productive, and will not be successful.

No genetic testing has been done on the samples to determine what is the source? The only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process by a third-party, unbiased entity.

The proven bacteria reduction practices in the DEQ draft document are expensive and questionably scientific. The financial impact to local landowners and agriculture producers will be significant and harmful. A focused "on the ground solution" or property by property consideration has not been defined. What will be available to help pay for compliance...questionable grants, long term loan with interest, etc?

Thank you for your attention to my concerns.

(THIS IS A VERY SHORT GENERIC RESPONSE TO DEQ. You can use any and all of it for your response as well. Deadline is 2/9/24; have others that you know sign too; "Powder Basin fact sheet TMDL oregon" is website.

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Attn: Vanessa Rose

TO: 2 people
Leah.FELDON@deq.oregon.gov
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I live in the community affected by DEQ's assessment of e. coli in the Powder River Basin. DEQ has essentially chosen one condition to measure water quality and has decided to place the blame on the back of cattlemen. It is questionable that this decision is backed by good science. Not only does this affect agriculture in general, but it affects the whole economy of our area.

Bobby J. Copley
ESN

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property owner, who raises cattle and timber within the Powder Basin. I have attended your open houses and meetings, as well as reviewed the Draft TMDL Documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of water. There are also no protocols listed for the samples being taken. Protocols for sampling, especially grab sampling, are extremely important; the sample is essentially capturing a moment in time that is then being represented as the overall health of the stream. If flows and protocols are not consistent while sampling, the data collected will not be consistent either.

Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

It is a general message in the current TMDL documents that agriculture is to blame for a high percentage of E. coli inputs into the watershed system and therefore must be the bearers of the financial burden to make improvements on our privately owned land and within our agriculture operations. If that is truly the case this should be done on an individual farm-to-farm basis using the local resources we have already in place, such as the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counterproductive and will not be successful.

There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even human contribution is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners. Landowners will be footing the bill to come into or remain in compliance with the TMDL Water Quality Management Plan. It is unclear how the livestock or commodities producer will be able to implement these strategies and stay economically viable. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with inadequate science behind them and no "on the ground" focused solution.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

L. Dean Defrees
Chairman
Baker Valley Soil and Water Conservation District

February 1, 2024

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Thank you,

Deryl Leggett
72934 Foothill Rd
Haines, OR 97833
Ph 541-910-3181

From: Mary Wise
To: ROSE Vanessa * DEQ; FELDON Leah * DEQ
Subject: TMDL Management Plan
Date: Wednesday, February 7, 2024 11:35:03 AM

As owners of a ranch in the Burnt River area of Baker County, we wish to voice our support for the Baker County Commissioner's proposed 5-year monitoring program. We feel it is necessary to have a more current, accurate and diverse study performed before implementation of any plan that affects our area and ranch operation.

Thank you,

Duwayne Sullivan Ranches
26151 Hwy 245
Hereford, OR 97837

Partners:

Edward D. Sullivan
Teresa Sullivan
Mary A. Wise

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
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Thank you,

Elmer Ziel

A Profile of Agriculture

Selected Geographies:

Baker County, OR

Malheur County, OR

Comparison Geographies:

Malheur County, [1]

Produced by
Headwaters Economics'
Economic Profile System (EPS)
https://headwaterseconomics.org/eps
March 13, 2024

Agriculture

Baker County, OR

About the Economic Profile System (EPS)

EPS is a free web tool created by Headwaters Economics to build customized socioeconomic reports of U.S. counties, states, and regions. Reports can be easily created to compare or aggregate different areas. EPS uses published statistics from federal data sources, including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

See https://headwaterseconomics.org/eps for more information about the capabilities of EPS. For technical questions, contact Patty Hernandez Gude at eps@headwaterseconomics.org or telephone 406-599-7425.

HEADWATERS ECONOMICS

headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions.

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

www.blm.gov

The Bureau of Land Management, an agency within the U.S. Department of Interior, administers 249.8 million acres of America's public lands, located primarily in western states. It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres. The Forest Service's mission is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

Agriculture

Baker County, OR

Table of Contents

*The term "farm" in this report describes all forms of agricultural production, including livestock operations.

Note to Users:

This is one of 14 reports that can be created and downloaded from EPS. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. The EPS reports are downloadable as Excel or PDF documents. See https://headwaterseconomics.org/eps.

Agriculture

Baker County, OR

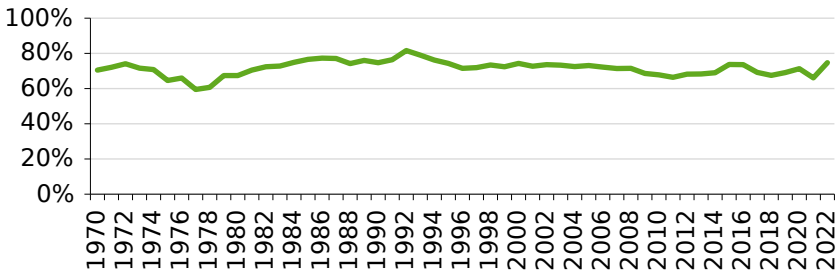
Farm Employment

	Baker County, OR	Malheur County, OR
Total Employment, 2022	8,955	17,535
Farm Employment	831	1,844
Farm Proprietors Employment	621	1,091
Non-Farm Employment	8,124	15,691
Percent of Total		
Farm Employment	9.3%	10.5%
Farm Proprietors Employment	6.9%	6.2%
Non-Farm Employment	90.7%	89.5%

All employment data on this page are reported by place of work.

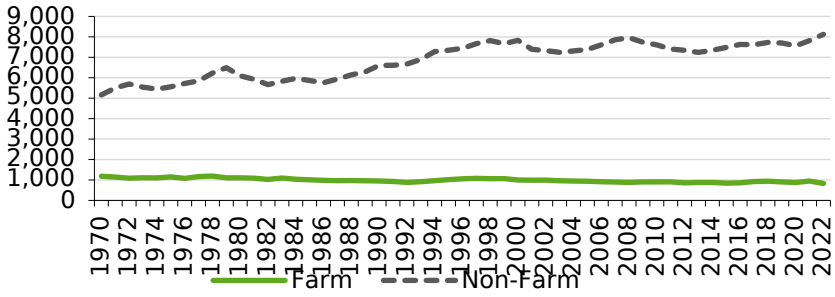
- In 1970, farm proprietors represented 70.5 percent of all farm employment. By 2022, farm proprietors represented 74.7 percent of all farm employment.

Farm Proprietors as a Percent of Farm Jobs, Baker County, OR



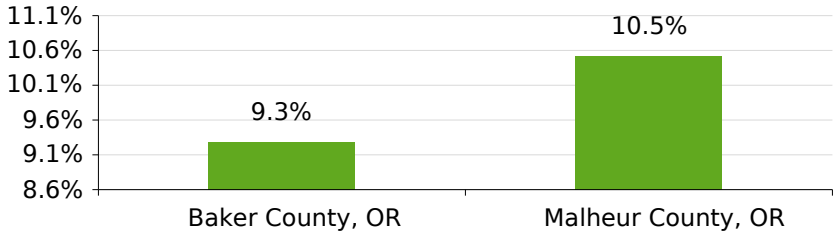
- From 1970 to 2022, farm employment shrank from 1,185 to 831 jobs, a 29.9 percent decrease.
- From 1970 to 2022, non-farm employment grew from 5,162 to 8,124 jobs, a 57.4 percent increase.

Farm and Non-Farm Jobs, Baker County, OR



- In 2022, Malheur County, OR had the largest percent of total farm employment (10.52%), and Baker County, OR had the smallest (9.28%).

Farm Jobs as a Percent of Total Employment, 2022



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.

Farm Employment

What do we measure on this page?

This page describes the number of farm jobs (full- and part-time), including proprietors, and farm jobs as a share of total employment for the selected location(s). It also shows long-term trends for farm proprietors as a share of all farm jobs, and for farm versus non-farm jobs.[1, 2]

Farm: Refers to all forms of agricultural production, including livestock operations.

Total Employment: Full- and part-time workers, wage and salary jobs (employees), and proprietors (the self-employed).

Farm Employment: The number of workers (full- and part-time) engaged in the production of agricultural commodities. It includes sole proprietors, partners, and hired laborers.

Farm Proprietors: Those who are self-employed (full- and part-time) as non-corporate farm operators. They can be sole proprietors or partners. For the purpose of defining "farm" proprietors, a farm is an establishment that produces or normally would be expected to produce at least $1,000 worth of farm products in a typical year.

Non-Farm Employment: Full- and part-time non-farm wage and salary employment and non-farm self-employment.

Data on this page are from the U.S. Bureau of Economic Analysis. These data portray long-term trends in employment and personal income of people employed in farming. This source also provides data on long-term trends in production expenses, different sources of crop and livestock income, and net profits, which are presented later in this report. The Census of Agriculture also provides employment information, but does so only every five years. The Census of Agriculture is used elsewhere in this report because of its detailed information on the size and number of farms by type.

Why is it important?

Farming and ranching can be a significant portion of the landscape and the local economy.

Nationwide trends indicate that, with gains in production efficiency, fewer people are working in farming. The land in farms is valuable for a number of reasons including the production of food and the preservation of rural communities, open space, scenic vistas, and wildlife habitat.

The growth or decline in the number of farm proprietors could indicate new agricultural entrepreneurs and/or the consolidation of agricultural enterprises.

Agriculture

Baker County, OR

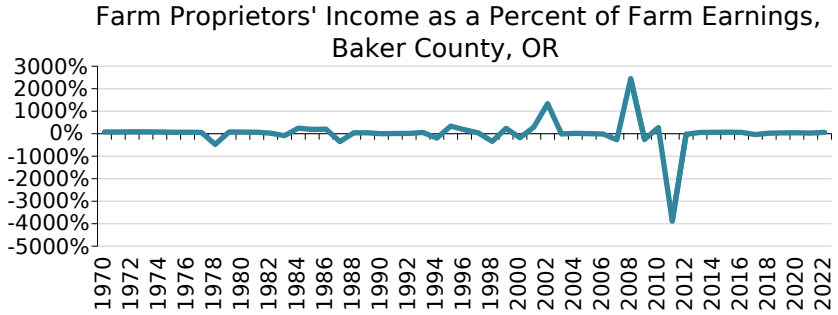
Farm Income*

	Baker County, OR	Malheur County, OR
Earnings by Place of Work ($1000), 2022	418,079	937,698
Farm Earnings	22,905	73,393
Farm Proprietors' Income	13,811	37,748
Non-Farm Earnings	395,174	864,305
Percent of Total		
Farm Earnings	5.5%	7.8%
Farm Proprietors' Income	3.3%	4.0%
Non-Farm Earnings	94.5%	92.2%

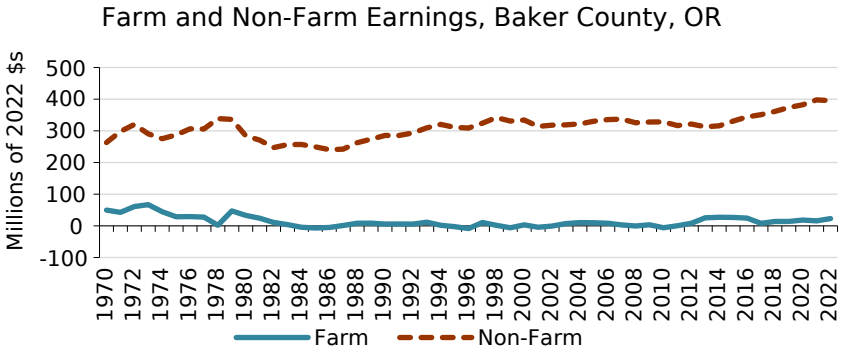
Farm business income shown here is different than farm personal income shown on the previous page.

* Thousands of 2022 $s

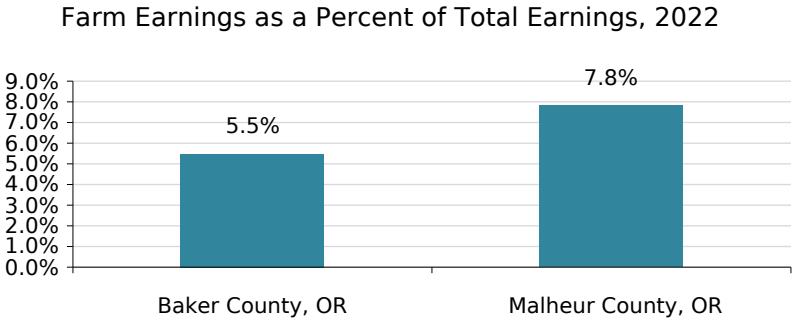
- In 1970, farm proprietors' income represented 78.6 percent of all farm earnings. By 2022, farm proprietors' income represented 60.3 percent of all farm earnings.



- From 1970 to 2022, farm earnings shrank from $49.7 million to $22.9 million, a 54 percent decrease.
- From 1970 to 2022, non-farm earnings grew from $263.1 million to $395.2 million, a 50.2 percent increase.



- In 2022, Malheur County, OR had the largest percent of total earnings from farm earnings (7.83%), and Baker County, OR had the smallest (5.48%).



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.

Farm Income

What do we measure on this page?

This page describes earnings (in real terms and by place of work) derived from farm employment, and farm earnings as a share of all labor earnings. It also shows long-term trends in farm proprietors' income as a share of all farm earnings, and farm versus non-farm earnings.[1, 3]

Farm: All forms of agricultural production, including livestock operations.

Earnings by Place of Work: The sum of wage and salary disbursements, supplements to wages and salaries, and proprietors' income (farm and non-farm). It does not include non-labor sources of income. Non-labor sources include Dividends, Interest and Rent, as well as Transfer Payments (e.g., Social Security, Medicare). For some farm owners, Rent may represent a significant source of income—for example, renting land to a neighboring farm, or rental income in the form of leasing subsurface rights, such as for oil and gas development. For more information on non-labor income, run an EPS Non-Labor report at https://headwaterseconomics.org/eps.

Farm Earnings: Net income from sole proprietors, partners, and hired laborers arising directly from the production of agricultural commodities, either livestock or crops. It includes net farm proprietors' income, wages and salaries, pay-in-kind, and supplements to wages and salaries of hired farm laborers. It specifically excludes income from non-family-farm corporations.

Farm Proprietors' Income: Income received by sole proprietorships and partnerships in the operation of farms. It excludes income that is received by corporate farms.

Non-Farm Earnings: The sum of wage and salary disbursements, supplements to wages and salaries, and proprietors' income for all industries, excluding farms.

The personal income information on this page does not include income received by corporate farms. The U.S. Department of Commerce provides farm "business" income data on corporations, in terms of production expenses, sources of income, and net profits. These data are presented in the next section of this report.

Why is it important?

The farm earnings trends shown on this page can be viewed alongside the employment trends on the previous page of this report. In some cases, farm earnings may decline (in absolute or relative terms) while farm employment stays the same or increases. In other cases, farm earnings may increase (in absolute or relative terms) while farm employment stays the same or declines. The same trends apply to farm proprietors and their income and point to declining or improving farm wages. For more information on earnings, see the Wages portion of this report.

Agriculture

Baker County, OR

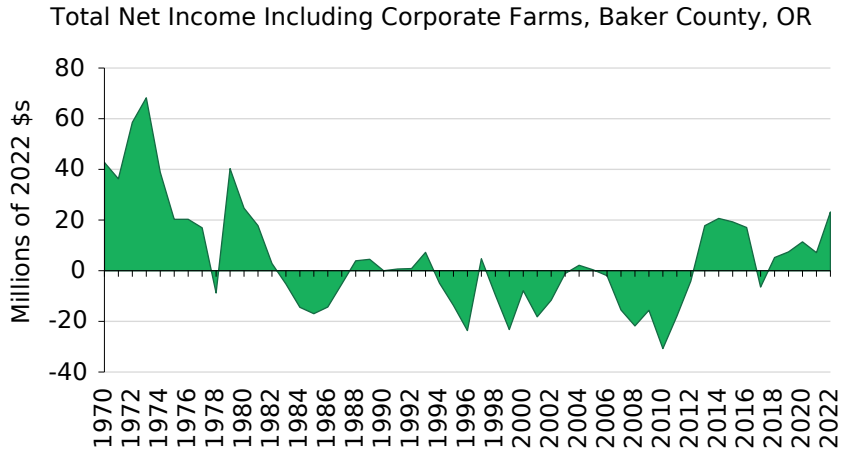
Farm Business Income*

	Baker County, OR	Malheur County, OR
Total Cash Receipts & Other Income ($1000), 2022	127,711	514,883
Cash Receipts from Marketing	105,735	478,896
Livestock & Products	57,819	233,696
Crops	47,916	245,200
Other Income	21,976	35,987
Government Payments	7,651	13,544
Imputed Rent & Misc. Income	14,325	22,443
Total Production Expenses	105,695	445,934
Net Income: Receipts - Expenses	22,016	68,949
Value of Inventory Change	1,157	-2,652
Total Net Income Including Corp. Farms	23,173	66,297
Ratio: Total Cash Receipts & Other Income/Total Production Expenses	1.21	1.15

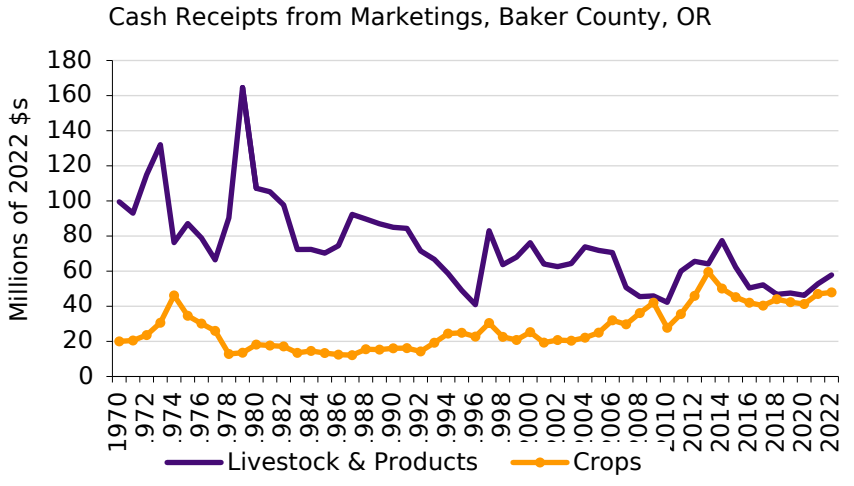
Farm business income shown here is different than farm personal income shown on the previous page.

* Thousands of 2022 $s

- From 1970 to 2022, net income including corporate farms shrank from $42.7 million to $23.2 million, a 45.8 percent decrease.



- From 1970 to 2022, cash receipts from livestock and products shrank from $99.5 million to $57.8 million, a 41.9 percent decrease.
- From 1970 to 2022, cash receipts from crops grew from $20.0 million to $47.9 million, a 139.6 percent increase.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.

Farm Business Income

What do we measure on this page?

This page describes components of farm business income and expenses (in real terms), and shows a ratio of gross income to production expenses as a measure of profitability. It also shows trends in net farm business income and cash receipts.[1] The farm data on this page are for all forms of agricultural production, including livestock operations. The farm business income reported on this page represents business revenues minus expenses and operating costs. This is a different form of income than farm labor earnings, which are the wages and salaries of farm employees.

Total Cash Receipts & Other Income: The gross cash receipts of all farms. It consists of: the cash receipts from farm marketing of crops and livestock; the cash receipts from other farm-related activities, including recreational services, sales of forest products, and custom-feeding services performed by farm operators; the payments to farmers under several federal government farm subsidy programs; the imputed value of home consumption, which is the value of the farm products produced and consumed on farms; and the imputed gross rental value of farm dwellings.

Total Production Expenses: Expenditures incurred by farm operators in the production of agricultural commodities, including livestock and crops. The major categories of production expenses are intermediate product expenses, which provide inputs to the production process (feed, livestock and poultry, seed, fertilizer, etc.), labor expenses (cash wages, employer contributions to Social Security, perquisites, and contract labor expenses), and other expenses (interest, net rent paid to non-operator landlords, capital consumption, property taxes, etc.).

Value of Inventory Change: The estimated value of net change in the farm inventories of livestock and crops that are held for sale during a given calendar year. This estimate is added to the estimate of realized net income so that the estimate of farm proprietors' income for a given year will include only the farm income from production during that year, or from "current" production. This estimate is added to Realized Net Income to calculate Total Net Income Including Corporate Farms.

Total Net Income Including Corporate Farms: The net income received by the sole proprietorships, partnerships, and corporations that operate farms. It is Realized Net Income plus the Value of Inventory Change.

Ratio (Total Cash Receipts & Other Income divided by Total Production Expenses): This is not an official Bureau of Economic Analysis calculation, but is another measure of farm business profitability.

The datasource for this page (U.S. Dept. of Commerce) was selected due of the high level of detail and long-term trends.[4]

Why is it important?

These data help answer important questions concerning the long-term health of the farm economy. In some places, farm business profits have been highly volatile and rising expenses and/or declining cash receipts have narrowed profitability. In other places, despite the volatility present in commodities markets, farming remains highly profitable.

In the early 1970s a period of high profitability in the agricultural sector was followed by a period of rapid decline—partly due to global economically and politically induced market volatility during that time. For example, the 1973 oil crisis, coupled with the 1973–1974 stock market crash, led to a major recession. The U.S. grain embargo against the Soviet Union in 1980 also negatively impacted farm profits. Since the mid-1980s, farm profits have generally increased.

Trends in livestock and crop production also closely follow commodity prices, which are available from the U.S. Department of Commerce.[5] Additional insights on agriculture are available from the Economic Research Service of the U.S. Department of Agriculture, including data, charts, and maps showing trends.[6]

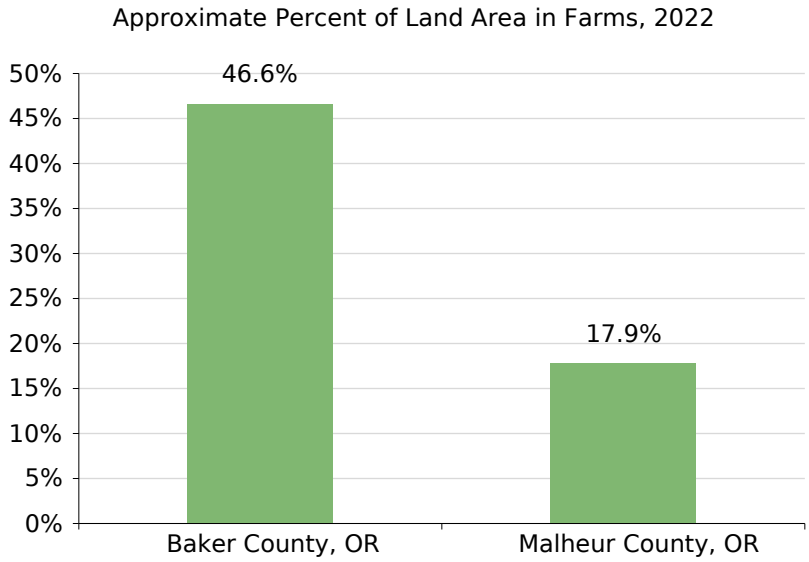
Agriculture

Baker County, OR

Number and Size of Farms

	Baker County, OR	Malheur County, OR
Number of Farms, 2022	676	861
Land in Farms (Acres), 2022	915,529	1,130,142
Average Farm Size (Acres)	1,354	1,313
Approximate Land Area (Acres)	1,963,499	6,328,090
Approximate Percent of Land Area in Farms	46.6%	17.9%

- In 2022, Baker County, OR had the largest percent of land area in farms (46.6274237980259%), and Malheur County, OR had the smallest (17.8591328505126%).



Data Sources: U.S. Department of Agriculture. 2024. National Agricultural Statistics Service, Census of Agriculture, Washington, D.C.

Agriculture

Baker County, OR

Number and Size of Farms

What do we measure on this page?

This page describes the number of farms, acres in farms, average farm size, total acres, and percent of total acres in farms.

Farm: All forms of agricultural production, including livestock operations. These data exclude leased public land from total land in farms.

Information on this page comes from the U.S. Department of Agriculture's Census of Agriculture[7], which is conducted every five years. The advantage of the Census of Agriculture is that it provides a high level of detail that makes it possible to see the role that farms play in the local economy and landscape, and to compare differences between locations. The disadvantages of this data source are that, like all forms of census, the accuracy of the data depends on the survey methods and the quality of the responses. Also, with this data source it is not possible to display continuous long-term trends.

Why is it important?

Even when agriculture is a small component of the economy, the industry can represent a large portion of the land base.

In many areas private agricultural lands are being converted to other uses, including residential development. The conversion of farm and ranch land is important for a number of reasons including the loss of food production and open space, the decline of rural communities, the change in demand on water resources, the spread of development in wildfire-prone areas, the loss of access to lands for recreation and hunting, and the loss of wildlife habitat.

To see how land is being converted to residential development, create an EPS Land Use report at https://headwaterseconomics.org/eps.

Farms and ranches continue to be important even as they increasingly operate alongside a larger, non-agricultural economy.[8] They contribute to local economic diversity, the scenery they provide can be part of the mix of amenities that attract and retain people and businesses across a range of industries, and they contribute an important part of local culture and community vitality.

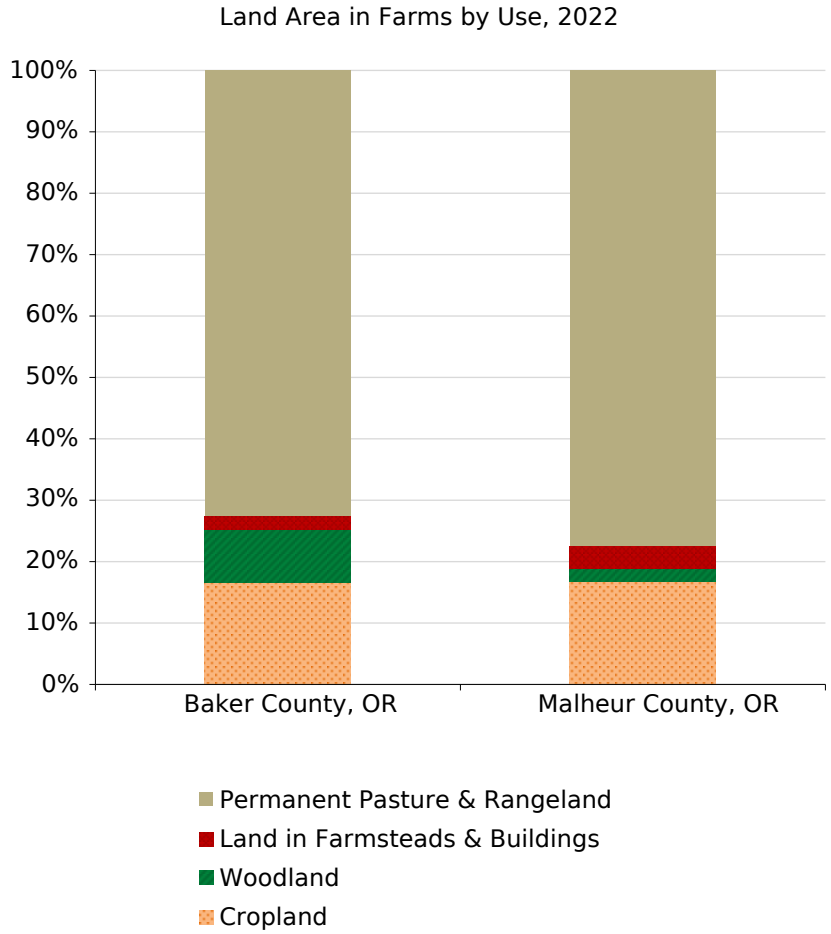
Agriculture

Baker County, OR

Acres of Farm Land

	Baker County, OR	Malheur County, OR
Land in Farms (Acres), 2022	915,529	1,130,142
Cropland	151,817	189,847
Woodland	79,494	22,806
Land in Farmsteads & Buildings	19,216	41,463
Permanent Pasture & Rangeland	665,002	876,026
Percent of Total		
Cropland	16.6%	16.8%
Woodland	8.7%	2.0%
Land in Farmsteads & Buildings	2.1%	3.7%
Permanent Pasture & Rangeland	72.6%	77.5%

- In 2022, Malheur County, OR had the largest percent of land area in cropland (16.8%), and Baker County, OR had the smallest (16.6%).
- In 2022, Baker County, OR had the largest percent of land area in woodland (8.7%), and Malheur County, OR had the smallest (2%).
- In 2022, Malheur County, OR had the largest percent of land area in farmsteads and buildings (3.7%), and Baker County, OR had the smallest (2.1%).
- In 2022, Malheur County, OR had the largest percent of land area in permanent pasture and rangeland (77.5%), and Baker County, OR had the smallest (72.6%).



