State of Oregon Department of Environmental Quality

Appendix B - Supporting Information and Maps for Updates to Salmon and Steelhead Spawning Use

May 2023

Barrier Analysis Procedure

DEQ's approach to analysis of proposed spawning use changes related to new data about fish passage barriers was to identify the spawning reaches that were proposed to be reclassified and their relative orientation to natural or manmade barriers. In the original 2003 designations, because of imprecise segmentation of the GIS data relative to the end point of spawning habitat that ODFW identified in their FHD datasets, DEQ frequently designated spawning use to the upper extent of stream reaches, even if ODFW had identified the endpoint of spawning habitat farther downstream. DEQ proposed to reclassify the seasonal spawning use from the potion of waterbodies where spawning was designated upstream of the endpoint identified by ODFW in both the 2003 and 2021 FHD data sets.

ODFW determines the endpoint of spawning habitat through field surveys. These may be delineated by a natural or man-made fish passage barrier that limits the upstream extent of anadromous spawning in a waterbody or because of the absence of availability of suitable substrate, in which case the end point of the spawning habitat is not associated with a barrier. Because man-made barriers have the potential to be modified or removed, DEQ elected to retain spawning use above these types of barriers, even if spawning is not currently a use above the barriers. However natural barriers reliably set the extent of exiting uses and proposed spawning use changes above natural barriers would still be considered if ODFW's FHJD indicated that spawning habitat was not suitable and accessible above a natural barrier.

DEQ started with the proposed spawning use layer showing change in status for waterbodies with spawning use. Reaches must not coincide with the extent that ODFW indicates for spawning habitat in the 2021 FHD data set to be considered for reclassification.

1. DEQ created a new layer from a subset of the draft spawning use map of reaches that are classified for reclassification of spawning use.
2. DEQ evaluated the ODFW fish passage barriers dataset[1] to identify spawning extent endpoints associated with natural barriers.
3. Select points for fish passage barrier Feature types (fpbFtyTyp) 'CascadeGradientVelocity' and 'Falls' **and** fish passage status (fpbFPasSta) 'Blocked'. This subset is comprised of natural barriers that result in complete blockage of passage.

[1] https://www.dfw.state.or.us/fish/passage/inventories.asp

4. Snap points representing these natural barriers to the hydrography of DEQ's proposed spawning use layer.
5. Split the segmentation on these barrier points. Segments upstream of the natural barriers would be reclassified as non-spawning. Segments downstream of the natural barriers would retain spawning use if indicated by ODFW as 'primarily spawning' habitat in the 2021 FHD data set.

Where these barriers intersect the reaches proposed for reclassification of spawning use on the draft salmon and steelhead spawning use maps, DEQ confirmed it would not retain the spawning use designation from 2003 and will propose these for reclassification. These indicate where natural barriers to anadromous salmon and steelhead spawning have been surveyed by ODFW and determine the upstream extent of spawning habitat in the FHD. Therefore salmonid & steelhead spawning is not an existing use above these barriers.

DEQ evaluated the ODFW barriers dataset for man-made barriers and will retain the current spawning use designation upstream of these barriers unless they occur upstream of a natural barrier to fish passage.

1. Subset the ODFW fish passage barriers dataset to identify man-made barriers that result in blockage of passage
2. Select fish passage barrier Feature types (fpbFtyTyp) 'Bridge','Dam','Culvert','Weir','Sill','Tide Gate', 'Unknown'
3. Snap man-made barriers to the DEQ proposed spawning use map.
4. Identify the reaches with endpoints that intersect the subset of man-made barriers.
5. Manually confirm that this subset of reaches are downstream of any natural barriers with complete blockage of passage, and would therefore be accessible to anadromous salmon and steelhead.
6. Export a new layer of the reaches that intersect the man-made barriers and therefore where DEQ would retain their current spawning use designation.
7. Use the 'select by location' tool to select the reaches on the proposed spawning use map where the spawning designation will be retained using the new later, even though it does not match the extent of 'primarily spawning' habitat use in ODFW's 2021 FHD.
8. Calculate the updated spawning designation code and spawning date code based on the current designation.

Because the state of Oregon has a policy with the goal of removing or modifying man-made passage barriers to anadromous fish passage, the presence of a man-made barriers can't be used to determine the extent of the highest attainable use of salmon and steelhead spawning. Therefore DEQ will retain existing spawning use designations above man-made barriers at this time.

Maps for Revisions to Salmon and Steelhead Spawning Use

(Note: for information on specific a specific waterbody, please refer to the Aquatic Life Use Updates Informational Web Maps).

Maps for Spatial Revisions to Salmon and Steelhead Spawning Use Due to Hydrography and ODFW Data Revisions Since 2003.