Data Sources: U.S. Department of Agriculture. 2024. National Agricultural Statistics Service, Census of Agriculture, Washington, D.C.

Agriculture

Baker County, OR

Acres of Farm Land

What do we measure on this page?

This page describes how much farm land (in acres) is used for different production purposes.[9] The data were obtained from the U.S. Department of Agriculture's Census of Agriculture, which is conducted every five years.

The four categories of farm land use are cropland, woodland, farmsteads and buildings, and permanent pastureland.

Farm: All forms of agricultural production, including livestock operations. These data exclude leased public land from total land in farms.

Cropland: Includes harvested cropland, cropland used only for pasture and grazing, and "other cropland" (i.e., idled cropland or cropland used for cover crops or soil improvement).

Woodland: Includes natural or planted woodlots or timber tracts, for wood products and woodland pasture.

Farmsteads and Buildings: Includes livestock facilities, ponds, roads (private access roads and driveways but not public roads), and wasteland (e.g., ditches).

Permanent Pastureland and Rangeland: Includes permanent pasture and rangeland, other than cropland and woodland, and encompasses grazable land that does not qualify as woodland pasture or cropland pasture.

Why is it important?

Even when agriculture is a small component of the economy in terms of jobs, the industry can represent a large portion of the land base.

Not all agricultural land is used in the same manner. How farm and ranch lands are used can have important economic, environmental, and policy implications. For example, cropland may require water from surrounding lands; woodland can provide important habitat and store water; and pasturelands may be associated with public lands grazing and can provide open vistas that are important for attracting tourists and new migrants. Some lands may be less valuable (e.g., pastureland) and therefore more vulnerable to conversion for urban and suburban uses than other lands (e.g., cropland).

Farms and ranches continue to be important even as they increasingly operate alongside a larger, non-agricultural economy.[8] They contribute to local economic diversity, the scenery they provide can be part of the mix of amenities that attract and retain people and businesses across a range of industries, and they contribute an important part of local culture and community vitality.

Agriculture

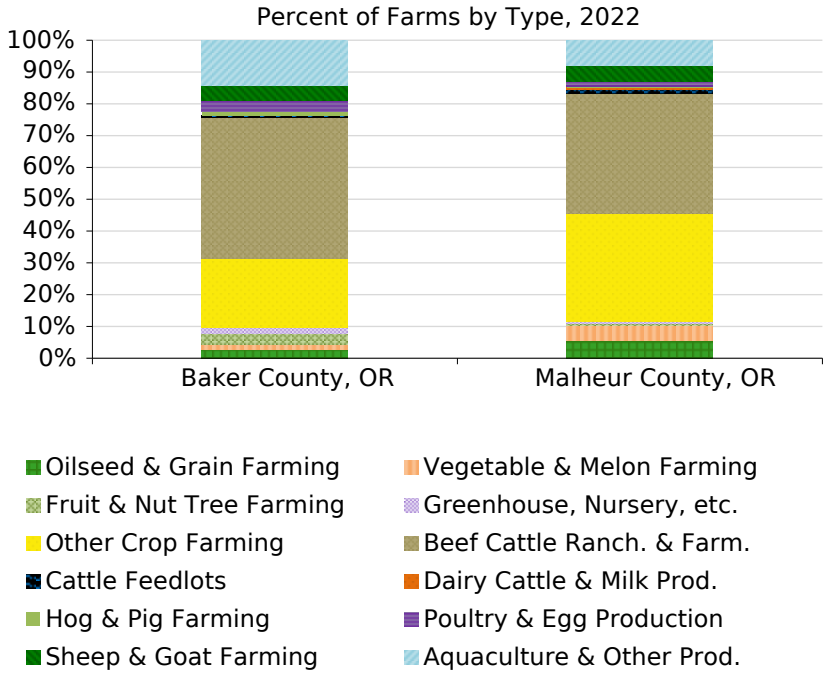
Baker County, OR

Types of Farms

	Baker County, OR	Malheur County, OR
All Farms, 2022	676	861
Oilseed & Grain Farming	18	49
Vegetable & Melon Farming	12	39
Fruit & Nut Tree Farming	23	5
Greenhouse, Nursery, etc.	13	6
Other Crop Farming	147	293
Beef Cattle Ranch. & Farm.	301	326
Cattle Feedlots	2	9
Dairy Cattle & Milk Prod.	0	5
Hog & Pig Farming	8	4
Poultry & Egg Production	24	14
Sheep & Goat Farming	32	42
Animal Aquaculture & Other Animal Prod.	96	69
Percent of Total		
Oilseed & Grain Farming	2.7%	5.7%
Vegetable & Melon Farming	1.8%	4.5%
Fruit & Nut Tree Farming	3.4%	0.6%
Greenhouse, Nursery, etc.	1.9%	0.7%
Other Crop Farming	21.7%	34.0%
Beef Cattle Ranch. & Farm.	44.5%	37.9%
Cattle Feedlots	0.3%	1.0%
Dairy Cattle & Milk Prod.	0.0%	0.6%
Hog & Pig Farming	1.2%	0.5%
Poultry & Egg Production	3.6%	1.6%
Sheep & Goat Farming	4.7%	4.9%
Aquaculture & Other Prod.	14.2%	8.0%

- In 2022, Malheur County, OR had the largest percent of oilseed and grain farming (5.7%), and Baker County, OR had the smallest (2.7%).

- In 2022, Baker County, OR had the largest percent of beef cattle ranching and farming (44.5%), and Malheur County, OR had the smallest (37.9%).



Data Sources: U.S. Department of Agriculture. 2024. National Agricultural Statistics Service, Census of Agriculture, Washington, D.C.

Types of Farms

What do we measure on this page?

This page describes the number and percent of all farms according to what they produce.

Farm: All forms of agricultural production, including livestock operations. These data exclude leased public land from total land in farms.

Other Crop Farming (NAICS code 1119): Establishments primarily engaged in (1) growing crops (except oilseed and/or grain; vegetable and/or melon; fruit and tree nut; and greenhouse, nursery, and/or floriculture products). These establishments grow crops, such as tobacco, cotton, sugarcane, hay, sugar beets, peanuts, agave, herbs and spices, and hay and grass seeds; or (2) growing a combination of crops (except a combination of oilseed(s) and grain(s) and a combination of fruit(s) and tree nut(s)).

Beef Cattle Ranching & Farming (NAICS code 112111): Establishments primarily engaged in raising cattle (including cattle for dairy herd replacements).

Aquaculture & Other Animal Production (NAICS codes 11251 & 1129): Aquaculture establishments are primarily engaged in the farm-raising and production of aquatic animals or plants in controlled or selected aquatic environments. Establishments classified as Other Animal Production are primarily engaged in raising animals and insects (except cattle, hogs and pigs, poultry, sheep and goats, and aquaculture) for sale or product production. These establishments are primarily engaged in one of the following: bees, horses and other equine, rabbits and other fur-bearing animals, etc., and producing products such as honey and other bee products. Establishments primarily engaged in raising a combination of animals with no one animal or family of animals accounting for one-half of the establishment's agricultural production are included in this industry group.

The Census of Agriculture data on farms by type are only reported by the number of farms. They are not reported by employment, income, or acreage.[10]

Why is it important?

Not all agricultural land is used in the same manner. Different types of farms have different economic potential and relationships with other natural resources including water and wildlife. Some lands may be less valuable (e.g., pastureland) and therefore more vulnerable to conversion for urban and suburban uses than other lands (e.g., cropland).

To see how land is being converted to residential development, create an EPS Land Use report at https://headwaterseconomics.org/eps.

Agriculture

Baker County, OR

Wages and Employment

Wages*, 2022	Baker County, OR	Malheur County, OR
Total Private & Public, (2022 $s)	$45,181	$45,118
Total Private	$42,605	$40,186
Farm	$32,842	˜$39,944
Crop Production	$32,219	$39,809
Animal Production	$33,990	˜$40,330
Non-Farm	$43,176	˜$40,207

Percent of Employment*, 2022	Baker County, OR	Malheur County, OR
Total Private	80.0%	74.6%
Farm	4.4%	˜5.9%
Crop Production	2.9%	4.3%
Animal Production	1.6%	˜1.5%
Non-Farm	75.6%	˜68.8%

* These tables show data from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on previous pages of this report.

Data Sources: U.S. Department of Labor. 2023. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

Wages and Employment

What do we measure on this page?

This page describes wages (in real terms) from farm employment compared to wages from non-farm employment. It also describes the percent of jobs in each category. These are shown together to illustrate the relative wage levels in farming (including sub-sectors) and how many people are employed in each sub-sector.

The primary purpose of this page is to compare the average annual wages between sectors, and to investigate the relative number of people employed in high- and low-wage sectors.

Farm: All forms of agricultural production, including livestock operations.[11]

The wage and employment data on this page are from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on the initial pages of this report.[12, 13]

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Estimates for data that were not disclosed are indicated with tildes (~).[15]

Why is it important?

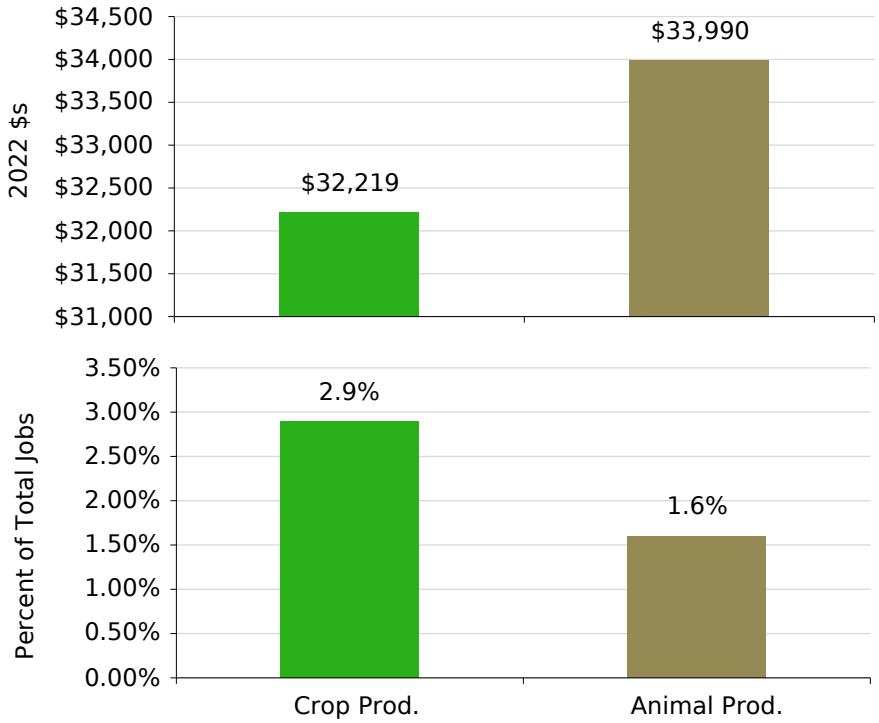
Farm employment often pays below-average wage rates, but this can vary by farm sub-sector and by location.[14] It is important to consider how farm industry wages compare to wages in other sectors, whether crop and animal production pay different wages, and whether there are significant wage differences between locations.

For more information on employment and wages in non-farm industries, create an EPS Socioeconomic Measures report at https://headwaterseconomics.org/eps.

Wages and Employment (cont.)

- In 2022, average annual wages in crop production were $32,219 and average annual wages in animal production were $33,990.

Avg. Annual Wages & Percent of Total Employment in Crop & Animal Production, Baker County, OR, 2022

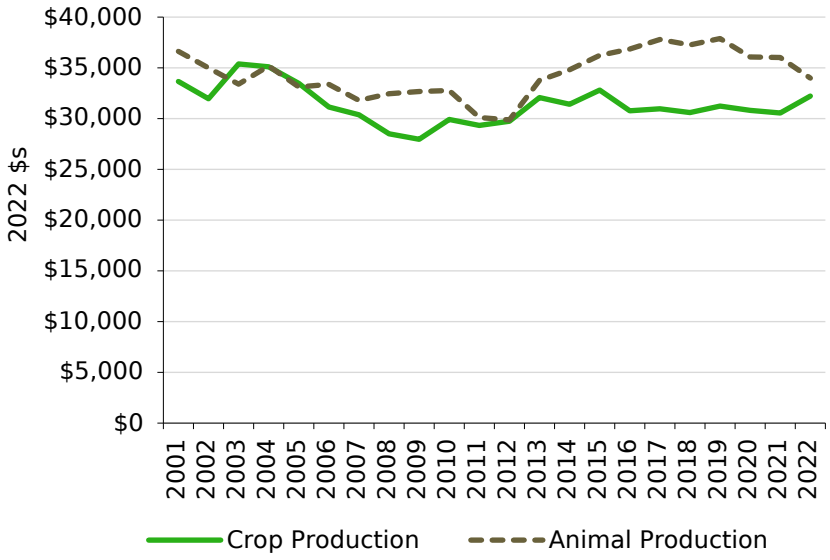


- In 2022, crop production jobs were 2.9 percent of total employment and animal production jobs were 1.6 percent of total employment.

- From 2001 to 2022, average annual wages in crop production shrank from $33,659 to $32,219, a 4.3 percent decrease.

- From 2001 to 2022, average annual wages in animal production shrank from $36,625 to $33,990, a 7.2 percent decrease.

Avg. Annual Wages in Crop & Animal Production, Baker County, OR



Data Sources: U.S. Department of Labor. 2023. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.

Wages and Employment (cont.)

What do we measure on this page?

This page describes average wages (in real terms) and employment levels in crop and animal production. It also shows average wage trends (in real terms) for these farm sectors.

The chart *Avg. Annual Wages & Percent of Total Employment in Crop & Animal Production* is useful for describing how many people are working in relatively high- and low-wage farm sectors. The chart *Avg. Annual Wages in Crop & Animal Production* is useful for comparing wage trends by farm sector.

Farm: All forms of agricultural production, including livestock operations. The components of Farm on this page (NAICS 111 crop production and NAICS 112 animal production) do not include agricultural services (NAICS 115 support activities for agriculture and forestry) because this category mixes farm and non-farm services.

The wage and employment data on this page are from the Bureau of Labor Statistics, which does not report data for proprietors or the value of benefits and uses slightly different industry categories than those shown on the initial pages of this report.[12]

The chart *Avg. Annual Wages in Crop & Animal Production* starts in 2001 because that is the year the Quarterly Census of Employment and Wages shifted to using the North American Industrial Classification System (NAICS). Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics provides estimates for these data gaps.[15]

Why is it important?

Not all components of the farm industry pay the same wages or employ the same number of people. It may be important to consider how farm industry wages compare to wages in other sectors, whether crop and animal production pay different wages, and whether there are significant wage differences between locations.

A significant increase in farm jobs that pay below the average for all industries will decrease overall average earnings per job. On the other hand, a significant increase in farm jobs that pay above the average for all industries will increase overall average earnings per job. A modest change in farm employment, especially when this industry is a small share of total employment, will not likely affect average earnings in a local area.

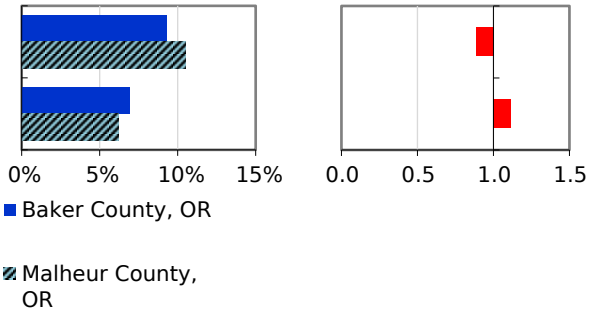
The Bureau of Labor Statistics' Quarterly Census of Employment and Wages data for industries is available at https://www.bls.gov/cew/; the Bureau of Labor Statistics' Occupational Outlook Handbook, which has detailed industry earnings and wages data at the national level, is available at https://www.bls.gov/ooh/; the U.S. Census Bureau's County Business Patterns database, which reports industry-level employment and payroll and can be used to estimate earnings, is available at https://www.census.gov/programs-surveys/cbp.html.

Agriculture

Baker County, OR

Comparisons

	Employment Share		Location Quotient	Employment Share	Location Quotient
	Baker County, OR	Malheur County, OR		Baker County, OR vs. Malheur County, OR	Baker County, OR vs. Malheur County, OR
Farm Employment, 2022	9.3%	10.5%	0.9		
Farm Proprietors Employment, 2022	6.9%	6.2%	1.1		



■ Baker County, OR

▨ Malheur County, OR

- In 2022, farm proprietors employment, 2022 had the highest location quotient score (1.1) and farm employment, 2022 had the lowest (0.9).

Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.

Agriculture

Baker County, OR

Comparisons

What do we measure on this page?

This page describes whether the region is specialized in farm employment.[1, 16] The chart illustrates the difference between the selected location(s) and the selected comparison area. (If no custom comparison area was selected, EPS defaults to comparing against the U.S.)

Location quotient[17]: A ratio that compares an industry's share of total employment in a region to the comparison area. More precisely, it is the percent of local employment in a sector divided by the percent employment in the same sector in the comparison area. In other words, it is a ratio that measures specialization using the comparison area for comparison. A location quotient of more than 1.0 means the local area is more specialized in that sector relative to the comparison area. A location quotient of less than 1.0 means it is less specialized.[18]

Another way to think about location quotients is as a measure of whether a place produces enough goods or services from an industry to satisfy local demand for those goods or services. Results above or below the 1.0 standard indicate the degree to which a place may import or export a good or service. Although there is no precise cutoff, location quotients above 2.0 indicate a strong industry concentration (and that an area is likely exporting goods or services) and those less than 0.5 indicate a weak industry concentration (and that an area is likely importing goods or services).

Farm: All forms of agricultural production, including livestock operations.

Why is it important?

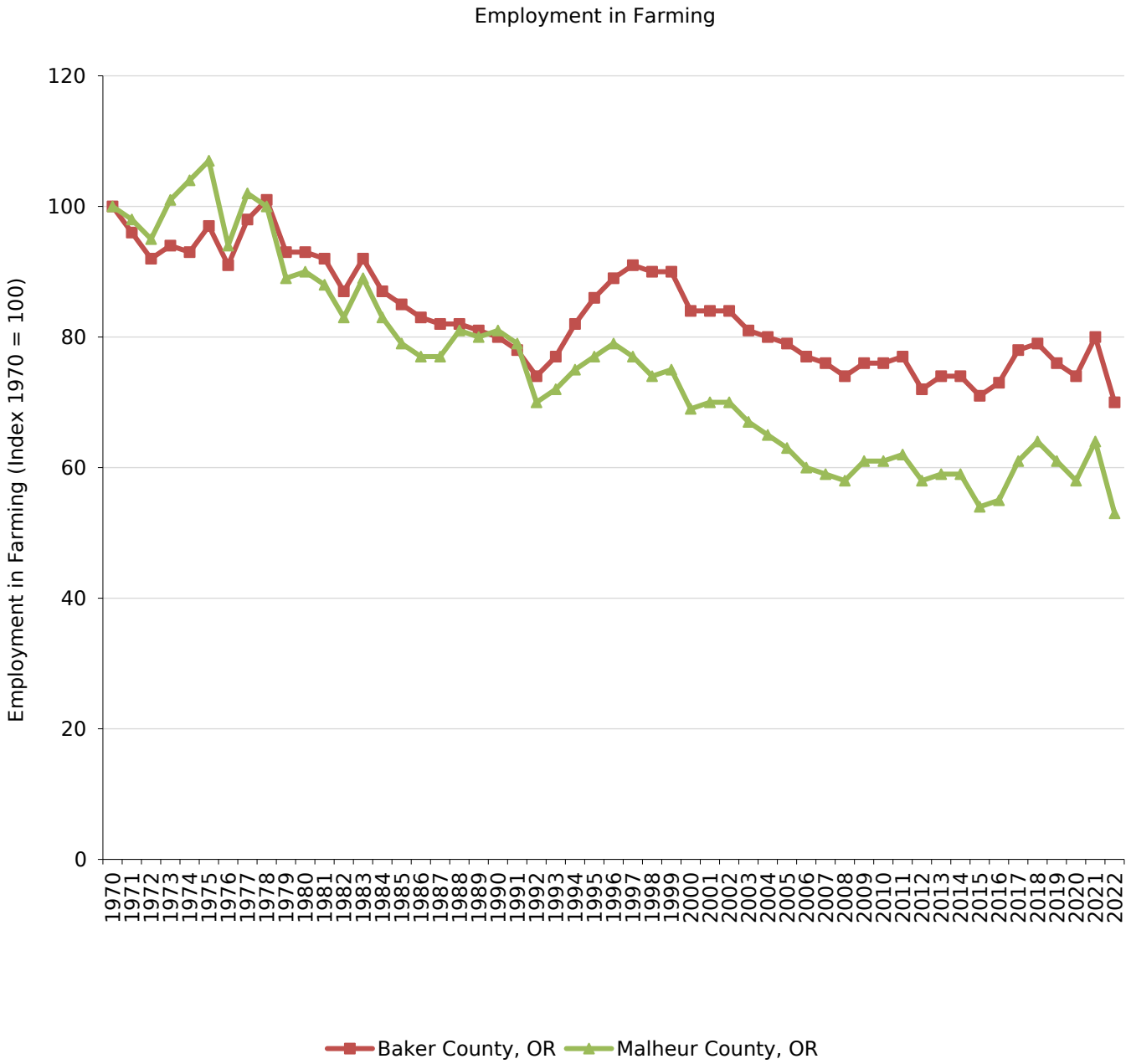
Agricultural employment in most parts of the U.S. has been declining, largely as a result of mechanization and other efficiencies of scale, for most of the last century. Nevertheless, it is still an important source of jobs in many places. This page shows a measure of importance (employment share) relative to the U.S.

A few caveats: (1) A large location quotient for a particular sector does not necessarily mean that sector is a significant contributor to the economy. (2) LQs greater than 1.0 only suggest potential export capacity when compared to the U.S. and do not take into account local demand. Local demand may be greater than a national average, and therefore all goods and services may be consumed locally (i.e., not exported). (3) LQs can change from year to year. (4) LQs can vary when one uses income or wage data rather than employment.

Agriculture

Baker County, OR

Comparisons Over Time



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.

Comparisons Over Time

What do we measure on this page?

This page describes the change in farm employment for all selected locations and the comparison area. The information is indexed (1970=100) so that data from locations with different-sized economies can be compared and to make it easier to understand the relative rate of growth or decline of farm employment over time.[1, 3]

Index: Indexed numbers are compared with a base value. In the line chart, employment in 1970 is the base value and is set to 100. The employment values for subsequent years are expressed as 100 times the ratio to the base value. The indexing used in the line chart enables easier comparisons between geographies over time. An indexed chart is used primarily to show relative rates of growth.

Farm: All forms of agricultural production, including livestock operations.

Why is it important?

Agricultural employment in most parts of the U.S. has been declining, largely as a result of mechanization and other efficiencies of scale, for most of the last century. However, this is not the case everywhere. In addition, not all locations have lost or attracted farm employment at the same rate.[19] An index makes it clear where the rate of farm decline or growth has been the fastest. Lines below 100 indicate absolute decline while those above 100 show absolute growth. The steeper the curve, the faster the rate of change.

It may be helpful to look for large year-to-year rises or dips in the lines to identify rapid employment changes. If the reasons behind these fluctuations are not evident, it may be helpful to talk with regional experts or local citizens to learn more about what caused abrupt changes.

Agriculture

Baker County, OR

Data Sources & Methods

This EPS Summary report uses national statistics from public government sources. All data used in EPS can be readily verified with the original sources:

- **Quarterly Census of Employment and Wages**
  Bureau of Labor Statistics, U.S. Department of Labor
  https://www.bls.gov/cew
  Contacts
  https://www.bls.gov/bls/contact.htm

- **BEA Regional Economic Accounts**
  Bureau of Economic Analysis, U.S. Department of Commerce
  https://www.bea.gov/regional/
  Contacts
  https://www.bea.gov/help/contact-us

- **Census of Agriculture**
  USDA National Agriculture Statistics Service
  http://www.agcensus.usda.gov
  Contacts
  https://www.agcensus.usda.gov/Contact_Us/

EPS core approaches
EPS is designed to focus on long-term trends across a range of important measures. Trend analysis provides a more comprehensive view of changes than spot data for select years. We encourage users to focus on major trends rather than absolute numbers. EPS displays detailed industry-level data to show changes in the composition of the economy over time and the mix of industries at points in time. EPS employs cross-sectional benchmarking – comparing smaller areas such as counties to larger regions, states, and the nation – to give a sense of relative performance. EPS allows users to aggregate data for multiple locations to allow for more sophisticated cross-sectional comparisons.

Adjusting dollar figures for inflation
Because a dollar in the past was worth more than a dollar today, data reported in current dollar terms should be adjusted for inflation. The U.S. Department of Commerce reports personal income figures in terms of current dollars. All income data in EPS are adjusted to real (or constant) dollars using the Consumer Price Index. Figures are adjusted to the latest date for which the annual Consumer Price Index is available.

Data gaps and estimation
Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps. These are indicated with tildes (~) in tables. Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at https://headwaterseconomics.org/eps.

Agriculture

Baker County, OR

Endnotes

1 - The Economic Research Service of the U.S. Department of Agriculture provides a number of easy-to-use references on farm businesses, production, and employment: https://www.ers.usda.gov/Publications.

2 - Bureau of Economic Analysis data in this report describe only the employment and personal income of people working directly in agricultural operations and do not include the subcategory Forestry, Fishing, Related Activities, and Other (BEA line code 100). We do not include BEA line code 100 because it mixes farm-related categories (e.g., soil preparation) with non-farm-related categories (e.g., hunting). It is not possible to disaggregate BEA line code 100.

3 - For the Economic Research Service's outlook on farm commodities, see https://www.ers.usda.gov/topics/farm-economy/commodity-outlook.aspx.

4 - Detailed tables on farm income and expenses, such as how much is spent on hired farm labor, feed, fertilizer, and petroleum products, are available from the U.S. Department of Commerce at https://www.bea.gov/regional/.

5 - Long-term commodity prices can be found at the National Agricultural Statistics Service of the U.S. Department of Agriculture: https://www.nass.usda.gov/Charts_and_Maps/Agricultural_Prices/index.php.

6 - Economic Research Service, USDA: https://www.ers.usda.gov/.

7 - The Census of Agriculture can be viewed at https://www.agcensus.usda.gov/.

8 - The Economic Research Service of the U.S. Department of Agriculture provides a website on major land uses: https://www.ers.usda.gov/data-products/major-land-uses.aspx. To browse Economic Research Service publications by topic, see https://www.ers.usda.gov/topics.aspx.

9 - The Census of Agriculture can be viewed at https://www.agcensus.usda.gov/.

10 - A description of the form used in the 2012 Census of Agriculture, and definitions of terms, is available at https://agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_1_US/usappxb.pdf.

11 - What we show as Farm in the tables on this page is the sum of the following NAICS codes: crop production (111) and animal production (112). It does not include NAICS code 115 (support activities for agriculture and forestry) because this category mixes farm and non-farm services.

12 - For an overview of how the Bureau of Labor Statistics treats employment, see https://www.bls.gov/bls/employment.htm. For an overview of how the Bureau of Labor Statistics treats pay and benefits, see https://www.bls.gov/bls/wages.htm.

Endnotes (cont.)

13 - Employment and wage estimates are also available from the Bureau of Labor Statistics for over 800 occupations. Looking at farming by occupation, rather than by sector or industry, is helpful since wages can vary dramatically across occupations. For more information on the most recent employment and wage estimates for Agriculture, Forestry, Fishing and Hunting (NAICS 11) by occupation, see https://www.bls.gov/oes/.

14- The Census of Agriculture website provides county-level farm data. See https://www.agcensus.usda.gov/.

15- Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at https://headwaterseconomics.org/eps.

16- For a review of literature on economic diversity, see Sterling, Andrew. 1998. "On the Economics and Analysis of Diversity." Electronic Working Papers Series, University of Sussex, available at: sussex.ac.uk/Units/spru/publications/imprint/sewps/sewp28/sewp28.pdf; and Malizia EE and K Shanzai. 2006. "The Influence of Economic Diversity on Unemployment and Stability." Journal of Regional Science 33(2):221-235.

17- LQ = (ei/e) divided by (Ei/E)
Where: ei = Local employment in industry i; e = Total local employment; Ei = U.S. employment in industry i; E = Total U.S. employment.

18- A succinct definition of a location quotient is offered by Indiana Business Research Center at IU's Kelley School of Business. See http://www.incontext.indiana.edu/2006/march/1.asp.

19- The Bureau of Labor Statistics provides an overview and outlook for farm occupations: https://www.bls.gov/ooh/management/farmers-ranchers-and-other-agricultural-managers.htm.

A Profile of Socioeconomic Trends

Selected Geographies:

Baker County, OR

Malheur County, OR

Comparison Geographies:

Malheur County, [1]

Produced by
Headwaters Economics'
Economic Profile System (EPS)
https://headwaterseconomics.org/eps
March 13, 2024

Socioeconomic Trends

Baker County, OR

About the Economic Profile System (EPS)

EPS is a free web tool created by Headwaters Economics to build customized socioeconomic reports of U.S. counties, states, and regions. Reports can be easily created to compare or aggregate different areas. EPS uses published statistics from federal data sources, including the U.S. Census Bureau, Bureau of Economic Analysis, and Bureau of Labor Statistics.

The Bureau of Land Management and Forest Service have made significant financial and intellectual contributions to the operation and content of EPS.

See https://headwaterseconomics.org/eps for more information about the capabilities of EPS. For technical questions, contact Patty Hernandez Gude at eps@headwaterseconomics.org or telephone 406-599-7425.

HEADWATERS ECONOMICS

headwaterseconomics.org

Headwaters Economics is an independent, nonprofit research group. Our mission is to improve community development and land management decisions.

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

www.blm.gov

The Bureau of Land Management, an agency within the U.S. Department of Interior, administers 249.8 million acres of America's public lands, located primarily in western states. It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of public lands for the use and enjoyment of present and future generations.

FOREST SERVICE
US
DEPARTMENT OF AGRICULTURE

www.fs.fed.us

The Forest Service, an agency of the U.S. Department of Agriculture, administers national forests and grasslands encompassing 193 million acres. The Forest Service's mission is to sustain the health, diversity, and productivity of the nation's forests and grasslands to meet the needs of present and future generations.

Socioeconomic Trends

Baker County, OR

Table of Contents

Note to Users:

This is one of 14 reports that can be created and downloaded from EPS. Topics include land use, demographics, specific industry sectors, the role of non-labor income, the wildland-urban interface, the role of amenities in economic development, and payments to county governments from federal lands. The EPS reports are downloadable as Excel or PDF documents. See https://headwaterseconomics.org/eps.

Socioeconomic Trends

Baker County, OR

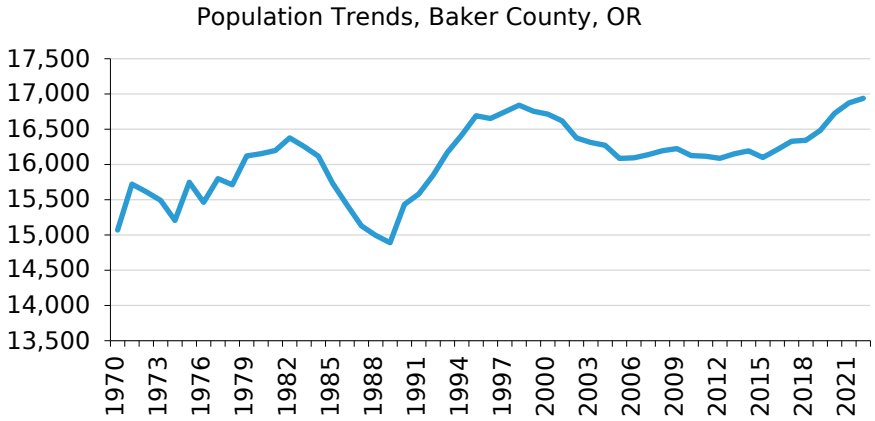
Overview of Historical Trends

According to the U.S. Census Bureau, Baker County, OR is designated as a Rural.

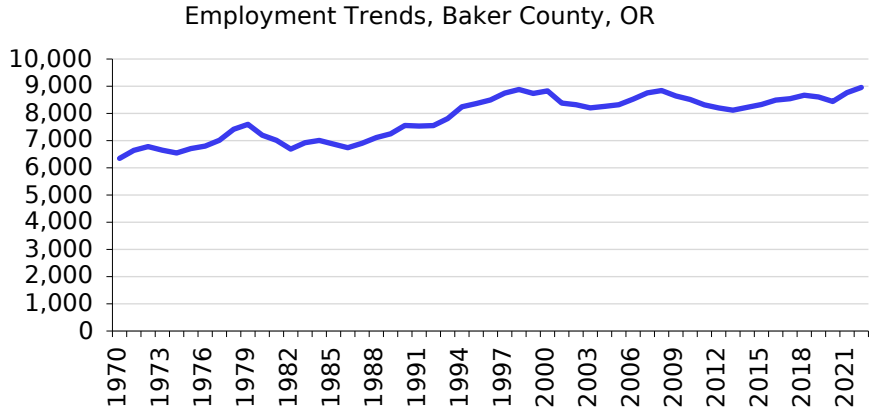
	1970	2000	2022	Change 2000-2022
Population	15,070	16,714	16,938	224
Employment (full & part-time jobs)	6,347	8,828	8,955	127
Personal Income (thousands of 2022 $s)	415,287	581,654	824,298	242,644

Population and personal income are reported by place of residence, and employment by place of work on this page.

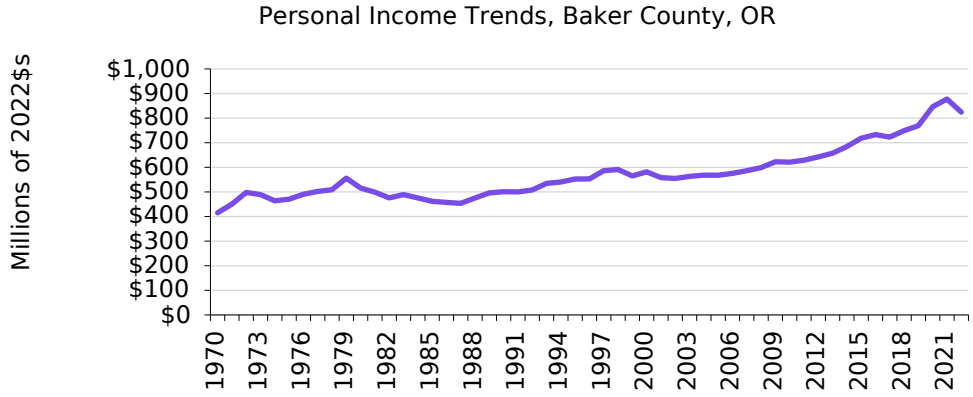
- From 1970 to 2022, population grew from 15,070 to 16,938 people, a 12% increase.



- From 1970 to 2022, employment grew from 6,347 to 8,955, a 41% increase.



- From 1970 to 2022, personal income grew from $415.3 million to $824.3 million, (in real terms), a 98% increase.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Socioeconomic Trends

Baker County, OR

Overview of Historical Trends

What do we measure on this page?

This page describes trends in population, employment, and real personal income. If this report is for an individual county, it also shows the county classification (metropolitan, micropolitan, or rural).[1]

Population: The total number of people by place of residence.

Employment: All full- and part-time workers, wage and salary jobs (employees), and proprietors (the self-employed) reported by place of work.

Personal Income: Income from wage and salary employment and proprietors' income (labor earnings), as well as non-labor income (dividends, interest, rent, and transfer payments) reported by place of residence. All income figures in this report are shown in real terms (i.e., adjusted for inflation). Subsequent sections of this report define labor earnings and non-labor income in more detail.

Metropolitan Statistical Areas: Counties that have at least one urbanized area of 50,000 or more people, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties. Metropolitan Statistical Areas are classified as either Central or Outlying.

Micropolitan Statistical Areas: Counties that have at least one urbanized area of 10,000 to 50,000 people, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties. Micropolitan Statistical Areas are classified as either Central or Outlying.

Rural: Counties that are not designated as either Metropolitan or Micropolitan.

Why is it important?

Long-term, steady growth of population, employment, and real personal income is generally an indication of a healthy, prosperous economy. Erratic growth, no-growth, or long-term decline in these indicators are generally an indication of a struggling economy.

Growth can benefit the general population of a place, especially by providing economic opportunities, but it can also stress communities and lead to income stratification. When considering the benefits of growth, it is important to distinguish between standard of living (such as earnings per job and per capita income) and quality of life (such as leisure time, crime rate, and sense of well-being).

A related indicator of economic performance is whether the local economy is negatively affected by periods of national recession. This issue is explored in depth in the section "Employment During National Recessions" later in this report.

The size of a population and economy (metropolitan, micropolitan, or rural) can have an important bearing on economic activities as well as opportunities and challenges for area businesses.

Socioeconomic Trends

Baker County, OR

Population

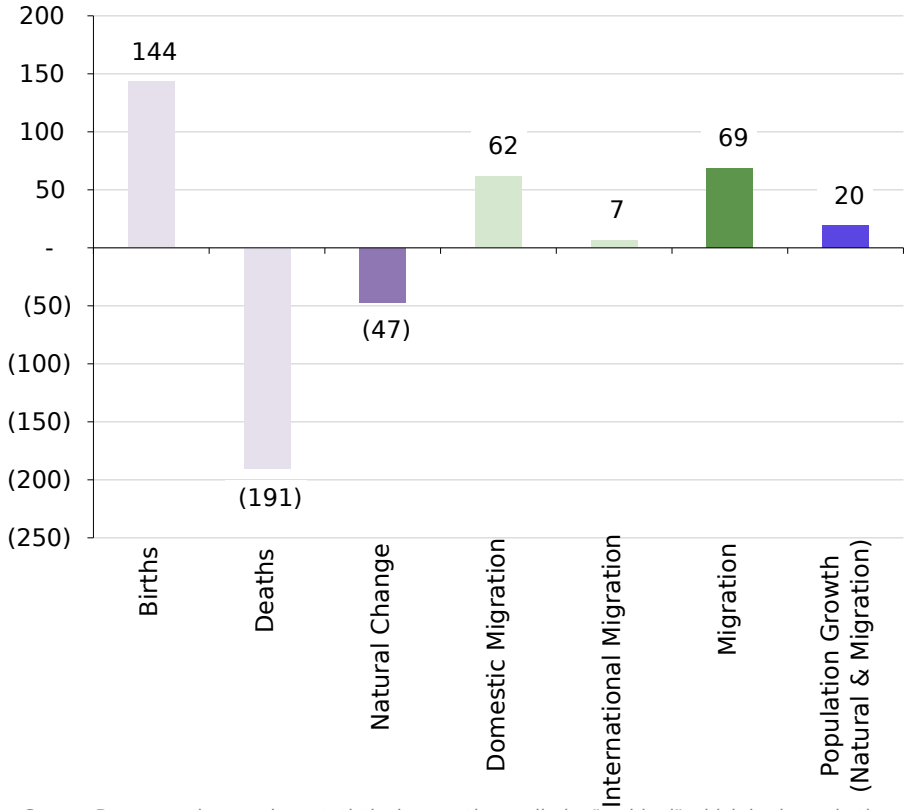
	Change 2010-2022
Population Growth, 2010-2022	822
Average Annual Population Change	20
From Natural Change	-47
Births	144
Deaths	191
From Net Migration	69
International Migration	7
Domestic Migration	62
From Residual	-2

Percent of Average Annual Population Growth, 2010-2022

Natural Change	39.8%
Net Migration	58.5%
Residual	1.7%

- From 2010 to 2022, population ` by 822 people, a 5% increase.
- From 2010 to 2022, natural change contributed to 40% of population change.
- From 2010 to 2022, migration contributed to 58% of population change.

Average Annual Components of Population Change, Baker County, OR, 2010-2022



* The Census Bureau makes a minor statistical correction, called a "residual" which is shown in the table above, but omitted from the figure. Because of this correction, natural change plus net migration may not add to total population change in the figure.

Data Sources: U.S. Department of Commerce. 2023. Census Bureau, Population Division, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Socioeconomic Trends

Baker County, OR

Population

What do we measure on this page?

This page describes components of population change and total population growth or decline. Total population growth (or decline) is the sum of natural change (births and deaths) and migration (international and domestic). Data are from the U.S. Census Bureau.[2,3]

The U.S. Census Bureau makes a minor statistical correction called a "residual." This is defined by the U.S. Census Bureau as resulting from two parts of the estimates process: 1) the application of national population controls to state and county population estimates; and 2) “the incorporation of accepted challenges and special censuses into the population estimates.” The residual represents change in the population that cannot be attributed to any specific demographic component of population change.

For more detailed information about demographics for a given area, create an EPS Demographics report at https://headwaterseconomics.org/eps.

Why is it important?

The components of population change offer insight into the causes of population growth or decline and they help highlight important areas of inquiry. For example, if a large portion of population growth is attributable to in-migration, it would be helpful to understand what is driving this trend, such as whether people are moving to the area for jobs, quality of life, or both. Similarly, if a large portion of population decline is attributable to out-migration, it would be important to understand the reasons, such as the loss of employment in specific industries, youth leaving for education or new opportunities, or elderly people leaving for better medical facilities.

Socioeconomic Trends

Baker County, OR

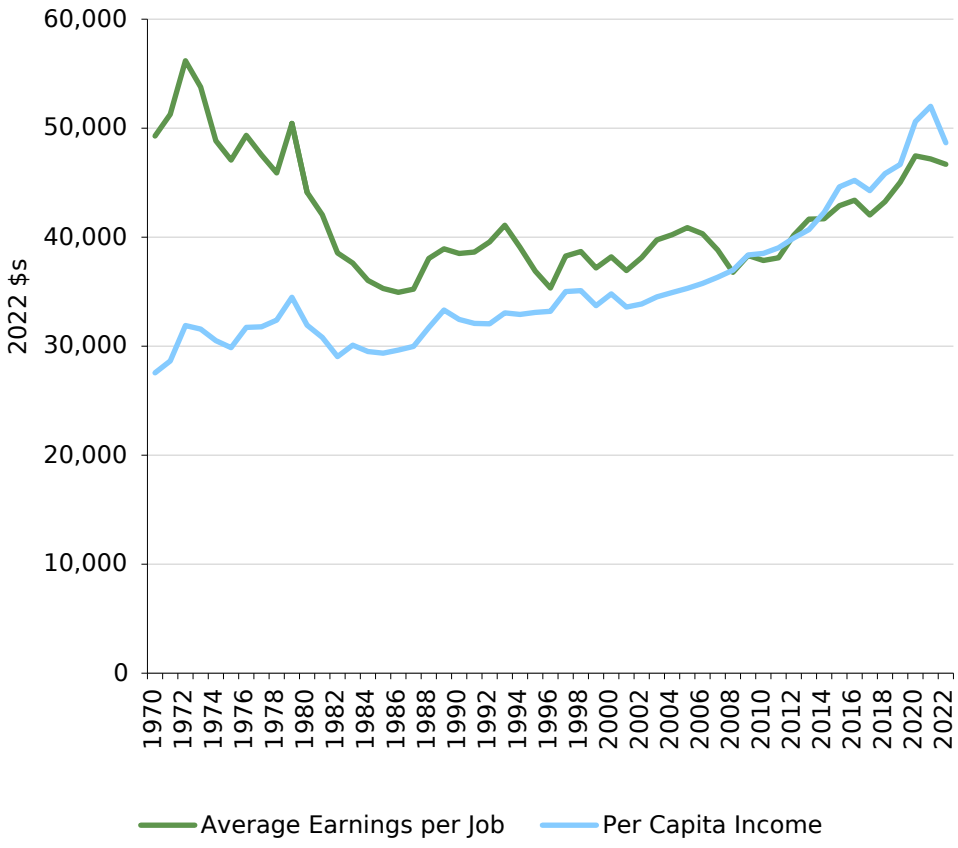
Earnings Per Job and Per Capita Income

	1970	2000	2022	Change 2000-2022
Average Earnings per Job (2022 $s)	$49,284	$38,198	$46,687	$8,489
Per Capita Income (2022 $s)	$27,557	$34,800	$48,666	$13,866

Percent Change	Percent Change 2000-2022
Average Earnings per Job	22.2%
Per Capita Income	39.8%

- From 1970 to 2022, average earnings per job shrank from $49,284 to $46,687 (in real terms), a 5% decrease.
- From 1970 to 2022, per capita income grew from $27,557 to $48,666 (in real terms), a 77% increase.

Average Earnings per Job & Per Capita Income, Baker County, OR



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Earnings Per Job and Per Capita Income

What do we measure on this page?

This page describes how average earnings per job and per capita income (in real terms) have changed over time.

Average Earnings per Job: The compensation of the average job. It is total earnings divided by total employment. Full-time and part-time jobs are counted at equal weight. Employees, sole proprietors, and active partners are included.

Per Capita Income: Income per person. It is total personal income (from labor and non-labor sources) divided by total population.

Why is it important?

Average earnings per job is an indicator of the quality of local employment. A higher average earnings per job indicates that there are relatively more high-wage occupations. It can be useful to consider earnings against local cost of living indicators.[4]

Average earnings per job may decline for a number of reasons: [5, 6]

1. more part-time and/or seasonal workers entering the workforce;
2. a rise in low-wage industries, such as tourism-related sectors;
3. a decline of high-wage industries, such as manufacturing;
4. more lower-paid workers entering the workforce;
5. the presence of a university that is increasing its enrollment of relatively low-wage students;
6. the in-migration of semi-retired workers who work part-time and/or seasonally; and
7. an influx of people who move to an area for quality of life rather than profit-maximizing reasons.

Per capita income is one of the most important measures of economic well-being. However, this measure can be misleading. Per capita income is total personal income divided by population. Because total personal income includes non-labor income sources (dividends, interest, rent and transfer payments), it is possible for per capita income to be relatively high due to the presence of retirees and people with investment income.[7] And because per capita income is calculated using total population and not the labor force (as in average earnings per job), it is possible for per capita income to be relatively low in a population with a disproportionate number of children and/or elderly people.

Socioeconomic Trends

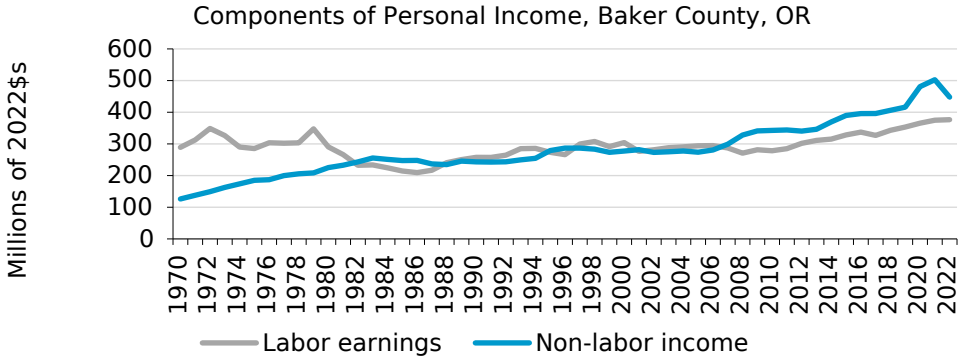
Baker County, OR

Labor Earnings and Non-Labor Income

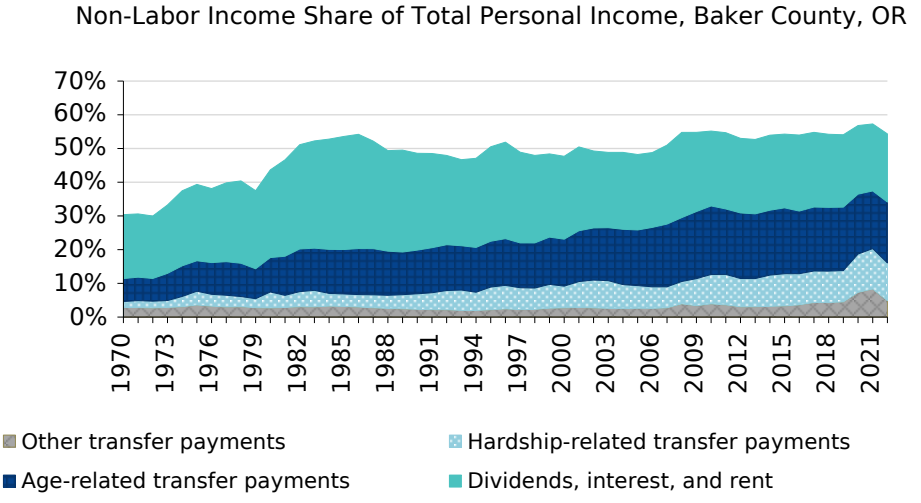
	1970	2000	2022	Change 2000-2022
Personal Income (thous' of 2022 $s)	415,287	581,654	824,298	242,644
Labor Earnings	289,117	304,191	376,493	72,302
Non-Labor Income	126,170	277,464	447,805	170,341
Dividends, Interest, and Rent	78,758	143,044	166,649	23,605
Age-Related Transfer Payments	28,226	80,991	148,765	67,774
Hardship-Related Payments	7,352	37,485	92,308	54,823
Other Transfer Payments	11,834	15,943	40,083	24,140
Percent of Total				Percent Change 2000-2022
Personal Income				41.7%
Labor Earnings	69.6%	52.3%	45.7%	23.8%
Non-Labor Income	30.4%	47.7%	54.3%	61.4%
Dividends, Interest, and Rent	19.0%	24.6%	20.2%	16.5%
Age-Related Transfer Payments	6.8%	13.9%	18.0%	83.7%
Hardship-Related Payments	1.8%	6.4%	11.2%	146.3%
Other Transfer Payments	2.8%	2.7%	4.9%	151.4%

All income data in the table above are reported by place of residence and are displayed in thousands of 2022 dollars. Labor earnings and non-labor income may not add to total personal income due to adjustments made by the Bureau of Economic Analysis.

- From 1970 to 2022, labor earnings grew from $289.1 million to $376.5 million (in real terms), a 30% increase.
- From 1970 to 2022, non-labor income grew from $126.2 million to $447.8 million (in real terms), a 255% increase.



- From 1970 to 2022, labor earnings accounted for 21% of growth and non-labor income for 79%.
- In 1970, non-labor income represented 30% of total personal income. By 2022 non-labor income represented 54% of total personal income.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Labor Earnings and Non-Labor Income

What do we measure on this page?

This page describes changes in labor earnings and non-labor sources of income.

Labor Earnings: Net earnings by place of residence, which is earnings by place of work (the sum of wage and salary disbursements, supplements to wages and salaries, and proprietors' income) less contributions for government social insurance, plus an adjustment to convert earnings by place of work to a place of residence basis.

Non-Labor Income: Dividends, interest, rent, and transfer payments (includes government retirement and disability insurance benefits, medical payments such as mainly Medicare and Medicaid, income maintenance benefits, unemployment insurance benefits, etc.). Non-labor income is reported by place of residence.

Labor earnings and non-labor income may not add to total personal income because of adjustments made by the Bureau of Economic Analysis to account for contributions for Social Security, cross-county commuting, and other factors.

Dividends, Interest, and Rent: Personal dividend income, personal interest income, and rental income of persons with capital consumption adjustments. Dividends, interest, and rent are sometimes referred to as "investment income" or "property income."

Age-Related Transfer Payments: Payments, including Social Security and Medicare, associated with older populations.

Hardship-Related Transfer Payments: Payments associated with poverty and welfare, including Medicaid and income maintenance.

Other Transfer Payments: Payments from veteran's benefits, education and training, Workers Compensation insurance, railroad retirement and disability, other government retirement and disability, and other receipts of individuals and nonprofits.

The EPS Non-Labor report provides a more detailed analysis of non-labor income and its components. The EPS Demographics report provides more information about the aging of the population and poverty. See https://headwaterseconomics.org/eps.

Why is it important?

In many locations, non-labor income is the largest source of personal income and also the fastest growing.[8] This is particularly the case in some rural areas and small cities. An aging population, growth in the stock market and investments, and a highly mobile population are some of the reasons behind the rapid growth in non-labor income.

Growth in non-labor income can indicate an attractive place to live and retire. The in-migration of people who bring investment and retirement income with them (verify from previous pages that in-migration is increasing) is associated with a high quality of life (for example, local recreation opportunities), good health care facilities, and affordable housing (important for those on a fixed income). Non-labor income can also be important to places with struggling economies, either as a source of income maintenance for the poor or as a more stable form of income in areas with declining industries and labor markets.

Socioeconomic Trends

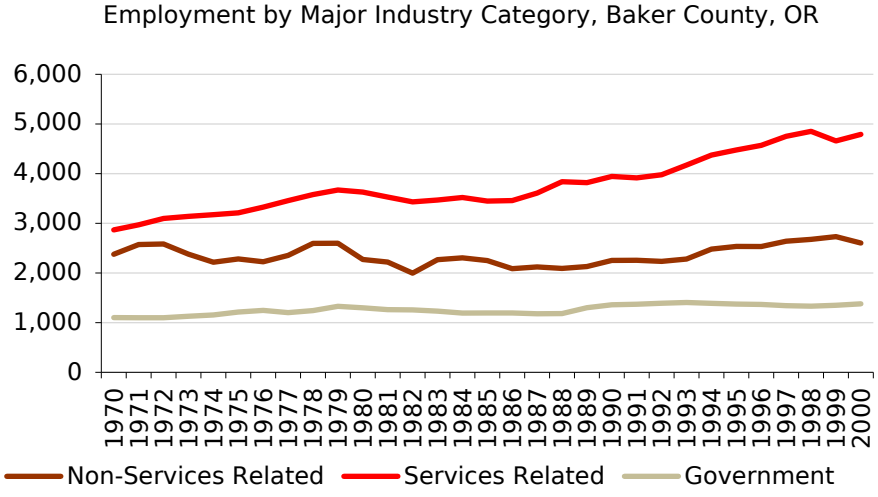
Baker County, OR

Employment by Industry (1970-2000)

	1970	1990	2000	Change 1990-2000
Total Employment (number of jobs)	6,347	7,557	8,828	1,271
Non-Services Related	2,377	2,253	~2,603	~350
Farm	1,185	950	998	48
Agricultural services, forestry, fishing & o	95	146	~221	~75
Mining (including fossil fuels)	55	121	~104	-~17
Construction	328	250	452	202
Manufacturing (incl. forest products)	714	786	828	42
Services Related	2,868	3,944	4,791	847
Transportation & public utilities	297	366	372	6
Wholesale trade	206	180	151	-29
Retail trade	1,123	1,312	1,536	224
Finance, insurance & real estate	280	411	603	192
Services	962	1,675	2,129	454
Government	1,102	1,360	1,379	19
Percent of Total				Percent Change 1990-2000
Total Employment				16.8%
Non-Services Related	37.5%	29.8%	~29.5%	~15.5%
Farm	18.7%	12.6%	11.3%	5.1%
Agricultural services, forestry, fishing & o	1.5%	1.9%	~2.5%	~51.4%
Mining (including fossil fuels)	0.9%	1.6%	~1.2%	-~14.0%
Construction	5.2%	3.3%	5.1%	80.8%
Manufacturing (incl. forest products)	11.2%	10.4%	9.4%	5.3%
Services Related	45.2%	52.2%	54.3%	21.5%
Transportation & public utilities	4.7%	4.8%	4.2%	1.6%
Wholesale trade	3.2%	2.4%	1.7%	-16.1%
Retail trade	17.7%	17.4%	17.4%	17.1%
Finance, insurance & real estate	4.4%	5.4%	6.8%	46.7%
Services	15.2%	22.2%	24.1%	27.1%
Government	17.4%	18.0%	15.6%	1.4%

All employment data are reported by *place of work*. Estimates for data that were not disclosed are indicated with tildes (~).