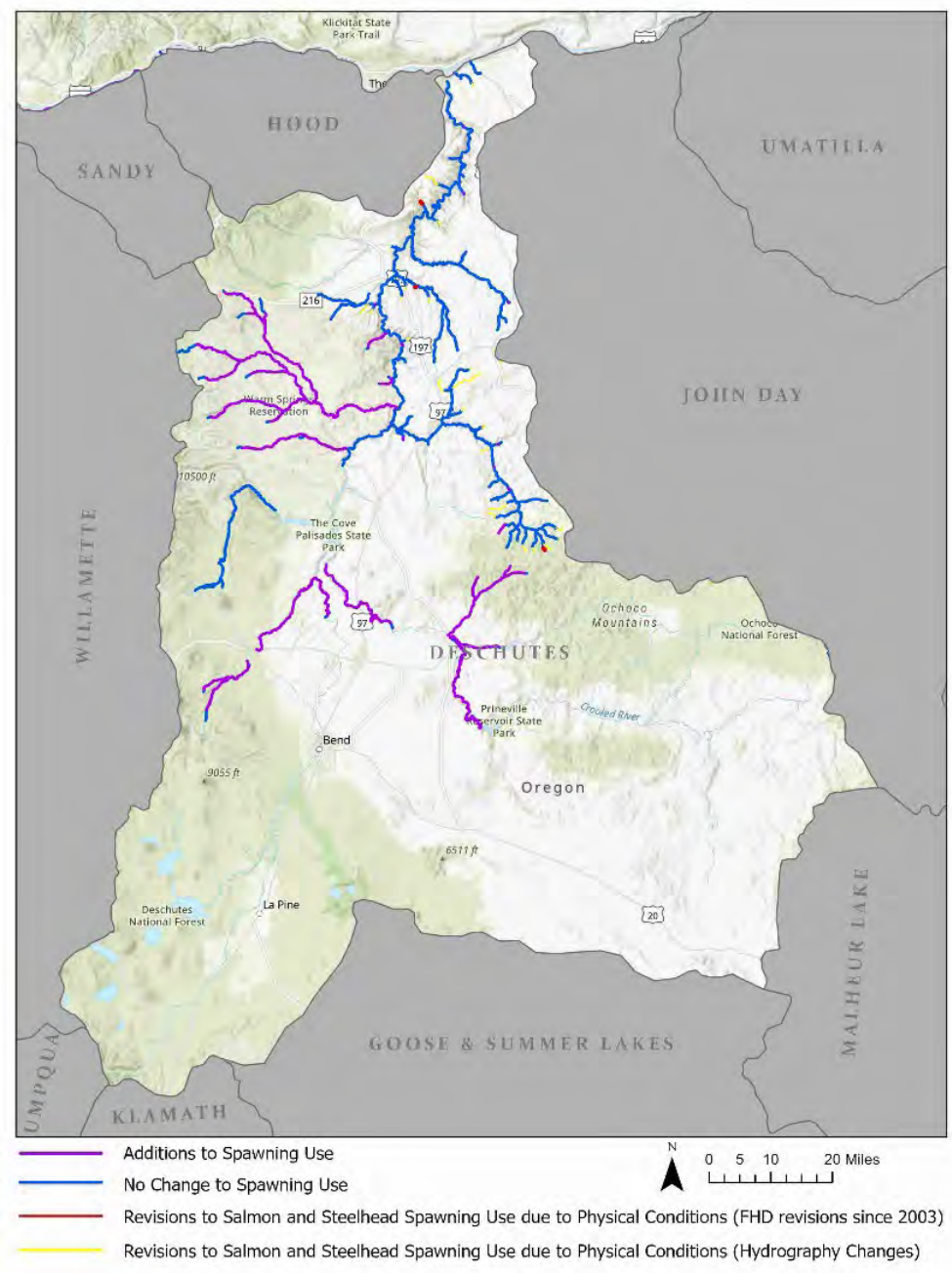

Figure B-1. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Deschutes River Basin.

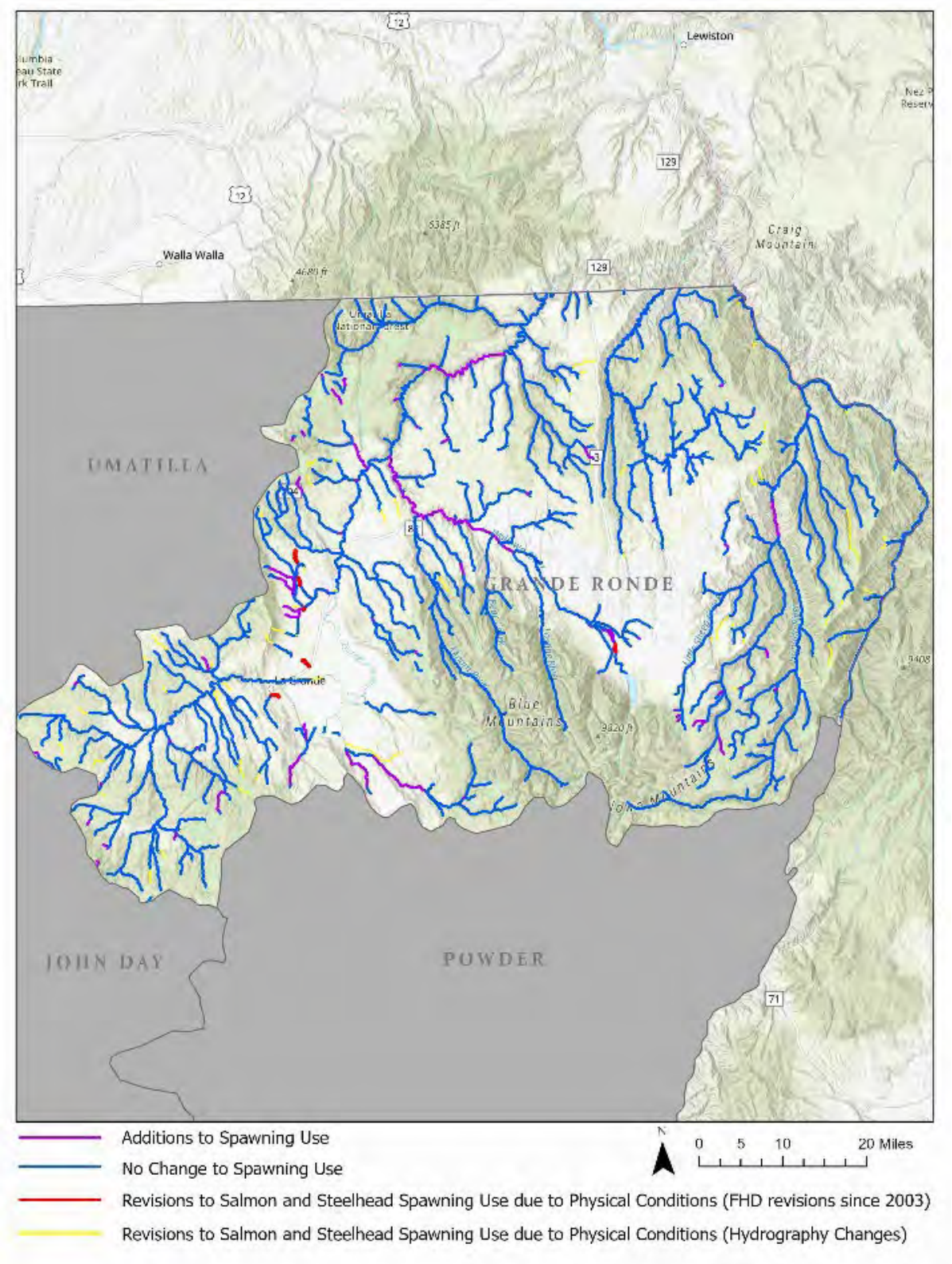

Figure B-2. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Grand Ronde River Basin.

Figure B-3. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Hood River Basin.

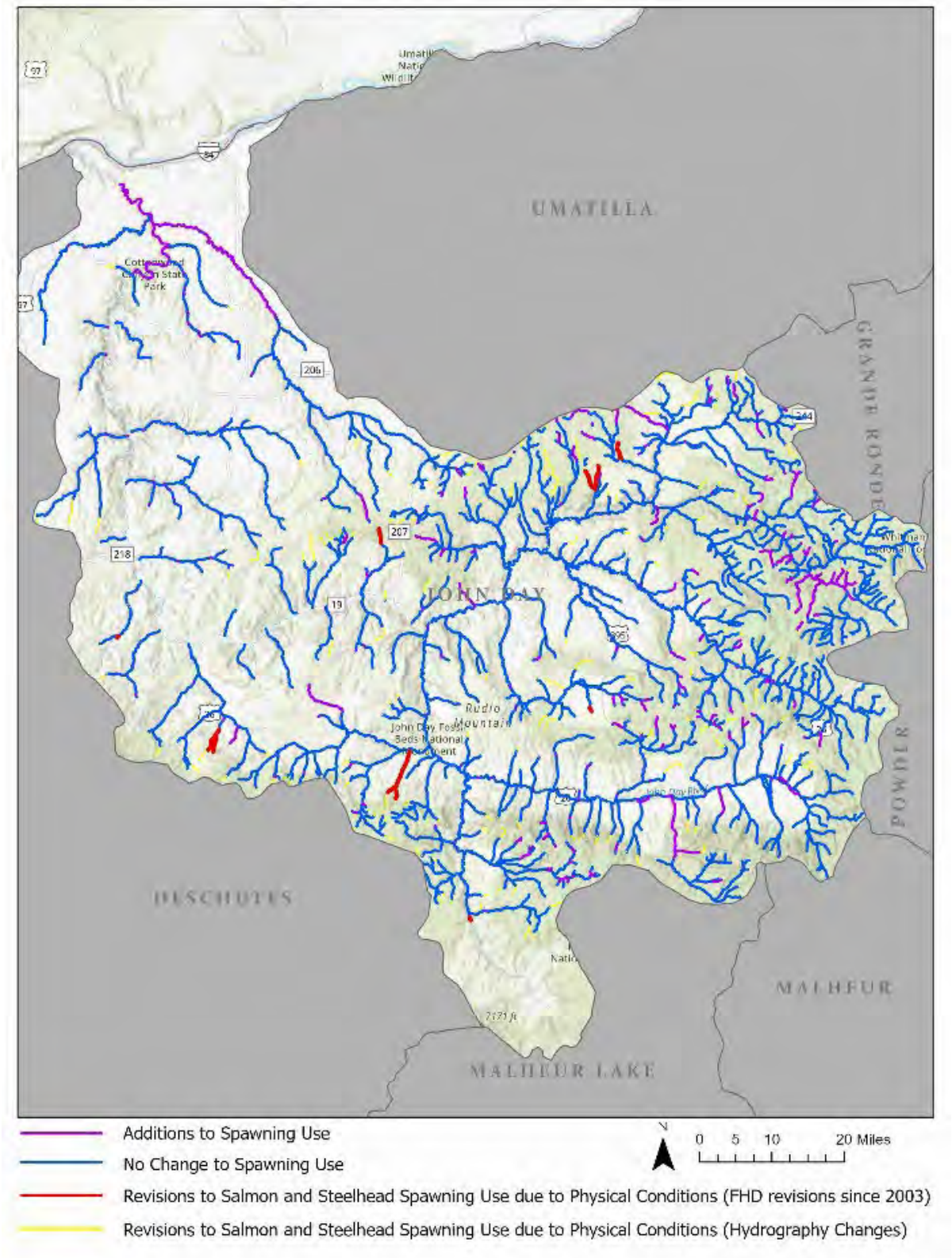

Figure B-4. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, John Day River Basin.