- From 1970 to 2000, jobs in non-services related industries grew from 2,377 to 2,603, a 10% increase.
- From 1970 to 2000, jobs in services related industries grew from 2,868 to 4,791, a 67% increase.
- From 1970 to 2000, jobs in government grew from 1,102 to 1,379, a 25% increase.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Employment by Industry (1970-2000)

What do we measure on this page?

This page describes historical employment change by industry. Industries are organized according to three major categories: non-services related, services related, and government. Employment includes wage and salary jobs and proprietors. The employment data are organized according to the Standard Industrial Classification (SIC) system and reported by place of work.

Non-Services Related: Employment in industries such as farming, mining, and manufacturing.

Services Related: Employment in industries such as retail trade, finance, insurance and real estate, and services.

The terms “non-services related” and “services related” are not terms used by the U.S. Department of Commerce. They are used in these pages to help organize the information into easy-to-understand categories.

Government: Federal, military, state, and local government employment, and government enterprise.

The SIC data end in 2000 because in 2001 the Bureau of Economic Analysis switched to organizing industry-level information according to the newer North American Industrial Classification System (NAICS). More recent employment trends, organized by NAICS, are shown in subsequent pages of this report.

It is not normally appropriate to put SIC and NAICS data in the same tables and graphs because of the difference in methods used to organize industry data. The SIC coding system organizes industries by the primary activity of the establishment. In NAICS, industries are organized according to the production process.[9] See the Data Sources and Methods section of this report for more information on the shift from SIC to NAICS.

Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps.[10] These values are indicated with tildes (~).

Why is it important?

Understanding which industries are responsible for most jobs and which sectors are growing or declining is key to grasping the type of economy that exists, how it has changed over time, and evolving competitive strengths.[11,12] Most new jobs created in the U.S. economy in the last 30 years have been in services-related sectors, a category that includes a wide variety of high- and low-wage occupations ranging from jobs in hotels and amusement parks to legal, health, business, and educational services. The section in this report titled "Wages by Industry" shows the difference in wages among various services related industries and compared to non-services related sectors.

In many small rural communities, government employment (e.g., the Forest Service and Bureau of Land Management) represents an important component of the economy. In others there have been important changes in employment in mining and fossil fuel energy development, manufacturing (which includes lumber and wood products), and construction.[13,14]

Socioeconomic Trends

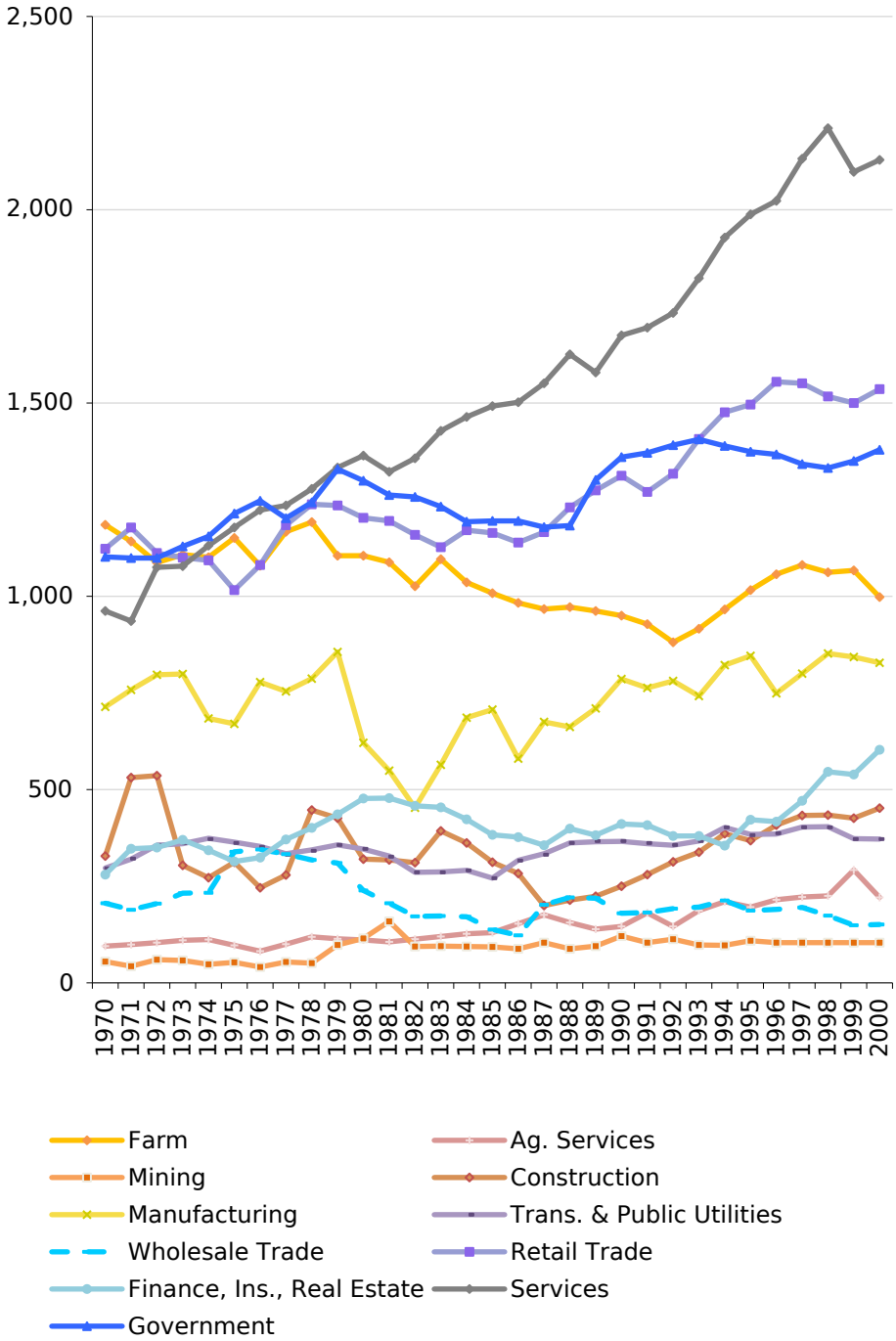
Baker County, OR

Employment by Industry (1970-2000)

Employment by Industry, Baker County, OR

- In 2000 the three industry sectors with the largest number of jobs were services (2,129 jobs), retail trade (1,536 jobs), and government (1,379 jobs).

- From 1970 to 2000, the three industry sectors that added the most new jobs were services (1,167 new jobs), retail trade (413 new jobs), and finance, insurance & real estate (323 new jobs).



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Why is it important?

Understanding which industries are responsible for most jobs and which sectors are growing or declining is key to grasping the type of economy that exists, how it has changed over time, and evolving competitive strengths.[11,12] Most new jobs created in the U.S. economy in the last 30 years have been in services-related sectors, a category that includes a wide variety of high- and low-wage occupations ranging from jobs in hotels and amusement parks to legal, health, business, and educational services. The section in this report titled "Wages by Industry" shows the difference in wages among various services related industries and compared to non-services related sectors.

In many small rural communities, government employment (e.g., the Forest Service and Bureau of Land Management) represents an important component of the economy. In others there have been important changes in employment in mining and fossil fuel energy development, manufacturing (which includes lumber and wood products), and construction.[13,14]

Socioeconomic Trends

Baker County, OR

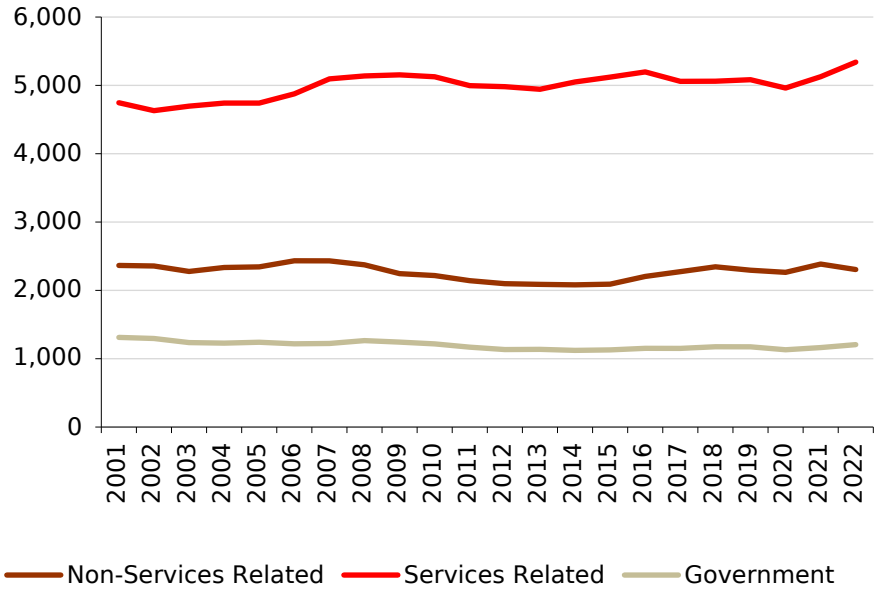
Employment by Industry (since 2000)

	2001	2010	2022	Change 2010-2022
Total Employment (number of jobs)	8,380	8,513	8,955	442
Non-services related	2,365	~2,217	~2,305	~88
Farm	990	906	831	-75
Forestry, fishing, & ag. services	211	~192	178	-~14
Mining (including fossil fuels)	111	~111	~108	-~3
Construction	380	432	505	73
Manufacturing	673	576	683	107
Services related	~4,746	~5,126	~5,340	~214
Utilities	63	75	124	49
Wholesale trade	133	114	86	-28
Retail trade	1,027	998	1,155	157
Transportation and warehousing	230	246	220	-26
Information	102	95	76	-19
Finance and insurance	267	270	178	-92
Real estate and rental and leasing	311	390	523	133
Professional and technical services	302	313	370	57
Management of companies	32	53	38	-15
Administrative and waste services	176	208	286	78
Educational services	~34	49	~25	-~24
Health care and social assistance	~781	1,020	~1,041	~21
Arts, entertainment, and recreation	82	~105	96	-~9
Accommodation and food services	664	~659	645	-~14
Other services, except public admin.	542	531	477	-54
Government	1,312	1,217	1,206	-11

All employment data are reported by *place of work*. Estimates for data that were not disclosed are indicated with tildes (~).

- From 2001 to 2022, jobs in non-services related industries shrank from 2,365 to 2,305, a 3% decrease.
- From 2001 to 2022, jobs in services related industries grew from 4,746 to 5,340, a 13% increase.
- From 2001 to 2022, jobs in government shrank from 1,312 to 1,206, a 8% decrease.

Employment by Major Industry Category, Baker County, OR



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

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Why is it important?

Recent employment trends organized by NAICS offer more detail than the previous SIC system, particularly with regard to services-related industries. This is especially useful since in many places the majority of new job growth in recent years has been in services-related industries.

The services-related sector encompasses a wide variety of high- and low-wage occupations ranging from jobs in accommodation and food services to professional and technical services. The section in this report titled "Wages by Industry" shows the difference in wages among various services related industries and compared to non-services related sectors.

Socioeconomic Trends

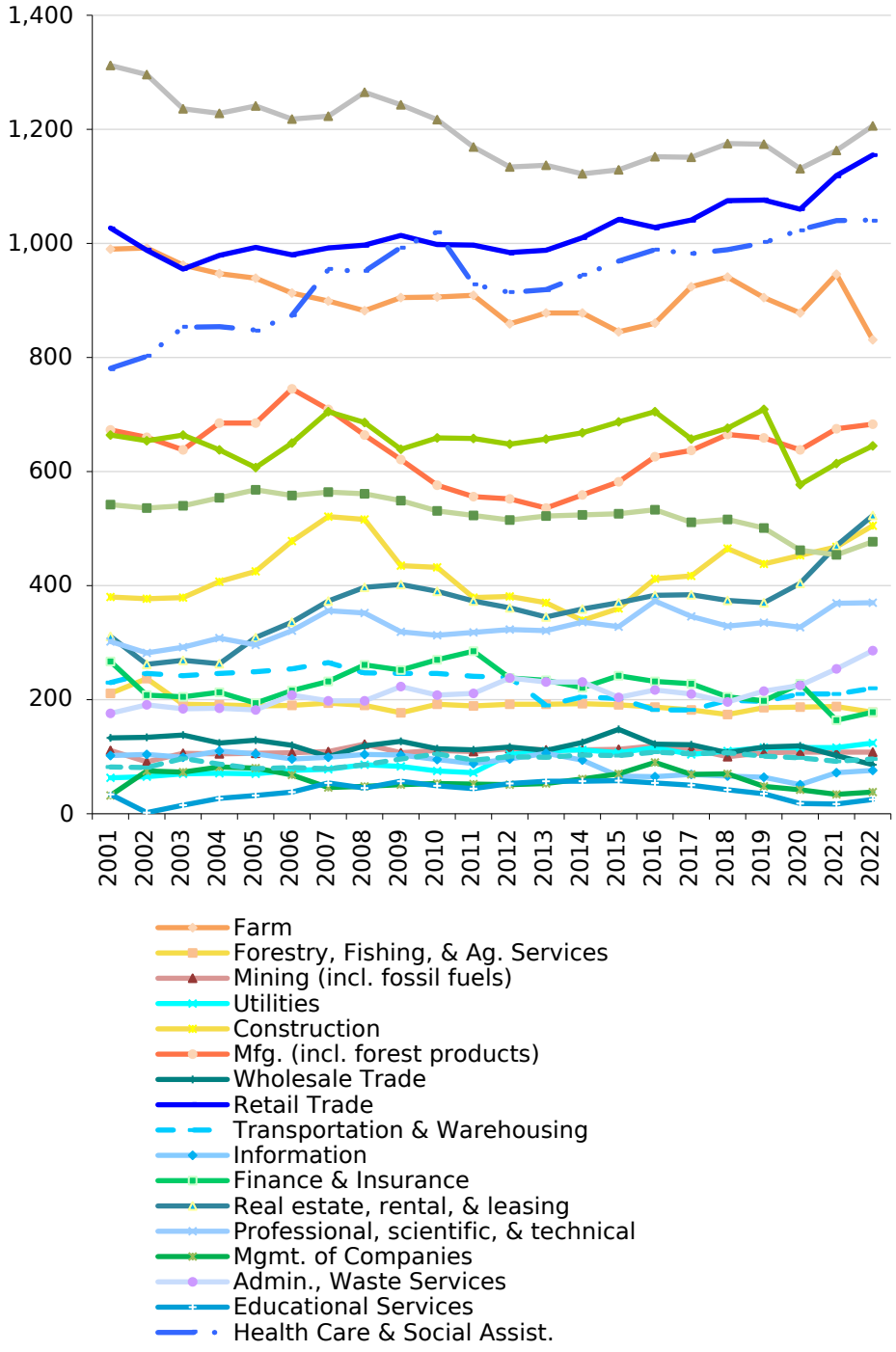
Baker County, OR

Employment by Industry (since 2000)

Employment by Industry, Baker County, OR

- In 2022 the three industry sectors with the largest number of jobs were government (1,206 jobs), retail trade (1,155 jobs), and health care and social assistance (1,041 jobs).

- From 2001 to 2022, the three industry sectors that added the most new jobs were health care and social assistance (260 new jobs), real estate and rental and leasing (212 new jobs), and retail trade (128 new jobs).



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Socioeconomic Trends

Baker County, OR

Earnings by Industry (1970-2000)

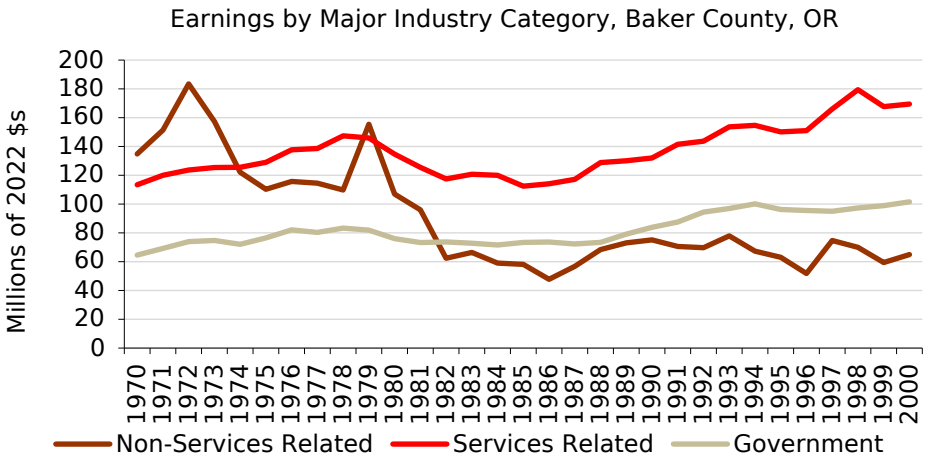
Labor earnings in thousands of 2022 $s

	1970	1990	2000	Change 1990-2000
Labor Earnings	$312,808	$291,001	$337,216	$46,215
Non-Services Related	$134,811	$75,125	~$64,929	-~$10,196
Farm	$49,740	$5,618	$3,063	-$2,555
Agricultural services, forestry, fishing	$2,328	$3,286	~$4,339	~$1,053
Mining (including fossil fuels)	$2,486	$4,749	~$3,048	-~$1,701
Construction	$29,507	$13,742	$15,697	$1,955
Manufacturing (incl. forest products)	$50,750	$47,730	$38,781	-$8,949
Services Related	$113,417	$132,008	$169,446	$37,438
Transportation & public utilities	$19,684	$25,128	$32,148	$7,020
Wholesale trade	$11,751	$8,239	$6,371	-$1,868
Retail trade	$38,765	$38,644	$41,612	$2,968
Finance, insurance & real estate	$9,303	$8,360	$19,549	$11,189
Services	$33,914	$51,636	$69,766	$18,130
Government	$64,580	$83,868	$101,541	$17,673

Percent of Total*				Percent Change 1990-2000
Labor Earnings				15.9%
Non-Services Related	43.1%	25.8%	~19.3%	-~13.6%
Farm	15.9%	1.9%	0.9%	-45.5%
Agricultural services, forestry, fishing	0.7%	1.1%	~1.3%	~32.0%
Mining (including fossil fuels)	0.8%	1.6%	~0.9%	-~35.8%
Construction	9.4%	4.7%	4.7%	14.2%
Manufacturing (incl. forest products)	16.2%	16.4%	11.5%	-18.7%
Services Related	36.3%	45.4%	50.4%	28.4%
Transportation & public utilities	6.3%	8.6%	9.6%	27.9%
Wholesale trade	3.8%	2.8%	1.9%	-22.7%
Retail trade	12.4%	13.3%	12.4%	7.7%
Finance, insurance & real estate	3.0%	2.9%	5.8%	133.8%
Services	10.8%	17.7%	20.8%	35.1%
Government	20.6%	28.8%	30.2%	21.1%

All earnings data are reported by *place of work*. Estimates for data that were not disclosed are indicated with tildes (~).
* Total is considered to be the sum of all reported or estimated income with positive values from the earnings by industry table.

- From 1970 to 2000, earnings from non-services shrank from $134.8M to $64.9M (in real terms), a 52% decrease.
- From 1970 to 2000, earnings from services grew from $113.4M to $169.4M (in real terms), a 49% increase.
- From 1970 to 2000, earnings from government grew from $64.6M to $101.5M (in real terms), a 57% increase.



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Socioeconomic Trends

Baker County, OR

Employment by Industry (1970-2000)

What do we measure on this page?

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Why is it important?

Historical changes in labor earnings by industry show how the structure of the local economy has changed over time. Some of the trends are caused by national and international circumstances while other trends may reflect local conditions. The shifting sources of labor earnings can point to evolving weaknesses and strengths in the local or regional economy.

Most new jobs created in the U.S. economy in the last several decades have been in services-related sectors, a category that includes a wide variety of high- and low-wage occupations ranging from jobs in hotels and amusement parks to legal, health, business, and educational services. The section in this report titled "Wages by Industry" shows the difference in wages among various services related industries and compared to non-services related sectors.

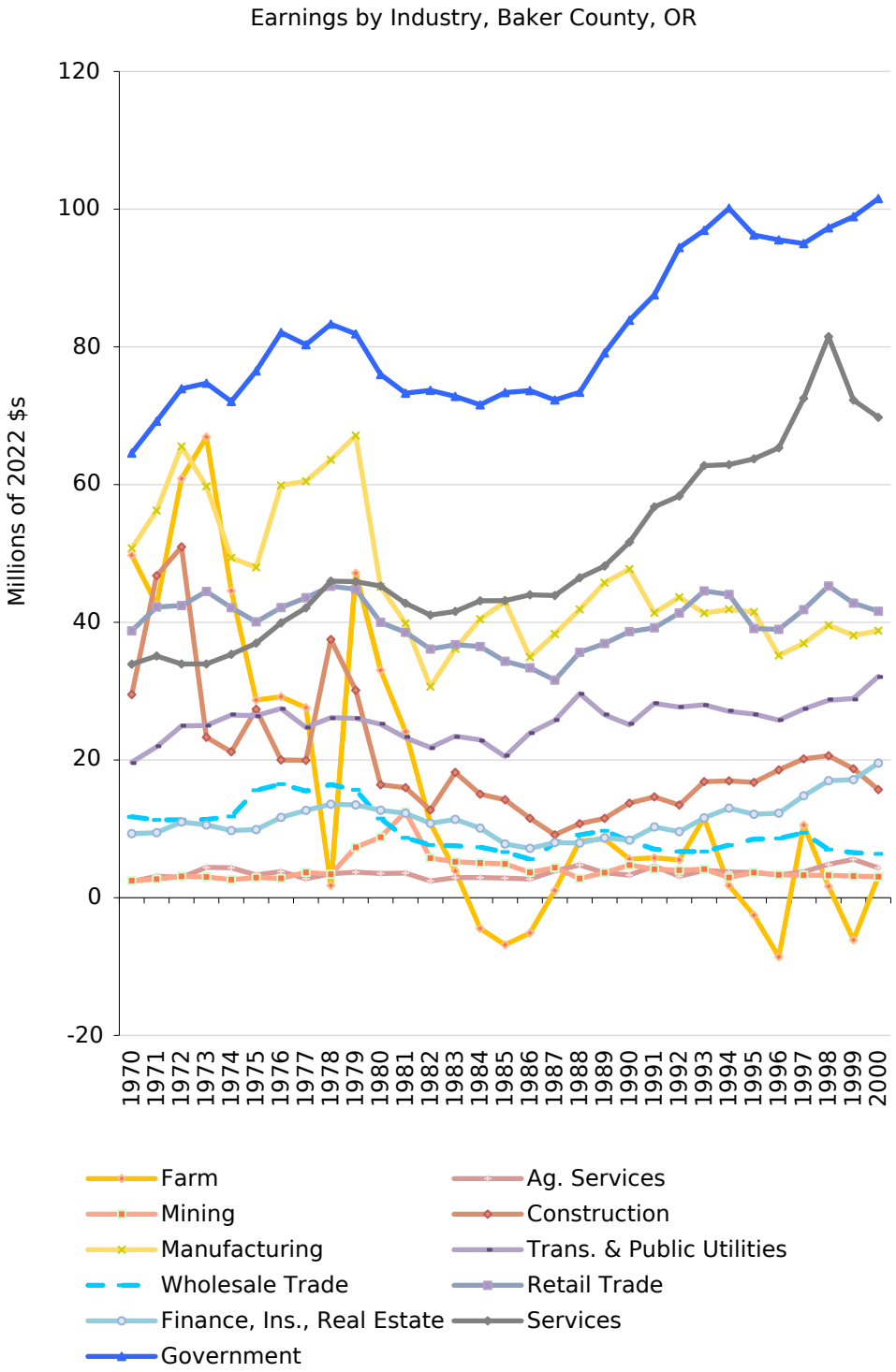
In many communities there have been important changes in employment in non-services, particularly mining and fossil fuel energy development, manufacturing (which includes lumber and wood products), and construction.[13]

In rural communities, government employment (e.g., the Forest Service and Bureau of Land Management) often represents an important component of the economy.

Earnings by Industry (1970-2000)

- In 2000 the three industry sectors with the largest earnings were government ($101.5 million), services ($69.8 million), and retail trade ($41.6 million).

- From 1970 to 2000, the three industry sectors that added the most earnings were government ($37.0 million), services ($35.9 million), and transportation & public utilities ($12.5 million).



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In rural communities, government employment (e.g., the Forest Service and Bureau of Land Management) often represents an important component of the economy.

Socioeconomic Trends

Baker County, OR

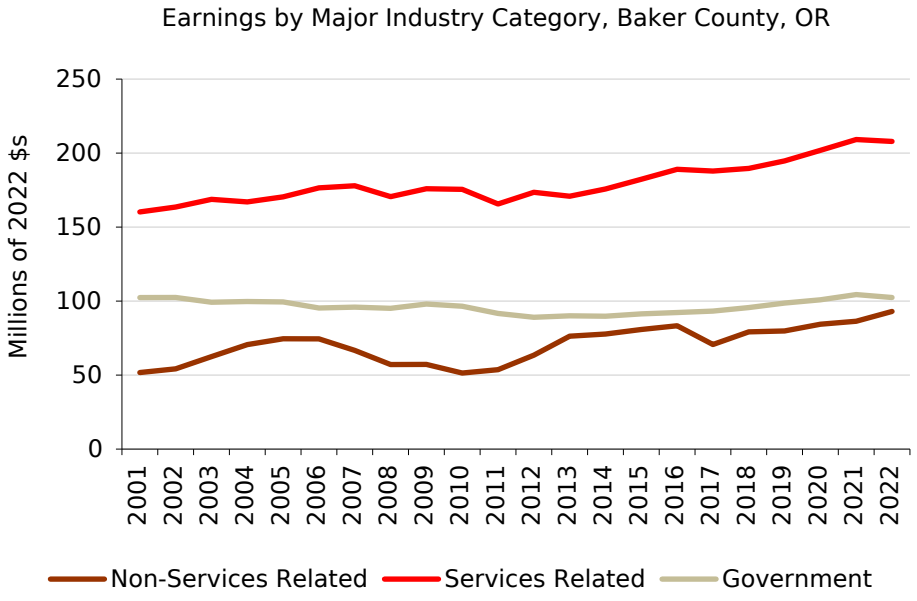
Earnings by Industry (since 2000)

Labor earnings in thousands of 2022 $s

	2001	2010	2022	Change 2010-2022
Labor Earnings	$309,574	$322,335	$418,079	$95,744
Non-services related	$51,729	~$51,393	~$93,004	~$41,611
Farm	-$4,410	-$5,964	$22,905	$28,869
Forestry, fishing, & ag. services	$4,313	~$3,978	$3,170	-~$808
Mining (including fossil fuels)	$2,817	~$1,641	~$1,304	-~$337
Construction	$12,388	$16,174	$20,899	$4,725
Manufacturing	$36,622	$35,564	$44,726	$9,162
Services related	~$160,250	~$175,507	~$207,881	~$32,374
Utilities	$7,562	$9,815	$17,181	$7,366
Wholesale trade	$5,394	$4,493	$5,151	$658
Retail trade	$29,008	$27,804	$36,387	$8,583
Transportation and warehousing	$10,346	$12,999	$14,376	$1,377
Information	$4,618	$6,091	$3,374	-$2,717
Finance and insurance	$11,202	$8,663	$5,980	-$2,683
Real estate and rental and leasing	$4,666	$3,072	$10,652	$7,580
Professional and technical services	$10,771	$11,649	$14,609	$2,960
Management of companies	$2,299	$2,084	-$1,262	-$3,346
Administrative and waste services	$4,347	$4,650	$14,676	$10,026
Educational services	~$972	$1,828	~$2,089	~$261
Health care and social assistance	~$39,115	$50,200	~$50,937	~$737
Arts, entertainment, and recreation	$673	~$94	$2,348	~$2,254
Accommodation and food services	$14,074	~$14,158	$17,511	~$3,353
Other services, except public admin.	$15,201	$17,908	$13,872	-$4,036
Government	$102,384	$96,534	$102,420	$5,886

All earnings data are reported by *place of work*. Estimates for data that were not disclosed are indicated with tildes (~).
* Total is considered to be the sum of all reported or estimated income with positive values from the earnings by industry table.