Figure B-5. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Mid Coast Basin.

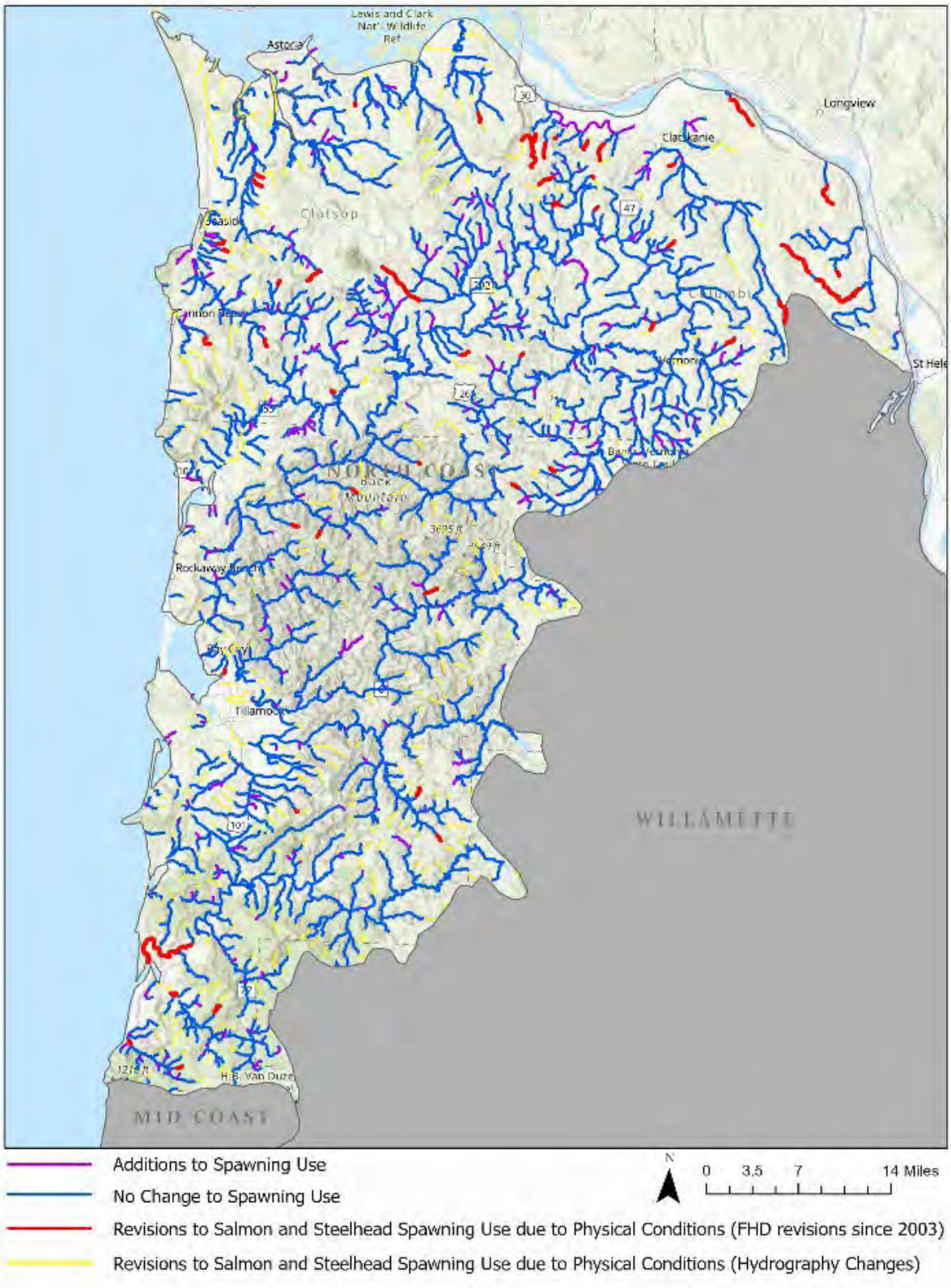

Figure B-6. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, North Coast Basin.