- From 2001 to 2022, earnings in non-services related industries grew from $51.7 million to $93.0 million, a 80% increase.
- From 2001 to 2022, earnings in services related industries grew from $160.3 million to $207.9 million, a 30% increase.
- From 2001 to 2022, earnings in government grew from $102.4 million to $102.4 million, a <1% increase.



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Why is it important?

It can be useful to ask whether the historical employment trends shown earlier in this report continue, and what factors are driving a shift in industry makeup and competitive position.

In many places the majority of growth in earnings in recent years has been in services-related industries, which include a wide variety of high- and low-wage occupations ranging from jobs in hotels and amusement parks to legal, health, business, and educational services. The section in this report titled "Wages by Industry" shows the difference in wages among various services related industries and compared to non-services related sectors.

Earnings by Industry (since 2000)

- In 2022 the three industry sectors with the largest earnings were government ($102.4 million), health care and social assistance ($50.9 million), and retail trade ($36.4 million).

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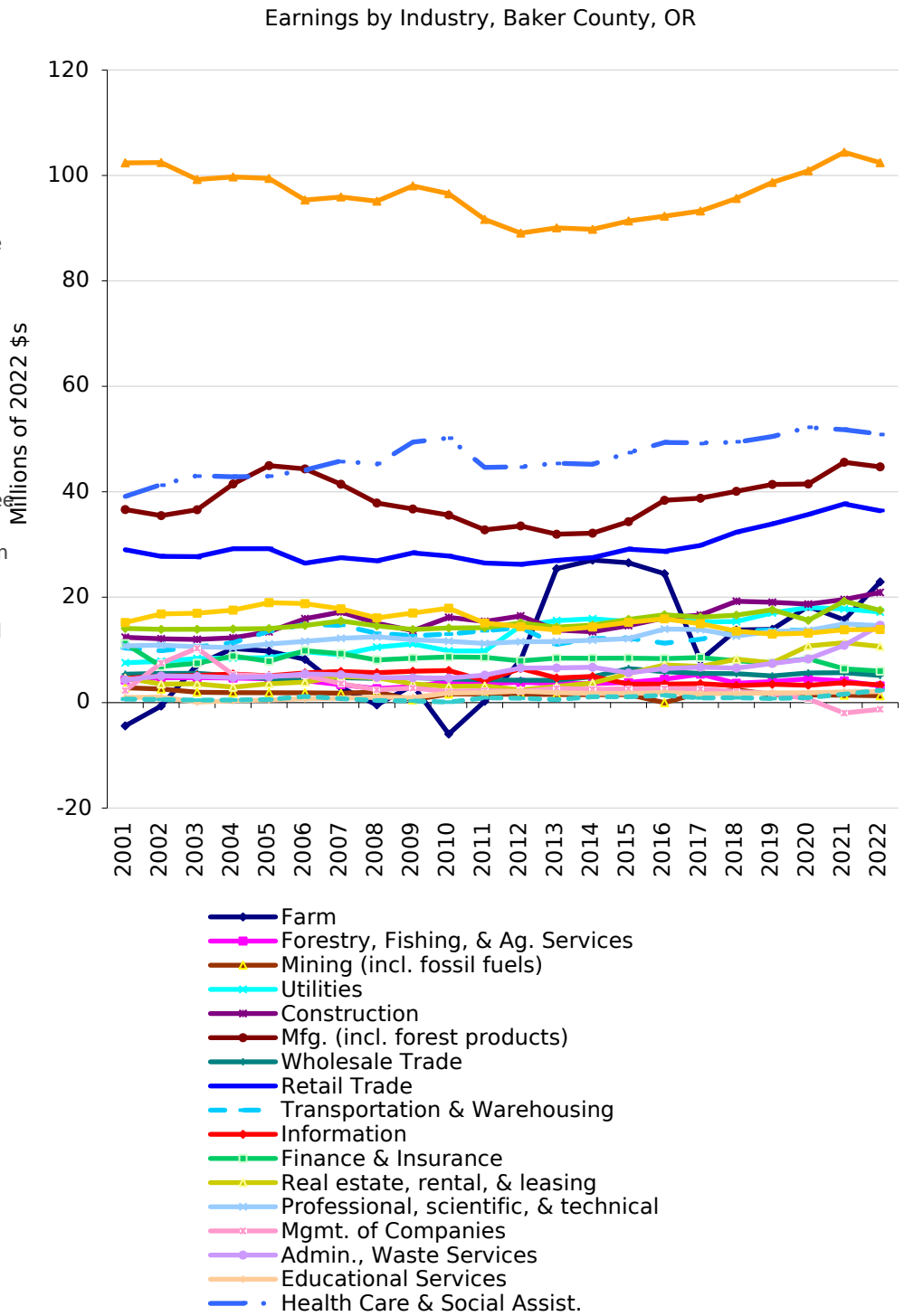

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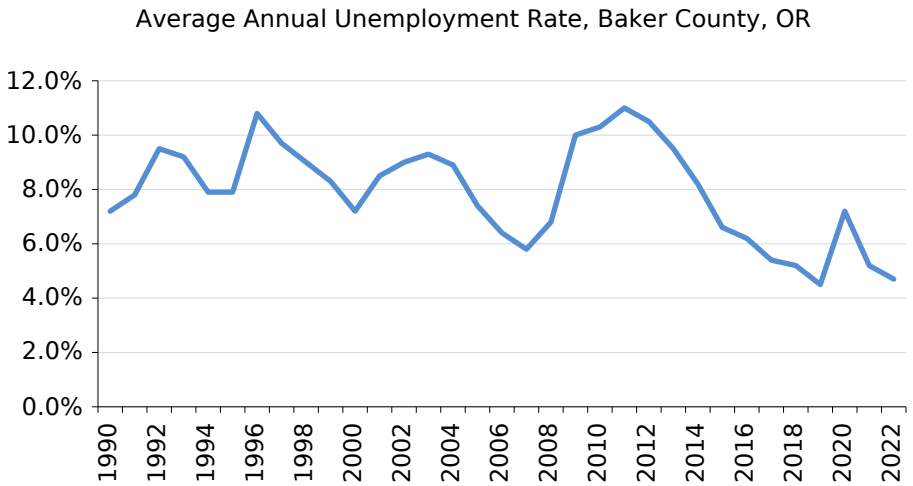
Socioeconomic Trends

Baker County, OR

Unemployment

	1990	2000	2010	2022	Change 2010-2022
Average Annual Unemployment Rate	7.2%	7.2%	10.3%	4.7%	-5.6%

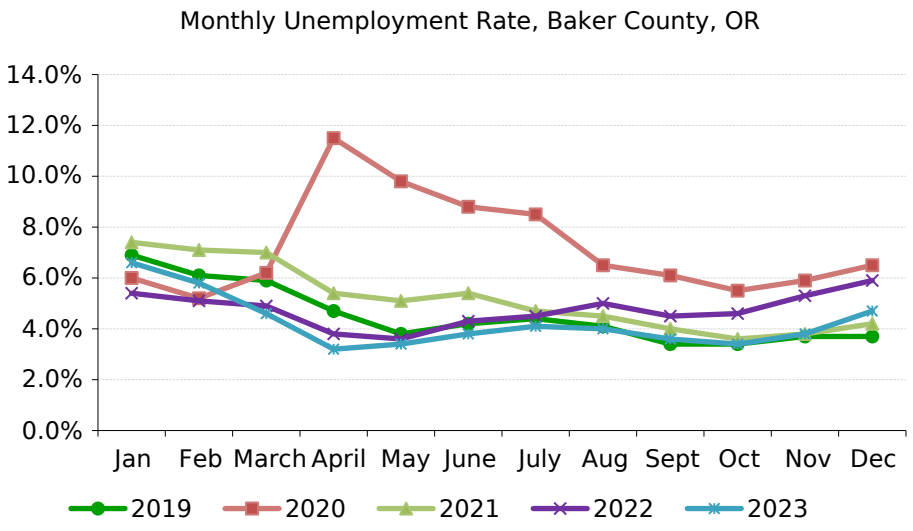
- Since 1990, the annual unemployment rate ranged from a low of 4.5% in 2019 to a high of 17.3% in 1983.



Monthly Unemployment Rate	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2019	6.9%	6.1%	5.9%	4.7%	3.8%	4.2%	4.4%	4.1%	3.4%	3.4%	3.7%	3.7%
2020	6.0%	5.2%	6.2%	11.5%	9.8%	8.8%	8.5%	6.5%	6.1%	5.5%	5.9%	6.5%
2021	7.4%	7.1%	7.0%	5.4%	5.1%	5.4%	4.7%	4.5%	4.0%	3.6%	3.8%	4.2%
2022	5.4%	5.1%	4.9%	3.8%	3.6%	4.3%	4.5%	5.0%	4.5%	4.6%	5.3%	5.9%
2023	6.6%	5.8%	4.6%	3.2%	3.4%	3.8%	4.1%	4.0%	3.6%	3.4%	3.8%	4.7%

- The most recent monthly data is **preliminary** in the table and the chart; as reported by BLS.

- The lowest monthly unemployment rate was April of 2023. The highest monthly unemployment rate was April of 2020.



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Unemployment

What do we measure on this page?

This page describes the average annual unemployment rate and the seasonality of the unemployment rate over time.

The Average Annual Unemployment Rate graph shows the rate of unemployment since 1990. The Monthly Unemployment Rate graph shows the rate of unemployment for each month over the last five years. Note that unemployment figures most often reported are seasonally adjusted.[15] However, the monthly unemployment data shown on this page are not seasonally adjusted so that fluctuations in employment throughout the year can be displayed.

Unemployment Rate: The number of people who are jobless, looking for jobs, and available for work, divided by the labor force.[16]

Data begin in 1990 because prior to 1990 the Bureau of Labor Statistics used a different method to calculate the unemployment rate.

Why is it important?

The rate of unemployment is an important indicator of economic well-being. This figure can go up during national recessions and/or more localized downturns. Unemployment may vary significantly by season.

It is important to know how the unemployment rate has changed over time, whether the rate is higher or lower during certain periods of the year, and whether this seasonality of unemployment has changed over time. Places that are heavily dependent on the tourism industry, for example, may show higher rates of unemployment during spring and fall "shoulder seasons." Places that rely heavily on the construction industry, for example, may have lower unemployment rates during the non-winter months.[17]

Communities with diverse economies tend to have more stable unemployment rates. This is particularly true of places that are able to attract new residents, retain manufacturing, and support a high-tech economy.[18]

Public land agencies sometimes provide seasonal employment and may have an effect on the local rate of unemployment.

Socioeconomic Trends

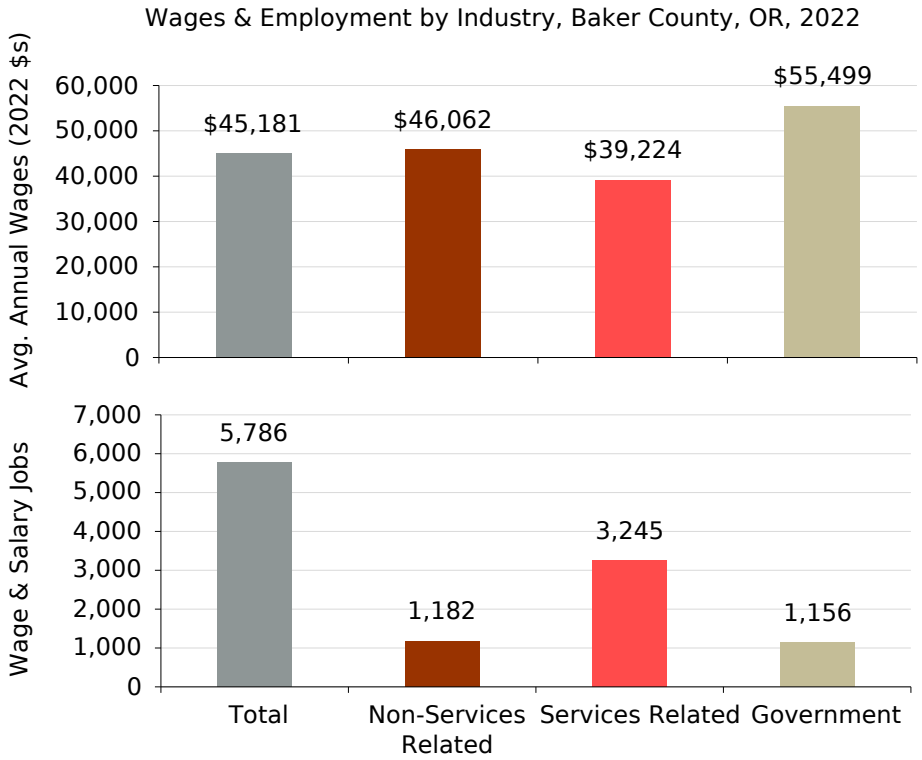
Baker County, OR

Wages by Industry

Employment and Wages in 2022	Wage & Salary Employment	% of Total Employment	Avg. Annual Wages (2022 $s)	% Above or Below Avg.
Total	5,786		$45,181	
Private	4,630	80.0%	$42,605	-5.7%
Non-Services Related	1,182	20.4%	$46,062	1.9%
Natural Resources and Mining	290	5.0%	$34,715	-23.2%
Agriculture, forestry, fishing & hunting	274	4.7%	$32,070	-29.0%
Mining (incl. fossil fuels)	16	0.3%	$80,009	77.1%
Construction	290	5.0%	$42,063	-6.9%
Manufacturing (Incl. forest products)	602	10.4%	$53,455	18.3%
Services Related	3,245	56.1%	$39,224	-13.2%
Trade, Transportation, and Utilities	1,124	19.4%	$40,205	-11.0%
Information	49	0.8%	$62,296	37.9%
Financial Activities	120	2.1%	$47,018	4.1%
Professional and Business Services	366	6.3%	$51,367	13.7%
Education and Health Services	793	13.7%	$46,434	2.8%
Leisure and Hospitality	577	10.0%	$21,471	-52.5%
Other Services	207	3.6%	$24,292	-46.2%
Unclassified	9	0.2%	$39,661	-12.2%
Government	1,156	20.0%	$55,499	22.8%
Federal Government	200	3.5%	$73,211	62.0%
State Government	220	3.8%	$74,505	64.9%
Local Government	736	12.7%	$45,004	-0.4%

- In 2022 government jobs paid the highest wages ($55,499) and services related jobs paid the lowest ($39,224).

- In 2022 trade, transportation, and utilities jobs employed the largest number of people (3,245), and federal government employed the smallest (1,156 jobs).



Data Sources: U.S. Department of Labor. 2023. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Wages by Industry

What do we measure on this page?

This page describes employment and average annual wages by industry. It is sometimes the case that industries that pay well employ few people. Use the table on this page to understand how wages relate to the share of employment contributed by each industry.

Average Annual Wages: Total annual pay divided by total employment.

The data on this page are from the Bureau of Labor Statistics (BLS), which is the most reliable source of national data on average annual wages.[19, 20, 21] However, unlike the Bureau of Economic Analysis data used in other sections of this report, these data do not include proprietors or the value of benefits and are summarized into slightly different industry categories. As reported by BLS, wages include gross wages and salaries, bonuses, stock options, tips and other gratuities, and the value of meals and lodging.

The table compares level of employment and wages for all sectors of the economy and shows (in the far-right column) whether the sector's wages are above or below the average wage for all industries.

Depending on the areas selected, some data may not be available due to disclosure restrictions.

“Average annual wages” shown on this page is not the same as “average earnings per job” shown earlier in this report. Average annual wages are calculated from BLS data, which do not include proprietors, while earnings per job are calculated from Bureau of Economic Analysis data, which include proprietors.

Why is it important?

It is sometimes assumed, particularly in rural areas, that the only high-wage jobs are in manufacturing and natural resource industries (e.g., timber, fossil fuel energy development, and mining). While these jobs often provide high average wages, some services-related industries also offer high wages (e.g., information, financial activities, and professional and business services).

Nearly all new jobs created since 1990 have been in services-related industries, but they are not equally distributed across the country, and not all areas are able to attract and retain the relatively high-wage service-related jobs. The elements required to attract and keep high-wage service-related workers may include access to reliable transportation including airports, amenities, recreation opportunities, a trained workforce, and good schools.[22, 23]

In some areas, the highest-paying jobs are in the public sector. During recessions, government jobs may serve as an economic buffer against declining employment and earnings in the private sector.

Socioeconomic Trends

Baker County, OR

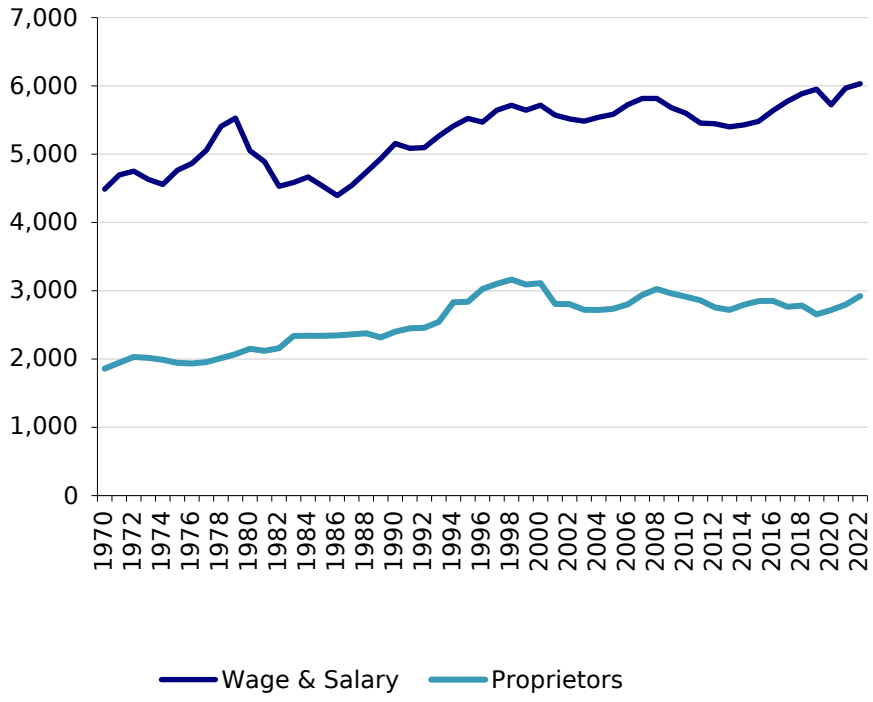
Proprietors (self-employed)

	1970	2000	2022	Change 2000-2022
Total Employment	6,347	8,828	8,955	127
Wage and salary jobs	4,488	5,717	6,032	315
Number of proprietors	1,859	3,111	2,923	-188
Percent of Total				% Change 2000-2022
Total Employment				1.4%
Wage and salary jobs	70.7%	64.8%	67.4%	5.5%
Number of proprietors	29.3%	35.2%	32.6%	-6.0%

All employment data in the table above are reported by *place of work* and include both full-time and part-time workers.

- From 1970 to 2022, wage and salary employment (people who work for someone else) grew from 4,488 to 6,032, a 34% increase.
- From 1970 to 2022, proprietors (the self-employed) grew from 1,859 to 2,923, a 57% increase.

Components of Employment, Baker County, OR



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Proprietors (self-employed)

What do we measure on this page?

This page describes the changes in two components of employment: wage and salary employment, and proprietors.

Wage and Salary: This is a measure of the average annual number of full-time and part-time jobs by place of work. All jobs for which wages and salaries are paid are counted. Full-time and part-time jobs are counted with equal weight.[24]

Proprietors: This term includes the self-employed in nonfarm and farm sectors by place of work. Nonfarm self-employment consists of the number of sole proprietorships and the number of individual business partners not assumed to be limited partners. Farm self-employment is defined as the number of non-corporate farm operators, consisting of sole proprietors and partners.[25]

For more detailed information about farm employment and earnings, create an EPS Agriculture report at https://headwaterseconomics.org/eps.

Why is it important?

A high level of growth in proprietors' employment could be interpreted as a sign of entrepreneurial activity, which is a positive indicator of economic health.[26] However, in some areas and particularly in remote rural areas, it is possible that a high proportion of self-employed is an indication that few jobs are available. People may work for themselves because it is the only alternative or they may work for themselves in addition to holding a wage and salary job.

One way to see whether growth and a high level of proprietors' employment is a positive sign for the local economy is to look at the long-term trends in proprietors' personal income. When proprietors' employment and real personal income are both rising, this is a healthy indicator of entrepreneurial activity. On the other hand, rising proprietors' employment and falling real personal income can be a sign of economic stress. The following section of this report examines this relationship.

Socioeconomic Trends

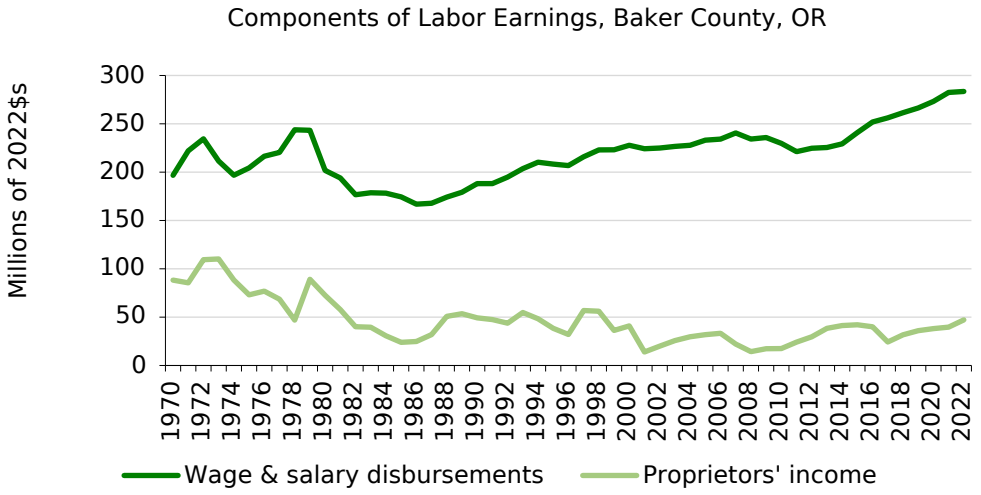
Baker County, OR

Wages and Proprietors' Income

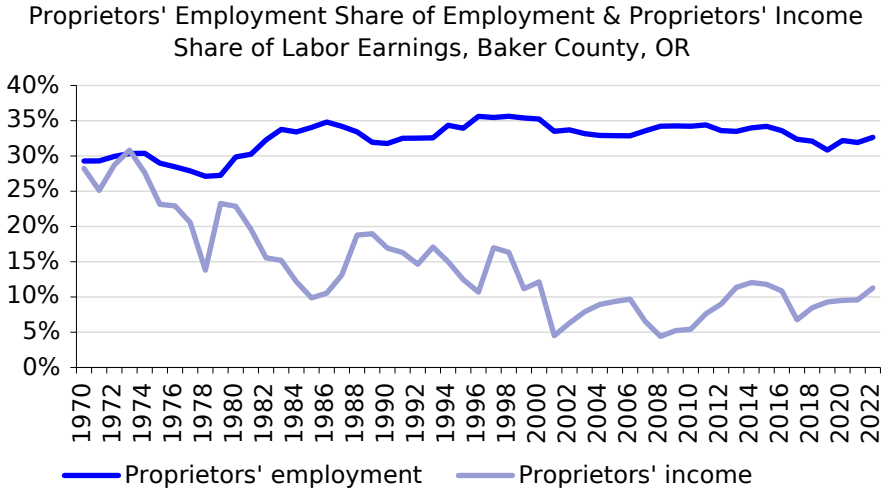
	1970	2000	2022	Change 2000-2022
Earnings by place of work	312,808	337,216	418,079	80,863
Wage & salary disbursements	196,739	227,782	283,470	55,688
Supplements to wage & salary	27,774	68,499	87,450	18,951
Proprietors' income	88,294	40,936	47,159	6,223
Percent of Total				% Change 2000-2022
Earnings by place of work				24.0%
Wage & salary disbursements	62.9%	67.5%	67.8%	24.4%
Supplements to wage & salary	8.9%	20.3%	20.9%	27.7%
Proprietors' income	28.2%	12.1%	11.3%	15.2%

All income data in the table above are reported by *place of work*, which is different than earnings by *place of residence* shown on the following page of this report.

- From 1970 to 2022, labor earnings from wage and salary employment grew from $196.7 million to $283.5 million (in real terms), a 44% increase.
- From 1970 to 2022, labor earnings from proprietors' employment shrank from $88.3 million to $47.2 million (in real terms), a 47% decrease.



- In 1970, proprietors represented 29% of total employment. By 2022, proprietors represented 33% of total employment.
- In 1970, proprietors represented 28% of total labor earnings. By 2022, proprietors represented 11% of total labor earnings.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Wages and Proprietors' Income

What do we measure on this page?

This page describes the components of labor earnings (in real terms): income from wage and salary, and proprietors' employment. It also looks more closely at proprietors, comparing long-term trends in proprietors' employment and personal income.

Earnings by Place of Work: This represents net earnings by place of work.

Wage and Salary Disbursements: This is a measure of the average annual number of full-time and part-time jobs in each area by place of work. All jobs for which wages and salaries are paid are counted. Full-time and part-time jobs are counted with equal weight.

Proprietors' Income: This term includes the self-employed in nonfarm and farm sectors. Nonfarm self-employment consists of the number of sole proprietorships and the number of individual business partners not assumed to be limited partners. Farm self-employment is defined as the number of non-corporate farm operators, consisting of sole proprietors and partners.

For more detailed information about farm employment and earnings, create an EPS Agriculture report at https://headwaterseconomics.org/eps.

Why is it important?

The table and figures can be used to compare the relative importance, and change in importance, of wage and salary jobs and proprietors as a source of employment and earnings.

Rapid growth and/or high proportions of proprietors' employment and income can be a sign of a healthy economy that is attracting entrepreneurs and stimulating business development, especially when paired with population growth and low unemployment. However, if labor earnings are flat or declining, high levels of proprietors may indicate a lack of opportunity.