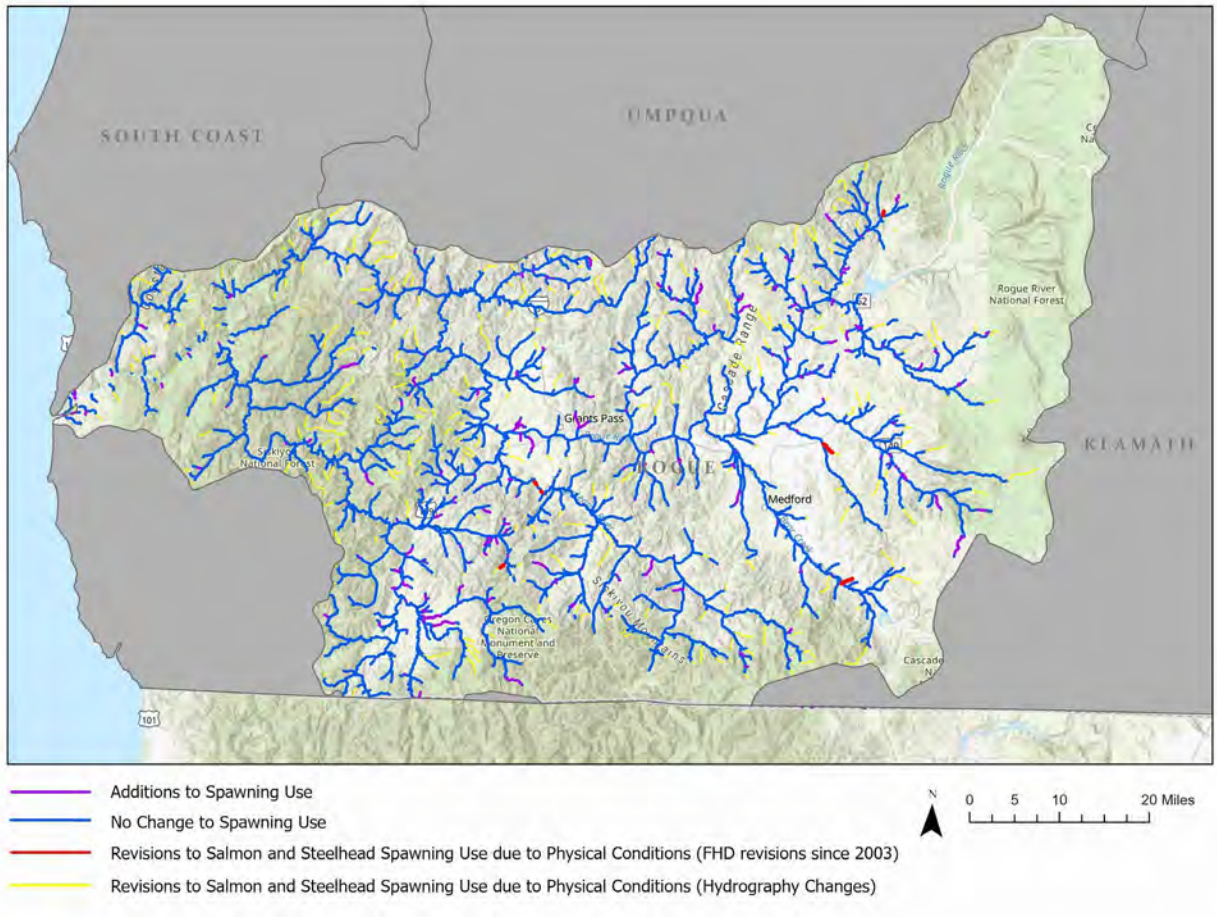

Figure B-7. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Rogue River Basin.

Figure B-8. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Sandy River Basin.