Socioeconomic Trends

Baker County, OR

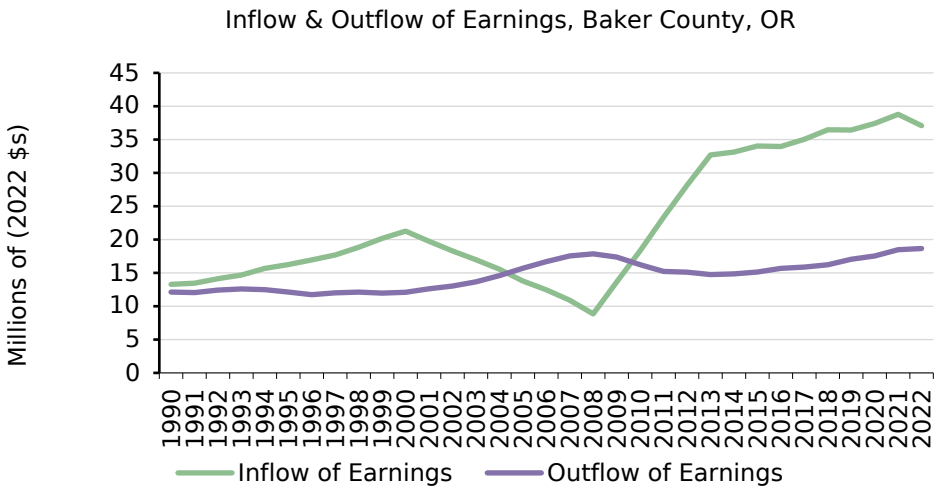
Commuting Patterns

Personal income in thousands of 2022 $s

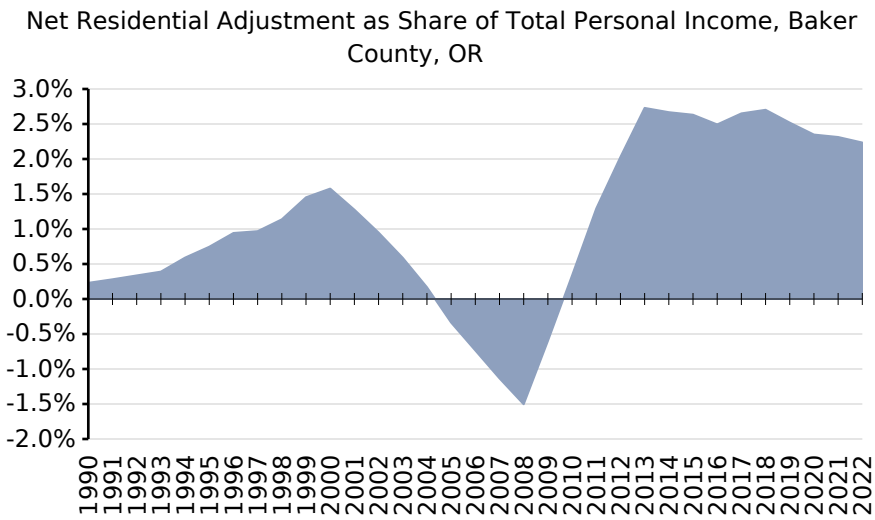
	1990	2010	2022	Change 2010-2022
Total Personal Income	500,855	621,059	824,298	203,239
Cross-County Commuting Flows				
Inflow of Earnings	13,281	18,322	37,081	18,759
Outflow of Earnings	12,125	16,230	18,657	2,427
Net Residential Adjustment (In - Outflow)	1,156	2,092	18,424	16,332
Percent of Total				% Change 2010-2022
Net Residential Adjustment Share of Total Personal Income	0.2%	0.3%	2.2%	1.9%

Data are only available at the county level (i.e., this page will be blank for aggregated geographies, states, and the U.S.). Total personal income is reported by *place of residence*.

- From 1990 to 2022 inflow of earnings grew from $13.3 million to $37.1 million (in real terms), a 179% increase.
- From 1990 to 2022 outflow of earnings grew from $12.1 million to $18.7 million (in real terms), a 54% increase.



- From 1990 to 2022, net residential adjustment (inflow - outflow) changed from .2 to 2.2 percent of total personal income.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Socioeconomic Trends

Baker County, OR

Commuting Patterns

What do we measure on this page?

This page describes the flow of earnings into the county by residents who work in neighboring counties ("inflow" of earnings because they bring money home); the flow of earnings by residents from neighboring counties who commute into the county for work ("outflow" of earnings because they take their earnings with them); and the difference between the two ("net residential adjustment"). [19, 20 , 21]

If net residential adjustment is positive (inflow exceeds outflow), it means county residents commute outside the county for work and bring back more personal income than leaves the county in net terms. If net residential adjustment is negative (outflow exceeds inflow), it means the economy of the county attracts workers from nearby counties and loses more personal income than it brings into the county in net terms.

Inflow of Earnings: The gross annual earnings of in-commuters (i.e., people who work out of the county and bring money home).

Outflow of Earnings: The gross annual earnings of out-commuters (i.e., people who work in the county but live elsewhere and take their earnings with them).

Net Residence Adjustment: The net inflow of labor earnings of inter-area commuters.[22, 23]

Note: Data are only available at the county level, and begin in 1990 because that is the year the Bureau of Economic Analysis began reporting these data.

Why is it important?

One indicator of economic health for a county is whether it is able to attract workers from nearby counties. This could be the case if a county has a surplus of jobs that attract workers from adjacent counties and would be indicated by a negative net residential adjustment. Another possibility is that expensive housing in the county has driven some workers to live in relatively more affordable neighboring counties that have become "bedroom communities."

Alternatively, it is possible that a county with a positive net residential adjustment is a more desirable place to live (people are willing to commute and/or telecommute to work in order to live there for quality of life reasons). Commuting and telecommuting workers may also contribute to the economy by spending their money in the local area (essentially exporting work and importing wages).

Long-term trends in inflow, outflow, and net residential adjustment help to describe the role that the county's economy has played over time in a multi-county area. For example, a net residential adjustment that was positive but today is negative indicates that county residents used to have to commute to neighboring counties for work but today the reverse is true and the county attracts workers from neighboring counties.

If net residential adjustment is a large share of earnings (e.g., 10% or higher), it may indicate that the appropriate unit of analysis is a multi-county area that encompasses the entire labor market.

Socioeconomic Trends

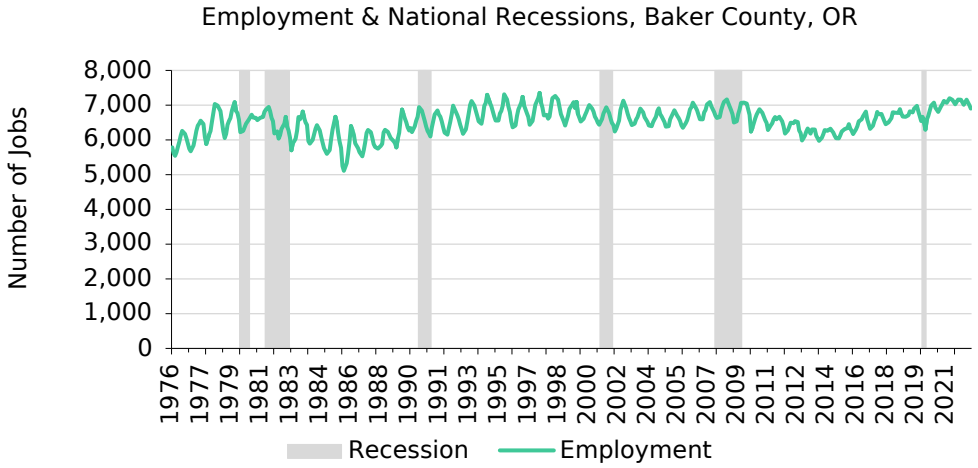
Baker County, OR

Employment During National Recessions

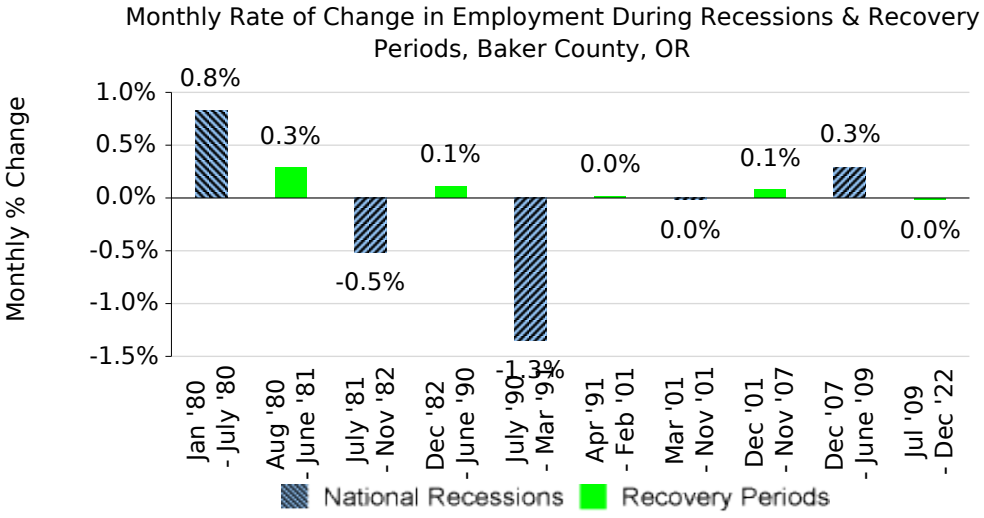
National Recessions, 1976-2022	Jan '80 - July '80	July '81 - Nov '82	July '90 - Mar '91	Mar '01 - Nov '01	Dec '07 - June '09
Employment Change (Net Jobs)	362	-599	-843	-8	369
Employment Change (Monthly % Change)	0.8%	-0.5%	-1.3%	0.0%	0.3%

Recovery from National Recessions, 1976-2022	Aug '80 - June '81	Dec '82 - June '90	Apr '91 - Feb '01	Dec '01 - Nov '07	Jul '09 - Dec '22
Employment Change (Net Jobs)	210	596	81	376	-208
Employment Change (Monthly % Change)	0.3%	0.1%	0.0%	0.1%	0.0%

- From December of 1976 to December of 2022, employment grew from 6,069 to 6,902 jobs, a 14% increase.



- In the recovery period (Dec '82-Jun '90) following the 1981-1982 recession, employment grew by 596 jobs, a 0.1% monthly increase.



Blue vertical bars in the figures above represent the last five recession periods: January 1980 to July 1980; July 1981 to November 1982; July 1990 to March 1991; March 2001 to November 2001; and December 2007 to June 2009. The green columns in the figure above represent the intervening recovery periods.

Data Sources: U.S. Department of Labor. 2023. Bureau of Labor Statistics, Local Area Unemployment Statistics, Washington, D.C.; National Bureau of Economic Research. 2009. U.S. Business Cycle Expansions and Contractions, Cambridge, MA, reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Employment During National Recessions

What do we measure on this page?

This page describes long-term trends in employment during national recessions and recovery periods. [32, 33]

The Employment and National Recessions graph shows long-term change in employment against periods of national recession (blue bars) and recovery. The Employment During Recessions and Recovery Periods graph shows the percent gain or loss in employment during periods of national recession (blue bars) and recovery (green bars).

Recession: According to the National Bureau of Economic Research: "A recession is a significant decline in economic activity spread across the economy, lasting more than a few months, normally visible in real GDP, real income, employment, industrial production, and wholesale-retail sales. A recession begins just after the economy reaches a peak of activity and ends as the economy reaches its trough. Between trough and peak, the economy is in an expansion."

The U.S. Bureau of Labor Statistics changed methodology related to unemployment rates in 1990. Caution should be used comparing pre-1990 estimates of unemployment rates with those from 1990 forward. [34]

Why is it important?

One measure of economic well-being is the resilience of the local economy during periods of national recession. It is a positive sign if local employment continues to grow (or does not decline) during a recession. [35]

Another sign of economic well-being is how well the local economy recovers from a recession, measured as growth of employment from the trough (at the depth of the recession) to the peak (just before the next period of decline).

As the economy of a place diversifies, it can become more resilient to economic downturns. Places that attract new residents, retain manufacturing, and support a high-tech economy tend to be less affected by economic downturns.

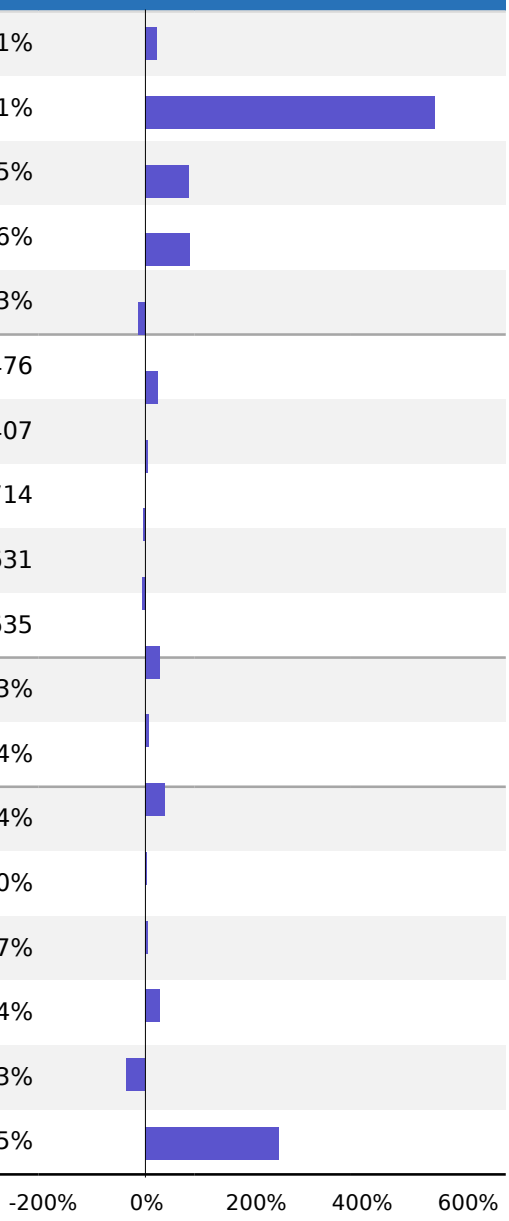
Government employment is more stable and can help to absorb some of the losses in private sector economic activity during a recession.

Socioeconomic Trends

Baker County, OR

Comparisons

	Indicators	Baker County, OR	Malheur County, OR	Ratio of Baker County, OR vs. Malheur County, OR
Trends	Population, % change, 2000-2022	1.3%	1.1%	
	Employment, % change, 2000-2022	1.4%	-3.1%	
	Personal Income, % change, 2000-2022	41.7%	17.5%	
	Average Earnings per Job, % change, 2000-2022	22.2%	8.6%	
	Per Capita Income, % change, 2000-2022	39.8%	16.3%	
Prosperity	Avg. Earnings per Job, 2022	$46,687	$53,476	
	Per Capita Income, 2022	$48,666	$38,407	
	Services, Avg. Annual Wages, 2022	$39,224	$37,714	
	Non-Services, Avg. Annual Wages, 2022	$46,062	$47,631	
	Government, Avg. Annual Wages, 2022	$55,499	$59,635	
Stress	Unemployment Rate, change 2000-2022	-2.5%	-3.3%	
	Unemployment Rate, 2022	4.7%	4.4%	
Structure	Proprietors, % of Jobs, 2022	32.6%	22.4%	
	Non-Labor Income, % of Pers. Income, 2022	54.3%	53.0%	
	Services, % of Jobs, 2022	59.6%	56.7%	
	Non-Services, % of Jobs, 2022	25.7%	19.4%	
	Government, % of Jobs, 2022	13.5%	19.3%	
	Net inflow of labor earnings of inter-county commuters*	2.2%	-19.5%	



* Displayed only when comparing a county to a benchmark county.

Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.; U.S. Department of Labor. 2023. Bureau of Labor Statistics, Local Area Unemployment Statistics, Washington, D.C.;U.S. Department of Labor. 2023. Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Washington, D.C.; reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Comparisons

What do we measure on this page?

This page compares key performance indicators for the selected location(s) to the selected comparison area. (If no custom comparison area was selected, EPS defaults to comparing against the U.S.) Performance indicators are organized by groups (Trends, Prosperity, Stress, and Structure) that highlight potential competitive strengths and weaknesses.

The percent, or relative, difference between the selected geography and the comparison area is calculated by dividing the difference between the values by the arithmetic mean of the values.

In some cases it may be appropriate to compare a local economy to the U.S. economy. In most cases, however, it will be more useful to compare county or regional economies to similar county or regional economies. For example, if the county being analyzed is small and rural, it should be compared to similar counties because comparing against the U.S. will include data from large metropolitan areas.

Some indicators require a judgment call to decide whether they represent a positive or negative indicator of well-being. For example, a high percentage of personal income in the form of non-labor income could mean the location has done a good job of attracting retirees and investment income. However, it could also mean that there is very little labor income so non-labor income is relatively larger.

The term "benchmark" in this report should not be construed as having the same meaning as in the National Forest Management Act (NFMA).

Why is it important?

A number of indicators determine the economic health of a place. No single indicator should be used by itself. Rather, a range of indicators should be analyzed to derive a comprehensive view of the economy.

The indicators in this report can be used to gauge both standard of living (through factors such as earnings per job and per capita income) and growth (through factors such as change in population, employment, and personal income). When comparing performance among places, it may be important to consider additional measures that are not provided in this report, such as leisure time, crime rate, health statistics, sense of well-being, and other factors that represent quality of life.

Detailed data on a range of topics, including in-depth reports on individual industries, can be obtained by creating other EPS reports at https://headwaterseconomics.org/eps.

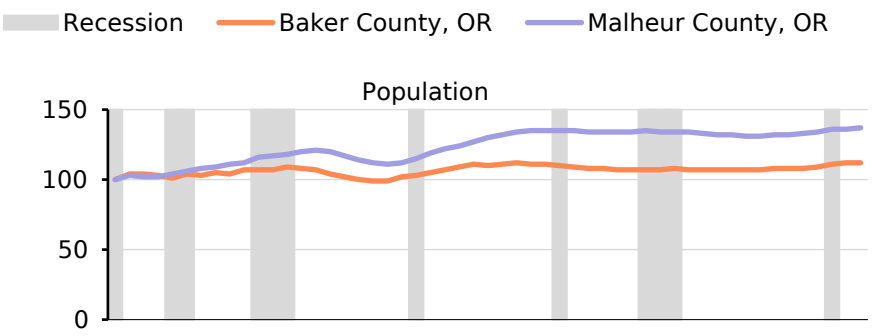
Socioeconomic Trends

Baker County, OR

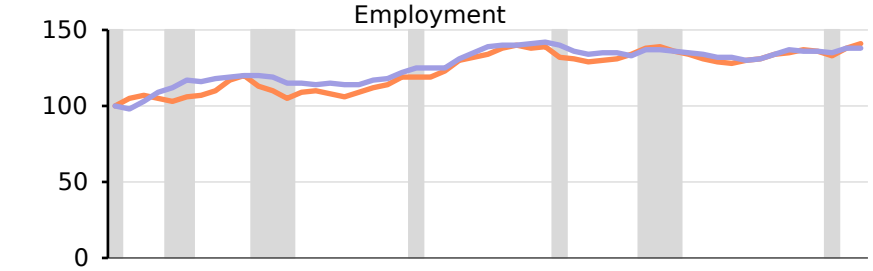
Comparisons

Baker County, OR compared to Malheur County, OR

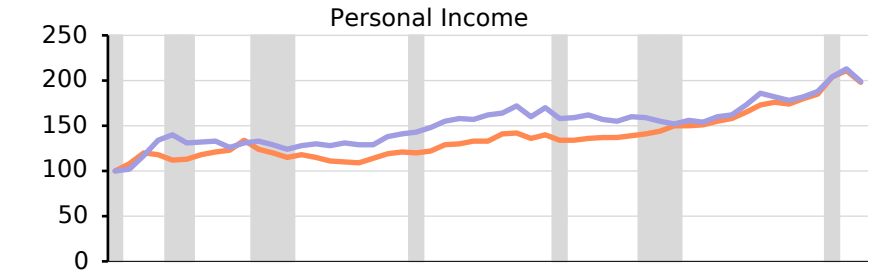
- From 1970 to 2022, population in Baker County, OR grew by 12% compared to 37% for the Malheur County, OR.



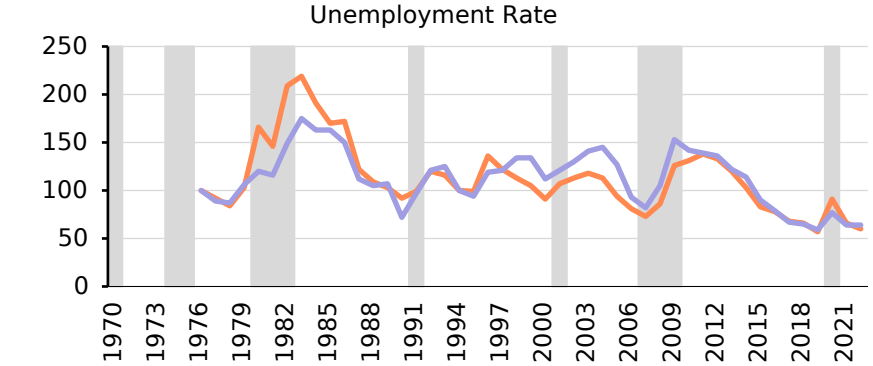
- From 1970 to 2022, employment in Baker County, OR grew by 41% compared to 38% for the Malheur County, OR.



- From 1970 to 2022, personal income in Baker County, OR grew by 98% compared to 99% for the Malheur County, OR.



- From 1976 to 2022, the unemployment rate in Baker County, OR shrank by 40% compared to -36% for the Malheur County, OR.



Data Sources: U.S. Department of Commerce. 2023. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C.; U.S. Department of Labor. 2023. Bureau of Labor Statistics, Local Area Unemployment Statistics, Washington, D.C.; reported by Headwaters Economics' Economic Profile System, headwaterseconomics.org/eps.

Socioeconomic Trends

Baker County, OR

Comparisons

What do we measure on this page?

This page describes trends in key performance indicators (change in population, employment, real personal income, and the unemployment rate) for the selected area and compared to the comparison area. Gray vertical bars indicate periods of national recession.

Data are indexed to the start year for each indicator so that data from areas of different sizes can be compared. The charts are useful for showing the relative difference in the rate of change for each indicator.

The term "benchmark" in this report should not be construed as having the same meaning as in the National Forest Management Act (NFMA).

Information for a range of locations and measures can be obtained by creating additional EPS reports at https://headwaterseconomics.org/eps.

Why is it important?

This page shows long-term economic performance at a glance. It enables the reader to compare performance between places, and evaluate how performance was impacted by national business cycles.

Socioeconomic Trends

Baker County, OR

Data Sources & Methods

This Socioeconomic Trends report uses national statistics from public government sources. All data used in EPS can be readily verified with the original sources:

- **Regional Economic Accounts**
  Bureau of Economic Analysis, U.S. Department of
  http://bea.gov/data/economic-accounts/regional
  Tel. 202-606-9600

- **Local Area Unemployment Statistics**
  Bureau of Labor Statistics, U.S. Department of Labor
  http://www.bls.gov/lau
  Tel. 202-691-6392

- **Quarterly Census of Employment and Wages**
  Bureau of Labor Statistics, U.S. Department of Labor
  http://www.bls.gov/cew
  Tel. 202-691-6567

- **Population**
  Census Bureau, U.S. Department of Commerce.
  https://www.census.gov/topics/population.html
  Tel. 800-923-8282

- **National Bureau of Economic Research**
  http://www.nber.org/cycles/recessions.html
  Tel. 617-868-3900

EPS core approaches
EPS is designed to focus on long-term trends across a range of important measures. Trend analysis provides a more comprehensive view of changes than spot data for select years. We encourage users to focus on major trends rather than absolute numbers. EPS displays detailed industry-level data to show changes in the composition of the economy over time and the mix of industries at points in time. EPS employs cross-sectional benchmarking – comparing smaller areas such as counties to larger regions, states, and the nation – to give a sense of relative performance. EPS allows users to aggregate data for multiple locations to allow for more sophisticated cross-sectional comparisons.

Industrial Classifications
Industry data reported in EPS come from data sources that use standard industry classification systems. Starting in the 1930s, the Standard Industrial Classification (SIC) system served as the structure for the collection, aggregation, presentation, and analysis of industry data. Under SIC, which used a four-digit coding structure, an industry consisted of a group of establishments primarily engaged in producing or handling the same product or group of products or in rendering the same services. As the U.S. economy shifted from a primary emphasis on manufacturing to a more complex services economy, SIC became less useful for describing the economy's changing industrial composition.

The North American Industry Classification System (NAICS), developed using a production-oriented conceptual framework, groups establishments into industries based on the activity in which they are primarily engaged. NAICS uses a six-digit hierarchical coding system to classify all economic activity into 20 industry sectors. Five sectors are mainly goods-producing sectors and 15 are entirely services-producing sectors.

Adjusting dollar figures for inflation
Because a dollar in the past was worth more than a dollar today, data reported in current dollar terms should be adjusted for inflation. The U.S. Department of Commerce reports personal income figures in terms of current dollars. All income data in EPS are adjusted to real (or constant) dollars using the Consumer Price Index. Figures are adjusted to the latest date for which the annual Consumer Price Index is available.

Data gaps and estimation
Some data are withheld by the federal government to avoid the disclosure of potentially confidential information. Headwaters Economics uses supplemental data from the U.S. Department of Commerce to estimate these data gaps. These are indicated with tildes (~) in tables. Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at https://headwaterseconomics.org/eps.

Endnotes

1 - In addition to the U.S. Census Bureau county classifications offered here, several other county classification systems are available: the Economic Research Service of the U.S. Department of Agriculture offers a county classification system based on economic dependence on particular sectors (for example, “Farming-dependent,” Mining-dependent”), economic activity (“Non-metro recreation”), and policy type (for example, “Housing-stress” or “Persistent poverty”). The Economic Research Service’s “Rural-Urban Continuum Codes” codes with explanation can be found at https://www.ers.usda.gov/data-products/rural-urban-continuum-codes/. Headwaters Economics developed a "Three Wests" county typology for all counties in the 11 contiguous western U.S. states based on access to markets via highway or air travel. Its web site (https://headwaterseconomics.org/economic-development/trends-performance/three-wests-explained/) offers sortable county data, a journal article on the subject, and an interactive tool that allows users to compare economic and demographic data for “Metro,” “Connected,” and “Isolated” counties across the West.

2 - Population and Housing Unit Estimates. U.S. Census Bureau. https://www.census.gov/programs-surveys/popest/about.html.

3 - The U.S. Census Bureau provides a tool for mapping migration flows into and out of all counties in the country: https://flowsmapper.geo.census.gov/map.html.

4 - For a comprehensive cost of living index, see http://livingwage.mit.edu/pages/about.

5 - A 2006 study documented that workers would accept lower wages in order to live closer to environmental amenities. See: Schmidt L and Courant PN. 2006. Sometimes Close is Good Enough: The Value of Nearby Environmental Amenities. Journal of Regional Science 46(5):931-951. See also: Deller SC, Tsai T-H, Marcouiller DW, and English DBK. 2001. The Role of Amenities and Quality of Life in Rural Economic Growth. American Journal of Agricultural Economics 83(2): 352-365.

6 - The Occupational Outlook Handbook, published by the Bureau of Labor Statistics, contains descriptions of all occupations, median pay, and the education and training required for each: https://www.bls.gov/ooh/.

7 - To see the possible impact of non-labor income sources on per capita income, see previous sections of this report that show the percent contribution of non-labor to total personal income, or create an EPS Non-Labor Income report at https://headwaterseconomics.org/eps.

8 - A 2014 study analyzed the impact of types of non-labor income on socioeconomic performance. See: Lawson MM, Rasker R, and Gude PH. 2014. The importance of non-labor income: An analysis of socioeconomic performance in western counties by type of non-labor income. Journal of Regional Analysis and Policy 44(2): 175-190.