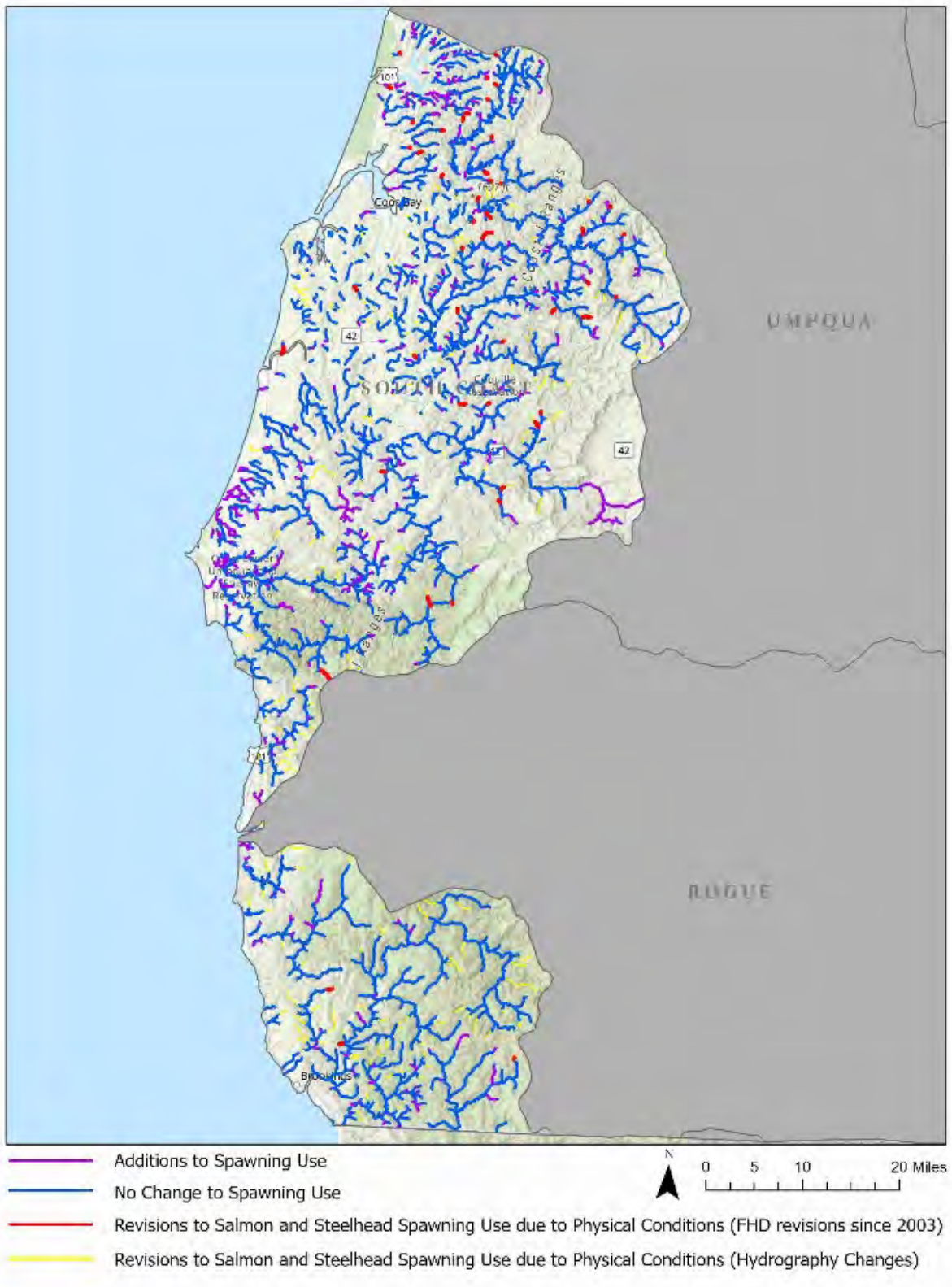

Figure B-9. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, South Coast Basin.

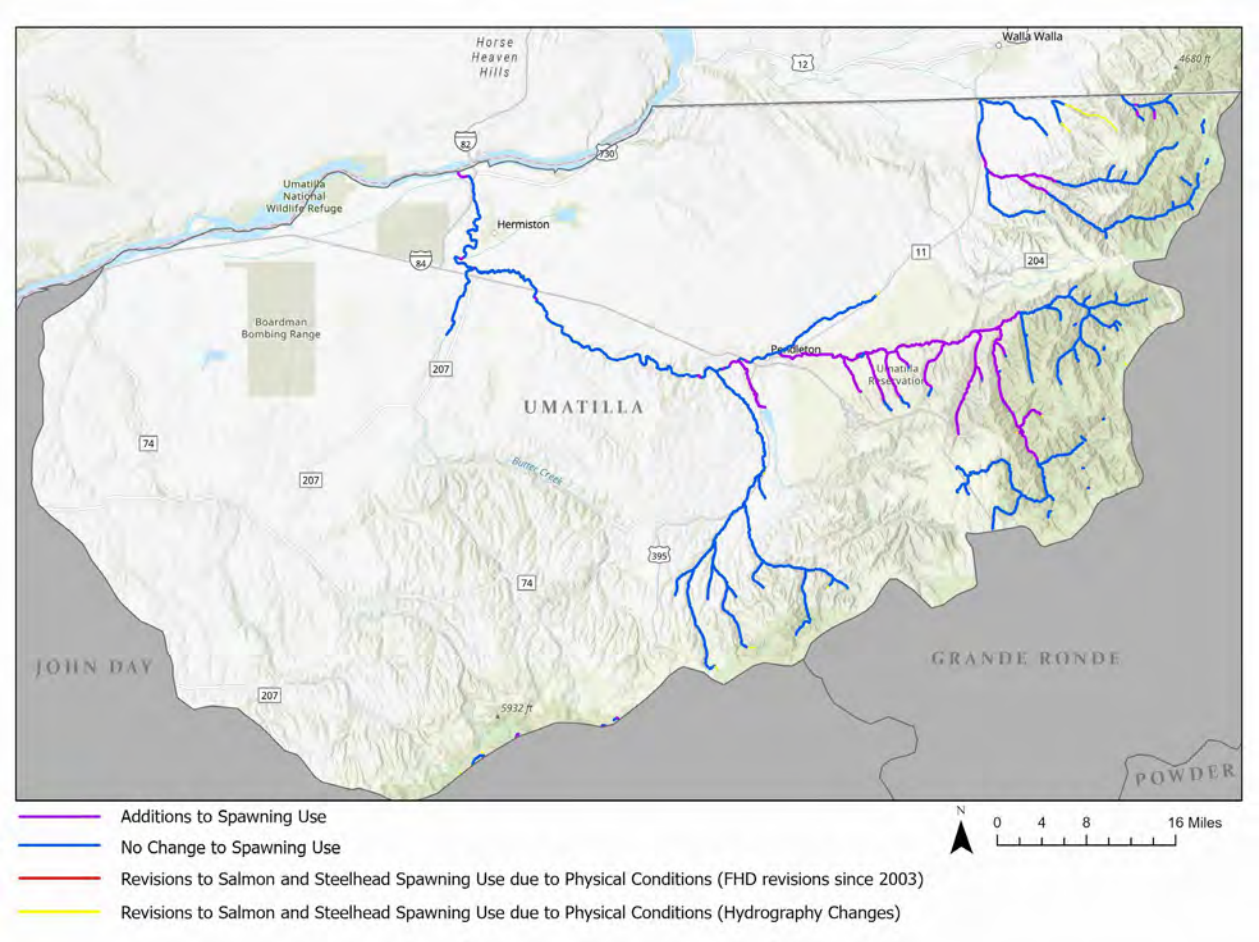

Figure B-10. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Umatilla River Basin.

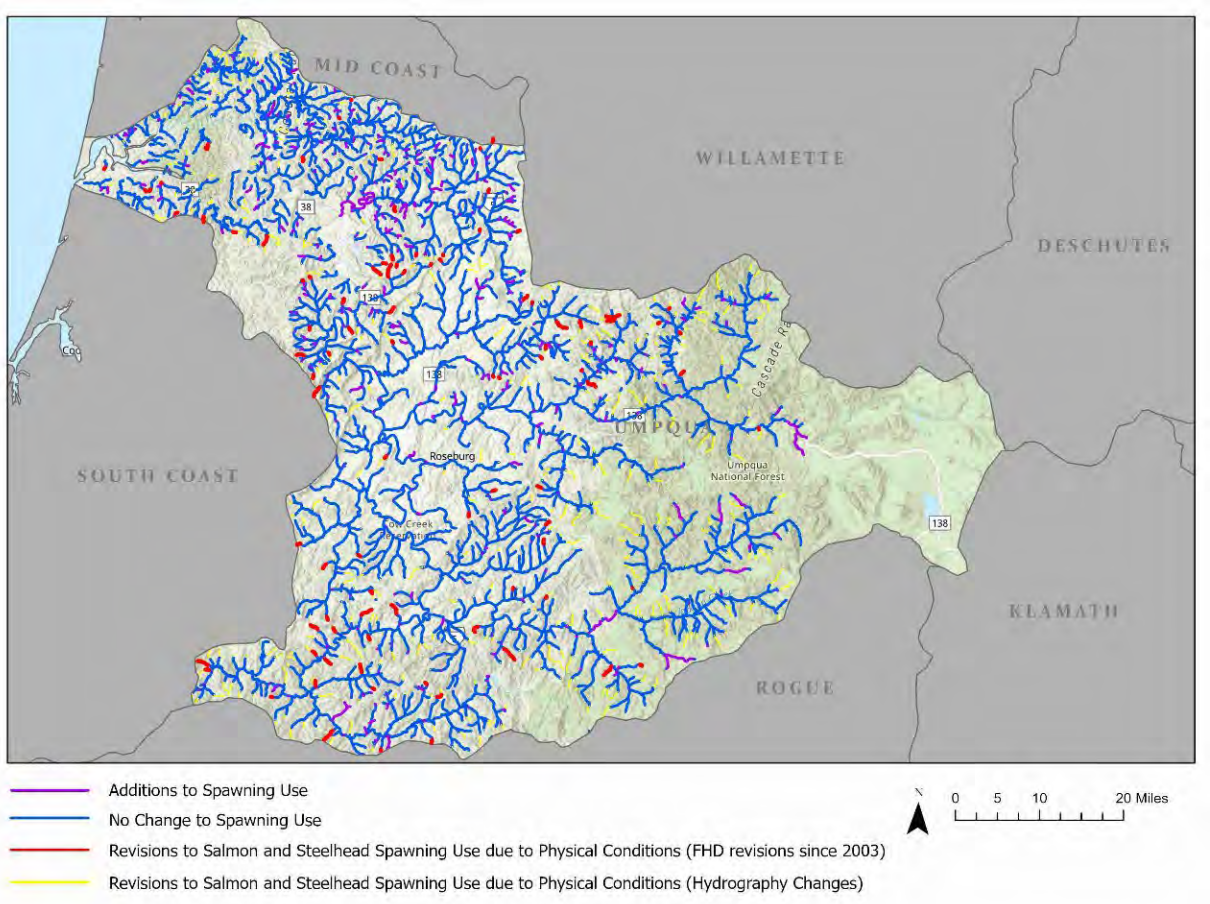

Figure B-11. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Umpqua River Basin.