9 - For online SIC and NAICS manuals and definitions of industry codes, see https://www.census.gov/naics/ and https://www.osha.gov/pls/imis/sic_manual.html.

10 - Documentation explaining methods developed by Headwaters Economics for estimating disclosure gaps is available at https://headwaterseconomics.org/eps.

11 - According to estimates by the U.S. Department of Labor, from 2008 through 2018 "goods-producing" employment in the U.S. (mining, construction, and manufacturing) will not grow. By 2018, goods-producing sectors will account for 12.9 percent of all jobs, down from 14.2 percent in 2008. In contrast, "service-producing" sectors are expected to account for 96 percent of the growth in new jobs. The fastest growing are projected to be professional and business services, and health care and social assistance. See: Bartsch KJ. 2009. The employment projections for 2008-18. Monthly Labor Review Online 132(11): 3-10. https://www.bls.gov/opub/mlr/2009/11/art1full.pdf.

Endnotes (cont.)

12 - The Bureau of Labor Statistics provides industry employment projections to 2024: https://www.bls.gov/opub/mlr/2015/article/industry-employment-and-output-projections-to-2024.htm.

13 - For an overview of how historical changes in employment have affected rural America, see Whitenar, LA and McGranahan DA. 2003. Rural America: Opportunities and Challenges. Amber Waves 1(1):1-8 available at https://www.agclassroom.org/teen/ars_pdf/social/amber/rural_america.pdf.

14 - The Economic Research Service of the U.S. Department of Agriculture is a good source for articles and data on the rural economy: https://www.ers.usda.gov/topics/rural-economy-population/.

15 - See the Bureau of Labor Statistics' explanation of seasonal adjustments at https://www.bls.gov/cps/seasfaq.htm.

16 - For more information on unemployment, see related Bureau of Labor Statistics resources available at https://www.bls.gov/cps/faq.htm.

17 - The U.S. Department of Labor offers an explanation of seasonal and part-time employment: https://www.dol.gov/general/topic/workhours/seasonalemployment.

18 - For research findings on economic resiliency, see Chapple K and Lester TW. 2010. The resilient regional labour market? The U.S. case. Cambridge Journal of Regions, Economy and Society 3(1):85-104.

19 - For an overview of how the Bureau of Labor Statistics treats employment, see https://www.bls.gov/bls/employment.htm.

20 - For an overview of how the Bureau of Labor Statistics treats pay and benefits, see https://www.bls.gov/bls/wages.htm.

21 - Employment and wage estimates for more than 800 occupations are available from the Bureau of Labor Statistics. It is helpful to look at services by occupation rather than by sector or industry because wages vary dramatically across occupations associated with different services. For more information, see https://www.bls.gov/oes/.

22 - For a review of the role of public lands amenities and transportation in economic development, see Rasker R, Gude PH, Gude JA, van den Noort J. 2009. The Economic Importance of Air Travel in High-Amenity Rural Areas. Journal of Rural Studies 25: 343-353. https://headwaterseconomics.org/wp-content/uploads/3wests/Rasker_et_al_2009_Three_Wests.pdf.

23 - This article specifically captures the idea that amenity values are capitalized into wages: Knapp TA and Graves PE. 1989. On the Role of Amenities in Models of Migration and Regional Development. Journal of Regional Science 29(1):71-87.

24 - Glossary. Bureau of Economic Analysis. https://www.bea.gov/help/glossary.

25 - Regional Economic Accounts: Regional Definitions. Bureau of Economic Analysis. https://www.bea.gov/data/economic-accounts/regional.

26 - For an example of an academic study where proprietors' employment is considered an indication of entrepreneurial activity, see Mack E, Grubesic TH, and Kessler E. 2007. Indices of Industrial Diversity and Regional Economic Composition. Growth and Change 38(3):474-509.

27 - Regional Economic Accounts. Bureau of Economic Analysis. https://www.bea.gov/data/economic-accounts/regional.

28 - For a glossary of terms used by the Bureau of Economic Analysis with definitions, see https://www.bea.gov/data/economic-accounts/regional.

29 - The Decennial Census also reports the number of workers commuting between counties, see https://www.census.gov/topics/employment/commuting.html.

Endnotes (cont.)

30 - According to the Bureau of Economic Analysis: "Estimates of gross commuters' earnings inflow and outflow are derived from the residence adjustment estimates, which are the estimates of the net inflow of the earnings of inter-area commuters. In the personal income accounts, the residence adjustment estimates are added to place-of-work earnings estimates to yield place-of-residence earnings estimates. This conversion process is an important part of the local area economic accounts because personal income is a place-of-residence measure, whereas the data used to estimate over 60 percent of personal income is reported on a place-of-work basis."

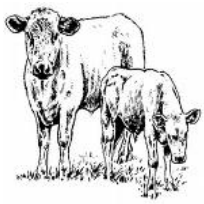
31 - For a study documenting a negative residential adjustment that is considered a positive indicator, see Mack E, Grubesic TH, and Kessler E. 2007. Indices of Industrial Diversity and Regional Economic Composition. Growth and Change 38(3):474-509.

32 - For a definition of recession and recovery periods, see the National Bureau of Economic Research: Business Cycle Dating Committee available at www.nber.org/cycles/recessions.html.

33 - For a list of national recessions and recovery periods, see www.nber.org/cycles/cyclesmain.html.

34 - For information regarding data collection and methodology for labor force statistics compiled by the Bureau of Labor Statistics, see https://www.bls.gov/lau/laumthd.htm. Please note that Local Area Unemployment Statistics data prior to 1990 are no longer supported by the Bureau of Labor Statistics.

35 - For research findings on economic resiliency, see: Chapple K and Lester TW. 2010. The resilient regional labour market? The U.S. case. Cambridge Journal of Regions, Economy and Society 3(1):85-104.



Hanna Ranch

Don & Janet Hanna
19411 Taggert Lane
Baker City, Oregon 97814

February 1, 2024
Baker City, Oregon

To Vanessa Rose, Oregon DEQ
Re: Powder River Basin Water Quality Improvement Plan

Thank you for traveling to Baker where this community could meet you. I attended the meeting yesterday and was at the event this evening, but it wasn't a format that I felt like I could interact well in after registering so I subsequently left. I'd like to enter comments in the official record.

We are landowners whose property abuts the Powder River north of Baker for a little over a half mile, so I am potentially directly affected. We have a number of cattle.

We have lived on this ranch over 20 years. From 2003-2008, we always experienced a very low river flow after the end of irrigation season when the irrigation district reduced outflows from Phillips Reservoir to minimum stream flow. It was a typical of a desert stream in the winter.

In about 2005, we were part of a project to install off site water troughs and we also fenced off the river so cattle access was limited though we could run them on the bank for a couple weeks now and then to eat down brush and excess vegetation, a function of elk herds in antiquity. It worked well.

We left to work outside Oregon for 8 years and upon our return in 2016, we were shocked to see the river behind our house choked with the algae and we learned that DEQ had been authorizing water discharge from the sewage settling ponds two miles upriver. Worse, that fall, the water actually ran blue and green past our place for weeks. Our neighbor on the other side of the river made inquiries and the government officials in charge said it was safe. That said, we made sure our animals and grandkids stayed out of the water. I didn't hunt ducks here that fall as I would not have eaten them.

Even after the off site ponds were created under DEQ supervision to pump this effluent miles away, the river ran a little higher than it had in the previous years. Originally the plan was to irrigate forage crops with the water stored in those ponds, but articles in our paper indicated that DEQ staff had determined it was too polluted to sprinkle it out on the land by the new ponds. When the off site ponds started to leak, the water was returned to the settling ponds. And… the water flow behind the house was soon running high though not discolored. I am recording all of this because none of it increased our faith that DEQ is looking out for us, and the inconsistency is difficult for me to accept. How is it that water too polluted to run through a sprinkler on dry ground is perfectly OK to release to run down the river past our home? But my wariness about DEQ authenticity and integrity is not why I am writing.

I'm a little late to the game and only learned about the TMDL activity at a meeting of the Baker Cattlemen's Association last August when there was a great deal of angst over a very short timeframe given by DEQ for public input. Those at the meeting expressed a concern about the data they had received. I offered to look at the data set and report back to them. The data I saw concerned me. There did not appear to be a systemic strategic plan behind where or how it was collected and a number of competing variables were missing such as water flow volume and inter-collector variability. For instance, setting up monitoring sites below the confluence of two streams would seem to be a reasonable way to determine where to spend additional scarce resources to investigate which stream was the source of the issue, then investigate on upstream. I saw no such discipline in the collection sites chosen.

I'm sure there are better analysts than me, but my experience with medical studies over the last 30+ years associated with improving medical quality generally guided my need for consistency, focus, comprehensiveness, discipline and integrity when I analyzed the data.

I think others have communicated those concerns. What I find more concerning than data integrity is that any analysis can only honestly start after an understanding of the historical situation. For instance in medicine, the first document created before treating a patient is called a history and physical. It does not seem like a history and physical exists in the Powder River activity to this point.

I'm pretty sure DEQ staff do not know that prior to the construction of Phillips Reservoir, the Powder River actually ran dry by the time it hit Baker City in some summers. These are not the conditions that suggest the highest historical use of the river was recreational. The conditions demonstrate that the river was used primarily for agriculture, not recreation. I can provide you pictorial proof of a dry Powder riverbed. I can obtain statements from people who were alive here in this time who will attest to the same. Please let me know if you want this information and the format that you require.

Year round flow was achieved only after ranchers in this valley enrolled 30,000 acres of their land under the irrigation district and incurred a multi-decade mortgage against those acres, then assessed fees to every acre to pay for the dam and its maintenance. That mortgage is still being paid off over 50 years later. We are assessed on our county property tax bill.

There was much angst expressed by Baker County residents at the meeting yesterday that someone, who neither lives here nor is aware of the history of this river, autocratically assigned recreational water standards for the present DEQ endeavor, not agricultural standards. There is only recreation because of and after agricultural users made it possible.

We all want clean water and we are willing to work with collaboratively DEQ to meet the right standard. You need to include us, not dictate to us. This gross oversight would have been made had local people been included in this project from the beginning and to proceed further until this is addressed is administrative malfeasance.

Sincerely,
Don Hanna

Oregon DEQ
Attn: Alex Liverman/Watershed Management
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232-4100
Submitted via email: powderTMDL@deq.oregon.gov

Re: Powder Basin TMDL - Bacteria

March 4, 2024

Every Basin in the State of Oregon needs to have a plan designed specifically for that Basin. Every Basin's primary use will vary whether it be agricultural or recreation. One size doesn't fit all.

Partnership: It was mentioned numerous times during the public meetings that the DEQ wanted to partner with agriculture, but in all the steps laid out by the DEQ, agriculture would not be part of the rulemaking, but would be the rule followers. This is not acceptable for us in the ag industry. We all want clean water, especially those of us living in it and depending on the water for our future. Any utopian ideas and exact science theories need to be dismissed. We are dealing with nature, and we don't control it and nature is constantly changing. The best man can come up with is some type of barometer to work with.

The data DEQ has presented is so incomplete and inconsistent it is ludicrous to think any workable plan could come from it.

1) DNA identification is a must for me to even begin to think about trying to work with the DEQ or EPA or any other state or federal agency. I will not stand for the finger being pointed at cattle and wildlife, when man, and other contributing factors are being exempt from the equation.
2) Data collection must be consistent and complete. Water samples need to be taken every month, same place, same day, and same time of day. Water flow needs to be recorded, as well as water temperature, and air temperature. The samples need to be sent to different labs. This process needs to be in existence for a minimum of 5-years or more, to start formulating a workable plan. Thought might be given to the Powder Basin shadowing the DEQ with the same data collection criteria of our own.

I have lived in the North Powder Valley for 74 years on a ranch that has been in the family since 1881. I have meadow pastures that are flood irrigated and a pond to capture tailwater for recycling through sprinklers. In the DEQ factsheet "testing is not needed to determine cattle access to waterways and irrigation practices that carry manure to runoff in streams…". This could not be any more misleading and maddening statement. I take great measures to make sure my irrigation water and livestock manure do not get back to the river. I harrow the manure, as do most all cattlemen, to break it down and spread the manure so it is more consumable by plants and grasses. It is very valuable to my operation as I use no commercial fertilizer. (EXHIBIT A) The water is applied to the land through lateral ditches and canvas dams. It is very counter

productive for me to let return flow to the river or run off my land carrying valuable nutrients away. I am sending pictures of a set-aside riparian area and m riparian areas that are managed with livestock to show the mismanagement that occurs with fenced set-asides. (Exhibit B)

In conclusion, I feel no common ground can be reached until we come up with a plan that will produce complete and consistent data, and all sources of contamination be taken into the plan and treated in the same manner.

Fecal matter from cattle and wildlife are spread over large areas and ecosystems are in place to accommodate what nature has created. Man, on the other hand, concentrates contaminants with "point source pollution" and man-made chemicals, cleaning acids, pesticides, herbicides, commercial fertilizers, etc. Man should be the 1st topic on the "Clean Water Act" to start the process by no permits to release lagoon affluents into stream EVER. Contents of cattle fecal matter contains, cellulose, amino acids, stomach bacteria, salt, etc.

All of America needs to think about their food supply, especially all the people not connected close to agriculture, because food is not made in the supermarket.

Thank you,
Elmer and Jan Hill
PO Box 226
North Powder, OR 97867

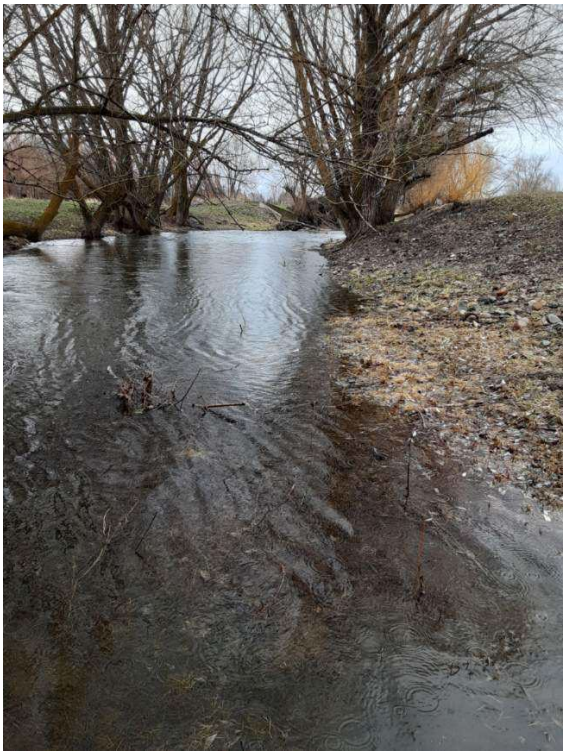
EXHIBIT A

The below photos are taken on the Hill Ranch and show exceptional land management.

Not Harrowed ⇧ Harrowed

Result of harrowing – manure is broken down to mulch

Streambanks are not eroded and vegetated to the waterline



No noxious weeds and willows are regenerating along sloping banks

EXHIBIT B

These are photos from a Conservation Reserve Enhancement Program (CREP) near North Powder. The riparian area is covered in downed limbs and dying trees, infested by noxious weeds, and the banks have been severely eroded. None of the damage has been done by cattle.

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property owner, who raises commodities within the Powder Basin. I have attended your open houses and meetings, as well as reviewed the Draft TMDL Documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of water. There are also no protocols listed for the samples being taken. Protocols for sampling, especially grab sampling, are extremely important; the sample is essentially capturing a moment in time that is then being represented as the overall health of the stream. If flows and protocols are not consistent while sampling, the data collected will not be consistent either.

Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

It is a general message in the current TMDL documents that agriculture is to blame for a high percentage of E. coli inputs into the watershed system and therefore must be the bearers of the financial burden to make improvements on our privately owned land and within our agriculture operations. If that is truly the case this should be done on an individual farm-to-farm basis using the local resources we have already in place, such as the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counterproductive and will not be successful.

There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners available. Landowners will be footing the bill to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

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I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you, John D. Allen, Flying J Farms

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Alice Knapp
2811 12th Street
Baker City, OR 97814

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Dept of Environmental Quality
MAR 25 2024

Oregon DEQ
Alexandra Liverman
700 NE Multnomah St.
Portland, OR 97232

97232-213199

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

March 20, 2024

Re: Powder River Basin, TMDL-Please Extend the Comment Period again, since more data from local landowners and the Irrigation districts is available.

Ms. Liverman,

I continue to have concerns about the entire TMDL process. DEQ operated in a vacuum, instead of working with the Baker County Commissioners and the stakeholders.

What is needed is an accurate baseline, that reflects the agricultural practices currently taking place in Baker County. This process to establish an accurate baseline, needs to begin now with e-coli sampling and DNA testing.

The Burnt River Irrigation District has conducted sampling of four sites in the Burnt River sub-watershed for e-coli, and this season they will also be checking for DNA. We need a solid 5 years of sampling for e-coli levels, along with DNA, so we know what percentage of e-coli is coming from wild animals, humans and birds, and what percentage is coming from domestic livestock. But most importantly, we need to know if the e-coli levels are within State standards and no additional mitigation measures are needed.

DEQ appears to think everything is finalized. Baker County citizens will not accept this!

I am requesting a time extension beyond the stated deadline of March 22, for comments to be submitted. I understand that DEQ never did answer Baker County Commissioner's' questions which were asked at our first meeting so additional time will allow DEQ to get these answers to us.

Please give me a call if you have any questions.

Sincerely,

Alice Knapp

Alice Knapp
Retired Farmer/Rancher and Concerned Citizen
541-519-8004

Oregon DEQ
700 NE Multnomah Street, Suite 600
Portland, OR 97232
Attn: Alex Liverman

February 5, 2024

Re: Powder River Basin, TMDL-Please Extend the Comment Period, answer Baker County's questions and begin the process again with true coordination with Baker County citizens

Mr. Liverman,

I wrote you previously just after the August 15, 2023, DEQ meeting. I told you then and I am telling you now that I have concerns about the information DEQ used to come to their conclusions that cattle were the cause of all bacteria in the basin waters and their assertion that DEQ had used good science to come to their conclusions.

At the recent meeting on January 31, 2024, DEQ stated their goal was to "start making partnerships".

To the room full of my neighbors, the farmers and ranchers who use water wisely, who are stewards of the land and who protect the waters of the Powder Basin, this came off as a bad joke. DEQ does not appear to be looking for partners, rather what the agency wants to do is make us their subjects.

At the August 15, 2023 meeting, Baker County Commissioner Christina Witham and Doni Bruland requested more information and the answers to many questions. We were told at that meeting that DEQ would get back to Baker County with answers. That never happened.

Baker County and its citizens have had their input into the TMDL process ignored. What we need to do now is start over in this process. If DEQ wants partnerships, how about working with the local people and working with theBaker County Commission, the several soil and water conservation districts, Natural Resources Conservation Service (NRCS), and Oregon Department of Fish and Wildlife (ODFW)? All these groups should have been involved during the formulation of this rule to establish a baseline based on sound science.

DEQ appears to think everything is finalized. Baker County citizens will not accept this.

As I told you before. My husband and I farmed and ranched for many years in Baker County. Good stewardship practices have prevailed for at least the last 30 years. Off-channel watering where practical, has been a practice as long as I can remember. Other practices, such as taking care of riparian areas, and not overgrazing pastures, are important practices that ensureagricultural land will continue to be productive and the water will be protected.

But what about the forests? The forests on Federal lands are either burned, overgrown or insect infested because of a lack of thinning and logging. Healthy forests lead to healthy watersheds with soils that retain moisture instead of water running off. Locking up the forests instead of managing them has had a huge negative impact on the Powder Basin waterways. Eliminating cattle will have a similar negative effect on our watershed, since grazing secures clean water, enhances habitat and sustains rural communities (Range Magazine winter/2023/2024 p. 55).

I am requesting a time extension beyond the stated deadline of February 9, for comments to be submitted. That should give DEQ time to answer Baker County's questions. If there are recent scientific studies, conducted within the last 5 years, maybe DEQ can provide that information.

Sincerely,

Alice Knapp

Alice Knapp
Retired Farmer/Rancher and Concerned Citizen
541-519-8004

Alice Knapp
2811 12th Street
Baker City, OR
97814

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Dept of Environmental Quality
FEB 08 2024

Oregon DEQ
700 NE Multnomah St. Suite 600
Portland, Oregon 97232

97232-410050

I am a private property owner who raises commodities within the Powder Basin. I have numerous concerns and questions regarding the DEQ's TMDL (total material daily load) for my area.

The water flows at the time samples were taken can make a huge difference in water quality results and no protocols are listed for the samples being taken. These protocols are extremely important as it represents the overall health of the stream. If flows are not consistent while sampling, the data collected will not be consistent either.

Another issue is the TMDL that DEQ advocates is the highest water purity standards accepted for recreation. However, the majority of surface water in Baker County is not recreational use, but a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion impeding recreation since they meander through private property with little or no public access points. This standard may be appropriate in some state cases, but not a standard for our primarily agricultural area dating back as far as 7 generations.

DEQ requests collaboration...but do they? There are two Baker County Advisory Committees (TMDL Rules and Natural Resource), that have offered to apply for and manage a five-year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, that data would be available to any interested parties or agencies for comparison or supplementation to data collected by DEQ. At this point the TMDL rule making process would "begin" and the science behind it be truly unbiased, science-based, and acceptable to all parties.

DEQ's current TMDL documents blame agriculture for a high percentage of E. coli inputs that harm the watershed; the financial burden will be on privately owned land and agriculture operators. If that is truly the case, this should be done on an individual farm-to-farm basis using existing local resources like the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counter-productive, and will not be successful.

No genetic testing has been done on the samples to determine what is the source? The only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process by a third-party, unbiased entity.

The proven bacteria reduction practices in the DEQ draft document are expensive and questionably scientific. The financial impact to local landowners and agriculture producers will be significant and harmful. A focused "on the ground solution" or property by property consideration has not been defined. What will be available to help pay for compliance...questionable grants, long term loan with interest, etc?

Thank you for your attention to my concerns.

Verna Kay Markgraf
42735 Nye Rd
Baker City Oregon 97814

RECEIVED

FEB 15 2024

Oregon DEQ
Eastern Region - Pendleton

Margaret
42728 Nye Rd
Baker City Oreg
97814

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Dept of Environmental Quality
FEB 12 2024

Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

97232-41050

OH, NO! ***Red flags everywhere:*** The comment period has reopened for a plan to lower bacteria concentrations in the Powder River Basin - Total Maximum Daily Load (TMDL). I very much support Baker County forming a stakeholder's group to obtain funding and collect monitoring data for the next five (5) years, with a full county-wide TMDL plan to follow. However, The Oregon Department of Environmental Quality is not proposing to delay the TMDL for that period. As of now, DEQ estimates that about 90% of the bacterial load in the Powder Basin stems from ranching and farming. It must be noted that the ODEQ is continuing to use unreliable and historic monitoring data to back the reasoning for the TMDL. Interestingly enough, the ODEQ has not yet released the answers/questions to the last comments provided by the interested parties as well as the questions presented from the County at our last meeting with ODEQ.

I agree with Curtis Martin's contention, a cattle rancher and member of the 10-member advisory committee for the Powder Basin TMDL, that the ODEQ can't justify its estimate that 90% of the bacterial contamination stems from agriculture unless the agency has done DNA studies to distinguish between bacteria that comes from wildlife, such as deer and elk, rather than cattle and other livestock. ODEQ has not done those genetic studies. This process should include local ranchers and farmers going hand-in-hand, taking samples with ODEQ representatives, not just ODEQ telling us what they have found, but to actually be there and be a partner in this process so what is found is known to all and not mere speculation.

This is very reminiscent of what happened to our logging industry with the "CONTENTION," mind you no solid evidence, that logging was killing off our Spotted Owl population. With this contention set in place, and, again I have to reiterate that it was only a CONTENTION, and supposedly this was the truth, or at least we were told it was the truth, our logging and timber industry was shut down to the detriment of Baker County. Now we know that it was never the truth……the truth being the Barred Owl was killing off the Spotted Owl, and now our government is killing off the Barred Owl. Interesting turn of events, which absolutely makes no sense. With that knowledge, did our timber and logging industry come back? We all know the answer to that question, and it probably never will with this new proposed Travel Management Plan the Forest Service is trying to railroad through which, in effect, will close access to our beloved forests.

A few years after Baker County lost this very important source of revenue, I happened to take a trip to California down the I-5 corridor and was shocked to see how many operational sawmills and stockpiles of logs were along the I-5 corridor, in almost every small and not so small, po-dunk town along the way. The timber and logging industry is thriving over in western and southern Oregon, but not in eastern Oregon. What's wrong with this picture?

Lesson Learned – We need proof of the current status of our waterways with our local ranchers and farmers being involved in that process. Just because it's said, doesn't make it the truth. We need hard, solid evidence, and the only way that can be done is with local involvement along every step of the way. No more closing down our eastern Oregon industries at the whim of some governmental agency without studies that are thorough and, to be thorough and know the correct answers, takes time.

Conclusion: Truth doesn't matter, only the appearance of truth.

Fool Me Once, Shame on You; Fool Me Twice, Shame on Me!

Public Comment

Name: Holly McKim Email:

Street: 3165 College St. City: Baker City State: OR Zip: 97814

Comments:

1. Mosquitoes Carry e-coli
2. flies + ants Carry more e-coli
3. Will DEQ be able to determine which kind of ecoli is spread by insects as well as animals?
4. We need to work together so that we all benefit. There isn't need for more distrust with our government.

DEQ

State of Oregon **Department of Environmental Quality**

Public Comment

Name: Gloria Carlile Email:

Street: City: State: Zip:

Comments: All waters/basins should not have the same values Each should have their own

DEQ

State of Oregon **Department of Environmental Quality**

To: Oregon Dept. Of Environmental Quality

Re: Draft Proposal Powder Basin Total Maximum Daily Load for Bacteria (TMDL)

I am a lifelong resident of Baker County with some experience of the health of citizens in the area.

After review of the draft proposal, I have some concerns and questions about the design, premises and goals.

What is source of the bacteria (E.coli) load? Humans, cows, birds, elk or wolf? All have different population of intestinal bacteria. The genetics of the different bacteria (E. coli, coliform etc.) would help identify the source.

What is the source of the sampling? Are the results repeatable? Are they above and below a site? Such as a town, an elk feeding station, a homeless encampment, near dredge tailings in Sumpter Valley? Geese and Ducks nest in the tailings after resting on "Baker settling ponds" and irrigation impoundments. (Phillips, Pilcher, etc.)

What is the goal of the study? Make all basin water "recreation quality" water? Decrease illness from water exposure and consumption? I am not aware of this being a problem. Possibly, job security to monitor changes.

All bacteria grow, eat minerals and other bacteria, reproduce, die, and become food for other bacteria, plants and animals then the process repeats. Consider the self cleaning process of a flowing stream.

A lot of "maybe" is used in answering questions in your "fact sheet". This is not appropriate in the "science" of solving a condition or problem.

Thank you.

Robert McKim

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property owner, who raises commodities within the Powder Basin. I have attended your open houses and meetings, as well as reviewed the Draft TMDL Documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of water. There are also no protocols listed for the samples being taken. Protocols for sampling, especially grab sampling, are extremely important; the sample is essentially capturing a moment in time that is then being represented as the overall health of the stream. If flows and protocols are not consistent while sampling, the data collected will not be consistent either.

Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

It is a general message in the current TMDL documents that agriculture is to blame for a high percentage of E. coli inputs into the watershed system and therefore must be the bearers of the financial burden to make improvements on our privately owned land and within our agriculture operations. If that is truly the case this should be done on an individual farm-to-farm basis using the local resources we have already in place, such as the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counterproductive and will not be successful.

There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners available. Landowners will be footing the bill to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you, Myron Miles

Miles Ranch Inc.
North Powder, OR

TO:
Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

TO: 2 people
Leah.FELDON@deq.oregon.gov
and
Vanessa.rose@deq.oregon.gov

I live in the community affected by DEQ's assessment of e. coli in the Powder River Basin. DEQ has essentially chosen one condition (recreation versus agricultural use) to measure water quality, and has decided to place the blame on the back of cattlemen, saying cattle are 90%+ responsible.
It is questionable that this decision is backed by sound science, and DEQ will not consider an unbiased second opinion. Not only does this affect agriculture in general, but it affects the whole economy of our area.

Bart Murray

TO:
Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

TO: 2 people
Leah.FELDON@deq.oregon.gov
and
Vanessa.rose@deq.oregon.gov

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DAR FORNELLI

TO:
Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

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Leah.FELDON@deq.oregon.gov
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Vanessa.rose@deq.oregon.gov

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Fidel Lalig
02-07-2024

Price
43215 Old Wagon Rd.
Baker City, OR 97814

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Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

Dept of Environmental Quality
FEB 12 2024

97232-41005O

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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Thank you,

Pam Neskeathaver

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
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Thank you,

Oregon Water Resources Congress

795 Winter St. NE | Salem, OR 97301 | Phone: 503-363-0121 | Fax: 503-371-4926 | www.owrc.org

March 22, 2024

Rules Coordinator
Oregon Department of Environmental Quality
Submitted via email: powderTMDL@deq.oregon.gov

Re: Comments on the Powder River Basin TMDL and WQMP

The Oregon Water Resources Congress (OWRC) is providing comments on the Oregon Department of Environmental Quality's (DEQ) proposed Powder River Basin Nutrient TMDL rules and related Water Quality Management Plan (WQMP). OWRC was not invited to be a member of the Rules Advisory Committee (RAC) for this set of rules but has been engaged in TMDL rulemaking in other basins. We have a few concerns and comments about the proposed rules.

OWRC is a nonprofit trade association representing irrigation districts, water control districts, drainage districts, water improvement districts, and other local government entities delivering agricultural water supplies throughout Oregon. These water stewards operate complex water management systems, including water supply reservoirs, canals, pipelines, and hydropower facilities. OWRC members deliver water to approximately 600,000 acres of farmland in Oregon, which is over one-third of all the irrigated land in the state. The districts in the Powder River Basin are not currently members but we want to ensure they are not burdened with implementing inappropriate nutrient standards with potentially precedent-setting impacts to other districts.

Our primary concern is language in the proposed WQMP refers to irrigation districts and similar entities as Designated Management Agencies (DMA) or "responsible persons", which is inaccurate and without statutory basis. Irrigation districts and similar entities do not have authority or jurisdiction to implement TMDLs. Secondly, the term "responsible persons" is also used incorrectly to describe irrigation districts and similar entities and is used both together and interchangeably with DMA. It is unclear what the legal distinction and potential liabilities districts have when labeled a responsible person/party.

As stated in Section 5.1 of the WQMP (page 7), "For purposes of this Powder River Basin WQMP, for implementation of the bacteria TMDL, 'responsible person' is defined as any entity responsible for any source of pollution addressed by the TMDL. Unless otherwise specified, all responsible persons, including DMAs, are required to develop, submit, implement and revise, as needed, an implementation plan specific to the Powder River Basin TMDL that includes: management strategies; timelines for implementation; a schedule for achieving milestones; and a performance monitoring component with a plan for periodic review and plan revision."

Outside of DEQ's proposed TMDL rules we have been unable to find any state or federal statute that defines "responsible persons" and how that is different than DMAs. Without greater clarity, if both types of entities are required to develop source-specific implementation plans then it appears that the terms are synonymous. DEQ may have used this term to apply to irrigation district entities as DMAs in previous TMDL efforts but we wholeheartedly disagree with such an assertion, as irrigation districts do not generally have authority or control over source contributing pollutants.

It is also important to note the specific responsibilities and authorities of irrigation districts and similar entities vary across the state and are often limited by the Oregon statute that the entity was formed under, such as ORS 545, ORS 547, ORS 552, ORS 553, and ORS 554. However, in all instances the primary role of these entities is the management of a **quantity** of water. Our members and similar entities manage the conveyance of water and have **limited or no control over the quality of the water** that they receive or deliver.

We request revision of the TMDL documents to reflect that districts are not DMAs, nor responsible persons, and are not required to implement WQMPs at this time. "Water Conveyance Entities" has been used by DEQ previously and we would support the use of that term, but we are opposed to being erroneously labeled as DMAs or responsible persons. The materials indicate the WQMP is incorporated into rule by reference and as such we request revisions occur to better reflect related discussions in other TMDL rulemakings and clarify irrigation districts and similar entities are not DMAs or responsible persons for implementing TMDLs.

Irrigation districts and similar entities are supportive of collaborative, basin-wide approaches to improving water quality. Throughout Oregon, districts regularly engage with their local soil and water conservation districts (SWCDs) as well as watershed councils. They provide their water users with information and resources available from local SWCD's as well as the Natural Resources Conservation Services (NRCS). However, districts are generally not legally authorized, nor financially capable, of implementing or enforcing water quality improvement measures upon individual farmers or other landowners.

It is appropriate for the Oregon Department of Agriculture (ODA) to be listed as a DMA and to continue utilizing the Agricultural Water Quality Management Program (under SB 1010). ODA's program ensures that there is clarity for individual farmers and ranchers on what requirements need to be followed. Under ORS 568.930, landowners within boundaries of water quality management area plans are already required to comply with plan rules, regardless of whether they are receiving water from an irrigation district, and are subject to penalties if they do not comply. ODA has educational tools and technical resources to provide landowners and operators to help address water quality issues, including implementation of TMDLs. ODA also has the authority to take enforcement action against landowners and operators who do not voluntarily comply with water quality standards, implementation plans, and related area rules.

In summation, OWRC appreciates DEQ's efforts to create and revise TMDLs in basins throughout Oregon and are supportive of DEQ's ongoing efforts to protect Oregon's water quality. We continue to be supportive of irrigation districts and similar entities actively participating in collaborative basin-wide efforts through local SWCD's and working with appropriate DMAs like ODA. Placing additional and unclear mandates upon agricultural water suppliers will only lead to unnecessary conflict and expensive legal action. We urge you to clarify that irrigation districts and similar entities are not responsible for developing or implementing WQMPs related to agricultural activities that are not within their scope of operations control or legal management authority.

Your time and consideration of our comments is appreciated. Please contact me if you need any further information or to discuss further.

Sincerely,

April Snell
Executive Director

PACIFIC
RIVERS

March 5, 2024

I write on behalf of Pacific Rivers in support of the draft Total Maximum Daily Load (TMDL) plan developed by the Oregon Department of Environmental Quality (ODEQ) to make the Powder River safe for human contact.

Since 1988, Pacific Rivers has worked in the public interest for clean water and healthy rivers. With our support the Powder River below Thief Valley Reservoir was designated as a Wild and Scenic River by Congress. We have supporters across Oregon and adjacent states. We work for the day when all waters are safe for swimming, fishing, and fish consumption, and all communities have access to clean drinking water sources.

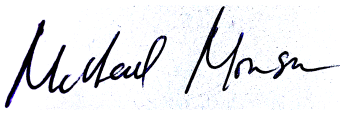
ODEQ has the responsibility and the authority under the federal Clean Water Act and Oregon statutes to bring pollution within fishable/swimmable limits. It must establish beneficial uses of all waters and water quality criteria to protect the most sensitive of those uses. When those criteria are not met, it must develop an overall limit for the pollutants responsible and a clear plan to bring them under control.

We believe that with the issuance of the Powder River TMDL as currently drafted, ODEQ will have done that. The pollution problems in the Powder River Basin have been quantified. Their multiple sources have been identified and quantified. Water quality goals have been established. A long-term plan to achieve them has been developed. Timelines have been established and responsibilities assigned. The water quality management plan builds on strategies successfully employed in other areas, including Oregon's Malheur River Basin. We believe that the plan is clear enough to bring progress soon and flexible enough to allow all concerned to find the best ways to achieve the necessary results over the longer term.

This is the proper way to solve long-term water quality problems in any basin. It is doubly important to apply it in the Powder River Basin because doing so may help address serious water quality problems that exist downstream in Brownlee Reservoir, in the two other Snake River reservoirs below it, and in the Snake River far downstream of Hells Canyon Dam. Pacific Rivers has a particular and well-established interest in seeing those problems solved, in order to make fish from the Snake River in and below the Hells Canyon reservoirs safe to eat. Indeed, we have a formal agreement with ODEQ to work toward that end.

We support ODEQ's draft TMDL and plan for the Powder River Basin.

Sincerely,



Michael Morrison, Board Chair
Pacific Rivers

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

I am a private property owner, who raises commodities within the Powder Basin. I have attended your open houses and meetings, as well as reviewed the Draft TMDL Documents and have numerous concerns and questions. After reviewing the water quality monitoring results, I am concerned that there is no reference to flows at the time the samples were taken; flows have an enormous impact on the quality of water. There are also no protocols listed for the samples being taken. Protocols for sampling, especially grab sampling, are extremely important; the sample is essentially capturing a moment in time that is then being represented as the overall health of the stream. If flows and protocols are not consistent while sampling, the data collected will not be consistent either.

Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

It is a general message in the current TMDL documents that agriculture is to blame for a high percentage of E. coli inputs into the watershed system and therefore must be the bearers of the financial burden to make improvements on our privately owned land and within our agriculture operations. If that is truly the case this should be done on an individual farm-to-farm basis using the local resources we have already in place, such as the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counterproductive and will not be successful.

There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners available. Landowners will be footing the bill to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

Melanie Phillips

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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Thank you,

To: Oregon Department of Environmental Quality

We appreciate the opportunity to comment on the Powder River Basin (Powder River, Burnt River and Brownlee subbasins) TMDL for bacteria during this extended comment period, ending March 8,2024.

We understand that the Oregon Department of Environmental Quality (DEQ) is eager to comply with the USEPA and complete the Powder River Basin TMDL for bacteria. We, as landowners, also look forward to developing an effective, efficient, and equitable TMDL. However, the current draft Powder River Basin TMDL suffers from critical scientific and technical deficiencies, rendering it fatally flawed to effectively protect streams and human health from *E. coli* contamination. As a result, we firmly recommend that the Powder River Basin TMDL for bacteria proceed as an interim draft until the vital data and information are appropriately collected, analyzed and integrated into an effective final TMDL.

Our decision is based on two main factors:

- Highly relevant recent advancements in scientific understanding about *E. coli*, the indicator of potential fecal contamination and presence of harmful micro-organisms in a waterbody
- Inadequate data available to support development of an effective, efficient, equitable TMDL and BMPs, especially in light of the recent advancements in understanding about *E. coli*.

Our comments are organized in two sections: (a) A list and brief discussions of six key science and technology points; and (b) Conclusions.

Key Scientific and Technology Points

1) *DNA (or Bacterial or Microbial) Source Tracking to Accurately Identify E. coli*

   E. coli is relatively adaptable and resides in intestines of many different warm-blooded host organisms, such as humans, wildlife and livestock. Since the inside conditions of each host species are unique, the DNA of *E. coli* is adapted to each set of host-specific conditions. Consequently, the unique DNA of *E. coli* from each species is a "fingerprint" for and identifies the host species. This information would allow landowners, health and environmental officials, wildlife managers and others to accurately identify the key source species, and precisely target with source-specific best management practices (BMPs) and strategies.[1, 3, 4, 5, 7, 8, 13, 14, 15, 17, 24, 27, 31] Results of applying DNA Source Tracking are often unexpected and show wildlife being the main source of *E. coli*, not cattle, in areas where wildlife habitat overlaps with agriculture or other human land uses.[1, 3, 5, 7, 8, 13, 31]

   For example, DNA tracking conducted for developing TMDLs in Western New York, where landuse is primarily for raising dairy cattle, identified the largest source of *E. coli* as Canadian geese (44.7-73.7%); followed by cattle (10.5-21.1%); and deer (10.5-18.4%).[1]

2) *Naturalized E. coli Confound Interpretation of Membrane Filtration Method Results for E. coli*

E. coli that are discharged from warm-blooded animals to the environment and are able to survive and grow in sediment, sand, water and soil, including surviving over winter, are "naturalized" or "indigenous" to the particular conditions of the natural environment.[4, 12, 13, 15, 16, 17, 28] Naturalized *E. coli* populations increase as temperature and other conditions become more favorable. Naturalized *E. coli* are then available to be transported to other locations by runoff, streamflow, wind or other means. Using a Membrane Filter (MF) method to test for *E. coli* provides a quantification of contamination in general. However, unlike DNA source tracking, MF method results do not identify *E. coli* sources. Thus, the presence of naturalized *E. coli* instream elevates the total *E. coli* colony count, thereby confounding or misleading investigators as to the actual source of contamination. In turn, misleading results also adversely impact development of effective host-specific BMPs.[1, 4, 13, 15, 16, 17, 28]

DNA tracking has been successfully used to accurately resolve situations where the source of unusually high instream concentrations of *E. coli* was attributed to adjacent pastures, even though there was no evidence to support the allegation. Instead of cattle, DNA source tracking identified the actual sources of high *E. coli* concentrations as from:

- Very recent wildlife fecal deposits directly instream
- High upstream concentrations of naturalized *E. coli* in water and/or sediment, and some of the naturalized *E. coli* were transported downstream.[15, 28, 30]

  There are cases where cattle are the primary sources of *E. coli* contamination. However, in many cases, there are no effective BMPS are in place or they are not properly functioning.[1, 25, 26] Even in circumstances when cattle contribute most of the fecal *E. coli* instream, more than 40% of the *E. coli* have been from sources other than agriculture.[5]

- The value of increased accuracy in *E. coli* sourcing information is considerable. The US EPA, as well as projects that conducted DNA source tracking for *E. coli* to develop TMDLs, and peer reviewed studies widely agree that DNA source tracking for *E. coli* is a useful tool to: (a) Accurately identify *E. coli* sources; (b) Use in developing effective TMDLs; and (c) Apply in creating host specific BMP strategies.[1, 3, 5, 6, 7, 8, 13, 29, 30]

- Presence of growing populations of naturalized *E. coli* raise two important questions:
  - What constitutes "background" concentrations or sources of *E. coli*?
  - Is *E. coli* still a realistic reliable indicator of fecal contamination?

- Also due to AR and TR *E. coli* and indigenous *E. coli* strains:
  - Protection of human health perhaps should involve coordination with other state agencies (e.g., ODA, OHA-PHD) and federal entities (e.g., National Institutes of Health-CDC, USDA, USEPA), and
  - Perhaps protection of health should include wildlife, livestock and food safety

3) *Risk posed by antibiotic and treatment resistant strains of E. coli to human health & agriculture*

Some strains of *E. coli* develop resistance to antibiotics and water/wastewater treatment methods, and resistance is increasing in number of strains. Wildlife populations harboring antibiotic resistant/treatment resistant (AR and TR) *E. coli* are growing in number, and AR and TR resistance is spreading among wildlife species, cattle and other livestock.[19, 20, 21, 22, 23] Although authorities agree that these developments may pose a threat to the health of humans and wildlife worldwide, there is also agreement that more research is necessary.[19, 20, 21, 22, 23, 31]

- Development of AR and TR in *E. coli* is at the core of the objective to protect for the most sensitive designated use of water in Powder River Basin, primary contact water-based recreation (e.g., swimming), which is intended to protect human health.
- The emergence and growth of AR and TR in *E. coli* also impacts irrigated agriculture and human health through food security and meat production due to transport of AR and TR *E. coli* in irrigation water, snowmelt and rain runoff, as well as in soil/dust, sediment and other sources of naturalized *E. coli*.

4) *Conditions that influence E. coli survival and growth*

Natural systems involving interwoven human and wildlife interactions, like agricultural and wildlife, are complex. In order to progress in effective bacterial mitigation, it is vitally important to know and understand factors that affect *E. coli* survival and growth, and how concentrations vary.

Points 4) and 5), respectively, list conditions affecting *E. coli* survival, growth and concentrations, and ways in which *E. coli* concentrations vary.

Influencing conditions include:

- Temperature
- Flow magnitude and timing

As well as factors associate more closely with naturalized *E.* include[14, 15, 16, 28,30]:

- Soil moisture
- Oxygen levels
- Nutrient availability
- Salinity
- Organic matter content
- Predation

The list is as an example to inform data collection considerations and DNA source tracking.

5) *E. coli concentrations vary with location and over time*

- *E. coli* concentrations vary by month, year and site location, for reasons including[5, 7, 8, 12,14, 15, 24 28]
  - Just as some host species are transient or migratory, so are their *E. coli,* while others are resident to a location, and still others become naturalized.
  - Temperature, precipitation, snowmelt and rainfall runoff, streamflow, and other factors and conditions vary over time (e.g., seasonally, annually), and differ with location.

- Horizontal and vertical variations in flow instream influence mixing between water and sediment in the channel, residence time in a location, and transport into and away from a site location instream.

- Clearly, the complexity of natural systems involving significant interface of agriculture and other human activities with wildlands/wildlife call for more sophisticated analysis with best available technology to effectively, efficiently and equitably mitigate *E. coli* contamination. Presumptions and straight-line thinking about cause and effect of *E. coli* contamination, and universal solutions are no longer fitting or adequate.

6) *Conducting E. coli DNA tracking and collecting additional data is recommended for 5 years*

The length of time for DNA source tracking studies ranged from about 1.5-6 years. Five years was recommended to identify and understand variability in *E. coli* sources, strains and concentrations over time and between sampling sites.[1, 3, 5, 6, 12, 14, 15, 16, 22, 24, 28]

Conclusion

Preserving and protecting water quality is a priority in the Powder River Basin because quality water is critical to quality of life, livelihoods and lifestyles in the valley. These are good reasons by themselves to employ appropriate technology (i.e., DNA source tracking) and data to create an effective, equitable TMDL for the Powder River Basin. However, recent developments regarding:

(a) Growing populations and increased spreading of antimicrobial resistant (AR) and treatment resistant (TR) strains of *E. coli* among wildlife and livestock, and

(b) Existence of indigenous naturalized *E. coli* strains that survive and grow in soil, water, sediment and other substrates,

further emphasize the critical need to proceed with the Powder River Basin (Powder River, Burnt River and Brownlee subbasins) TMDL for bacteria as an interim draft for five years until the vital data and information are appropriately collected, analyzed and integrated into an effective final TMDL.

Use of DNA source tracking has grownover the 21st Century as an important tool in developing more accurate, effective TMDLs. Other states, including neighbors to Oregon, have successfully employed DNA source tracking, and recommend it as a useful tool in identifying the main sources of *E. coli*, and developing and implementing bacteria TMDLs.[1, 7, 12, 13, 24, 31] The USEPA also recognizes DNA source tracking, and has written guidance material and other resources on the topic for the public.[9, 29]

In conclusion, we recommend moving forward with an interim draft TMDL for the Powder River Basin (including the Powder River, Burnt River and Brownlee Reservoir subbasins), and taking the necessary time and using modern effective technology, such as DNA source tracking, to collect necessary information and conduct relevant analyses to assist Oregon DEQ and Powder River Basin landowners and other stakeholders in achieving protection of water quality and public health.

Thank you for your time and consideration.

Best Regards,

Whitney Rohner, Landowner, Powder River Basin

Joel Rohner, Landowner, Powder River Basin

Technical support provided by:

Margaret Matter, Ph.D.
Water Resources and Water Quality Engineer/Hydroclimate Scientist (private practice)

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Alex Liverman, 1-23-24

I saw an article on the Powder River TMDL in my local paper and wanted to comment on it.

I applaud the DEQ for trying to adress this issue. My family used to recreate at Thief Valley reservoir and at Brownlee reservoir but have stopped due to increasing levels of cyanobacteria blooms + ear infections in my kids. Having lived most of my life in NE Ore am well aware of the issues surrounding cattle grazing. From my observance of waters in the Powder basin there is very little if any riparian fencing, resulting in denuded riparian habitat. In fact Idaho Power used that excuse for not including fish passage in its renewal permitting for the Hells Canyon Complex!

As a timber/grazing landowner in the Clark Creek watershed east of Elgin I am sensitive to the abuse of land evident by my neighbors grazing practices. For the Ag community to suggest that wildlife is to blame for ↑ TMDL is a red herring, this is a problem that can be fixed, Thanks Doug Ross

DOUG ROSS
407 Main Ave
La Grande, OR 97850

PORTLAND OR 972
24 JAN 2024 PM 4 L

Dept of Environmental Quality
JAN 26 2024

Oregon DEQ, Attn: Alex Liverman
Watershed Management
700 NE Multnomah Street
Suite 600
Portland
OR 97232-4100

97232-41A050

February 5, 2024

Vanessa Rose
DEQ TMDL
Pendleton, Oregon 97801

I am submitting this memo regarding the Powder River Basin and the recent meetings I attended. I appreciate the opportunity to listen and even though it was not intended as a public meeting, the information presented was of interest. As I stated at the meeting, and again the next day, there is a tremendous need for additional public involvement. After review of the implementing statutes and administrative rules, there is no mention or emphasis placed on public participation; it is largely agency driven.

My input for the record is two-fold.

1, There is a need for more public involvement. There is no mandated timeline. As evidenced by testimony, there is also a need for expanded and more scientific data. There is great question as to the data which is being relied upon.

2. The designation of this Basin as a recreational waterway is not appropriate. As discussed, the Powder River Basin is an agricultural waterway. As I indicated, if it was not for the landowners mortgaging their land for 60 years, there would be no continuous flow of water from the Powder River. It ran dry prior to the construction of Mason Dam of which there is both photographic evidence and locals who remember.

Consequently, the recreation and human element of your designation which requires lowering the ecoli levels is inappropriate. The current data is insufficient and inconclusive to evaluate and make a meaningful monitoring effort. With the capability of both the DEQ scientists on your staff coupled with the private sector interests, there should be additional consideration given to better and more complete data. It is unusual for there to be this much interest by the private sector and their willingness to work with DEQ. It can be a cooperative and collaborative effort if the additional time is given and the recognition of the proper designation of the waterway is made.

It has been requested that DNA testing among other additional sampling criteria be allowed for consideration. However, it appears that the decisions have already been made as evidenced in the 41 page draft which I found online. We have not had a chance to even respond.

Based on the testimony and the governing statutes and rules, it would seem there is no room for public involvement, yet that is what many of us are requesting. My hope is DEQ will provide the accommodation of time to look at and develop additional data for your consideration. Trying to establish monitoring at this juncture is premature and inappropriate. I would ask that this be entered for the record if there is one to insure standing for myself and other Baker County citizens.

Sincerely,

Greg Sackos
208.598.0267

Cc: via email
Leah Feldon
Sen. Lynn Findley
Rep Greg Smith
Curtis Martin
Rep Mark Owens
Christina Witham
Doni Bruland

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)

RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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Another concerning issue is that the TMDL strives to seek the highest water purity standards accepted for recreation. It is important to note that the majority of surface water in Baker County is not used for recreation; it is used as a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion that would impede recreation, and meander through private property with little to no public access points. I highly encourage DEQ to re-evaluate if this standard is appropriate for all waters of the state.

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There is no mention in the TMDL documents of E.coli being genetically tested; the only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process, completed by a third-party unbiased entity.

The financial impact to local landowners and agriculture producers will be significant. DEQ lists no funding source or financial assistance programs for landowners available. Landowners will be footing the bill to come into or remain in compliance with your TMDL Water Quality Management Plan. With costs on the rise for our daily operations, how will this be done? Through grants which are not a guarantee, or a loan spread out over many years with interest, this is not an expense our industry and local family farms can afford. The proven bacteria reduction practices in the draft document are expensive and have the feeling of being an approved list with no science behind them and no "on the ground" focused solution, or property by property considerations.

I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you,

Scott Wilde

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Thank you,

Kate Rohner

I am a private property owner who raises commodities within the Powder Basin. I have numerous concerns and questions regarding the DEQ's TMDL (total material daily load) for my area.

The water flows at the time samples were taken can make a huge difference in water quality results and no protocols are listed for the samples being taken. These protocols are extremely important as it represents the overall health of the stream. If flows are not consistent while sampling, the data collected will not be consistent either.

Another issue is the TMDL that DEQ advocates is the highest water purity standards accepted for recreation. However, the majority of surface water in Baker County is not recreational use, but a means of survival for agriculture. Most streams in the county have multiple legal, permanent points of diversion impeding recreation since they meander through private property with little or no public access points. This standard may be appropriate in some state cases, but not a standard for our primarily agricultural area dating back as far as 7 generations.

DEQ requests collaboration...but do they? There are two Baker County Advisory Committees (TMDL Rules and Natural Resource), that have offered to apply for and manage a five-year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, that data would be available to any interested parties or agencies for comparison or supplementation to data collected by DEQ. At this point the TMDL rule making process would "begin" and the science behind it be truly unbiased, science-based, and acceptable to all parties.

DEQ's current TMDL documents blame agriculture for a high percentage of E. coli inputs that harm the watershed; the financial burden will be on privately owned land and agriculture operators. If that is truly the case, this should be done on an individual farm-to-farm basis using existing local resources like the Soil and Water Conservation Districts. Applying a "blanket" best management practices list is counter-productive, and will not be successful.

No genetic testing has been done on the samples to determine what is the source? The only way to determine if these inputs are not from wildlife such as geese and other fowl, the numerous elk feeding stations around the county (all in close proximity to fresh water streams), or even homeless encampments is to extend the sampling process by a third-party, unbiased entity.

The proven bacteria reduction practices in the DEQ draft document are expensive and questionably scientific. The financial impact to local landowners and agriculture producers will be significant and harmful. A focused "on the ground solution" or property by property consideration has not been defined. What will be available to help pay for compliance...questionable grants, long term loan with interest, etc?

Thank you for your attention to my concerns.

Roy & Linda M. Smith

Linda M. Smith

Roger W. Smith
14778 Talley-Dobbins Ln
Haines, Ore. 97833

PORTLAND OR 972
8 FEB 2024 PM 4 L

Oregon DEQ
700 NE Multnomah St, Suite 600
Portland, OR 97232
Attn: Vanessa Rose

97232-41050

February 1, 2024

TO: Oregon Department of Environmental Quality (DEQ)
RE: Draft Powder Basin Total Maximum Daily Load (TMDL) for Bacteria

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The Baker County TMDL Rules Advisory Committee and the Baker County Natural Recourse Advisory Committee has offered to apply for and manage a five year monitoring program to test the water quality of Powder Basin streams using an outside, third-party source. After the five years of monitoring is completed, data would be available to any interested parties or agencies, and can be used as a comparison or to supplement data collected by DEQ. At this point, the TMDL rule making process would "begin".

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I appreciate the ability to comment on the draft documents and hope you will take into consideration the above statements. I have worked with many entities over the years to improve water quality and natural resources on my property and know the expense, time and dedication it takes.

Thank you, Jesse Soliz

February 8, 2024

Dan Sullivan

SULLIVANZRANCH, INC

25475 Highway 245

Hereford, Oregon 97837

541-446-3419

Re: vanessa.rose@deq.oregon.gov

Dear Vanessa,

Our family has been ranching in the Upper Burnt River area for over 100 years. We strongly support Baker County Commissioners 5-year monitoring program. We feel that is very important that current data is collected and used before ODEQ implants any rules TEDL on the Burnt River.

Thank you,

SULLIVANZRANCH,INC.

Dan Sullivan, Pres.

February 1, 2024

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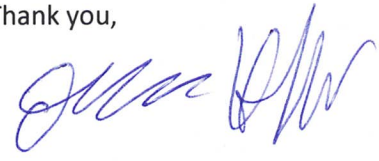

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Deryl Leggett
72934 Foothill Rd
Haines, OR 97833
Ph 541-910-3181

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Kel Woodcock