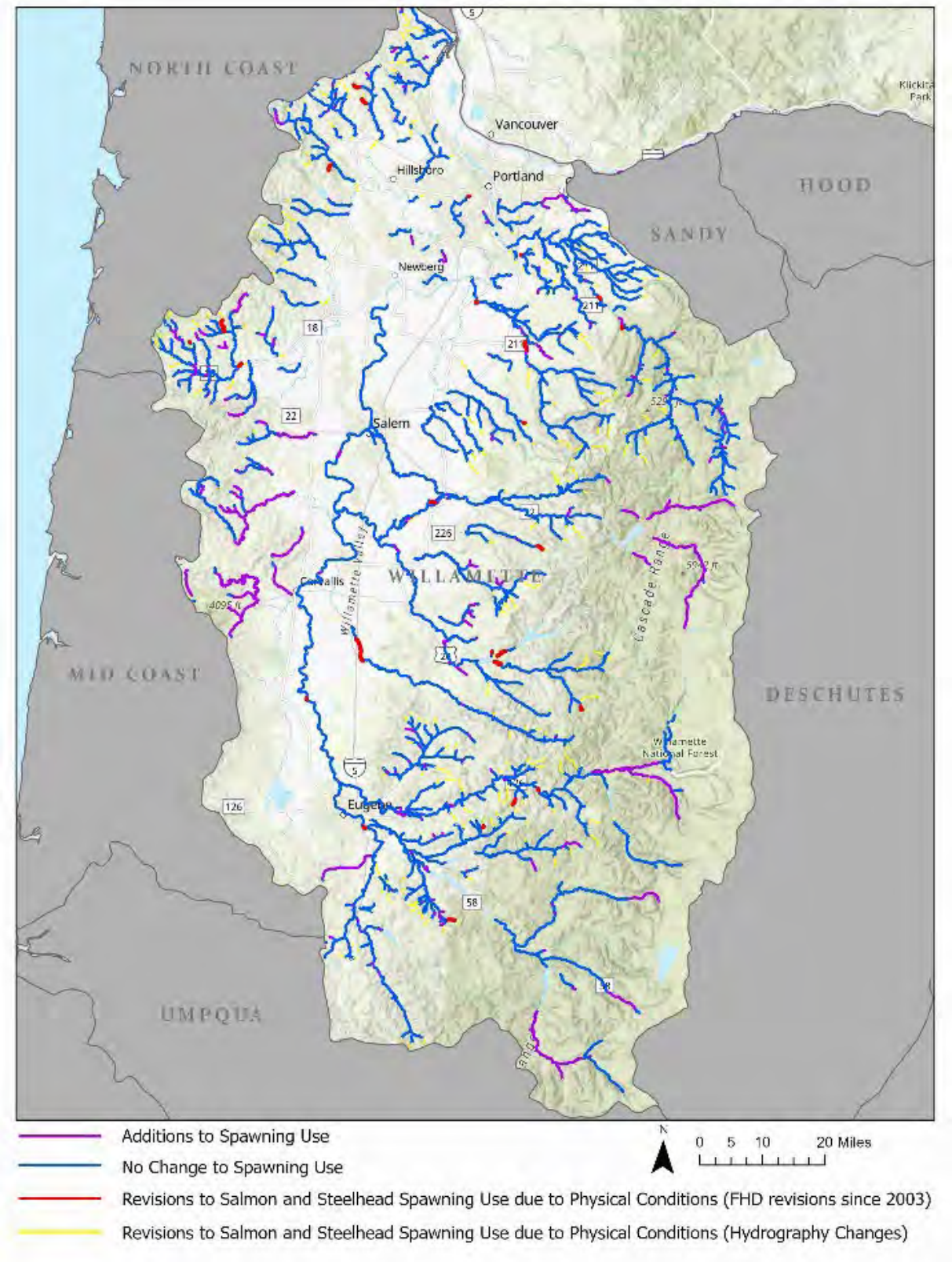

Figure B-12. Waters where Salmon and Steelhead Spawning Use is Unattainable Due to Physical Conditions, Willamette River Basin.

Maps for Spatial Revisions to Salmon and Steelhead Spawning Use Due to Improved Estuarine Mapping.

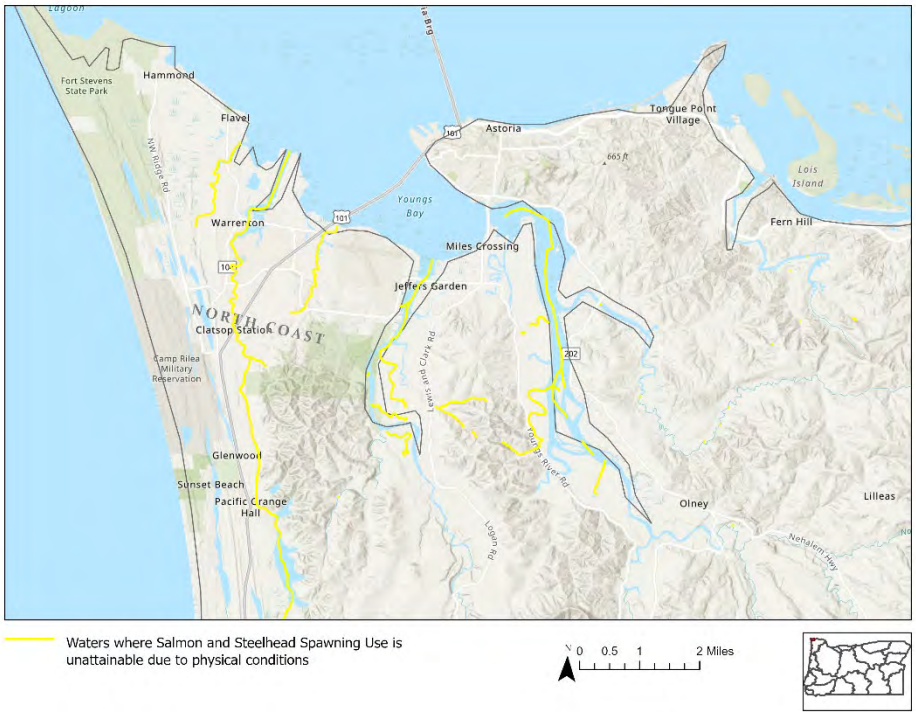

Figure B-13. Estuarine waters and tidally influenced freshwaters in Youngs Bay, Columbia Mainstem Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

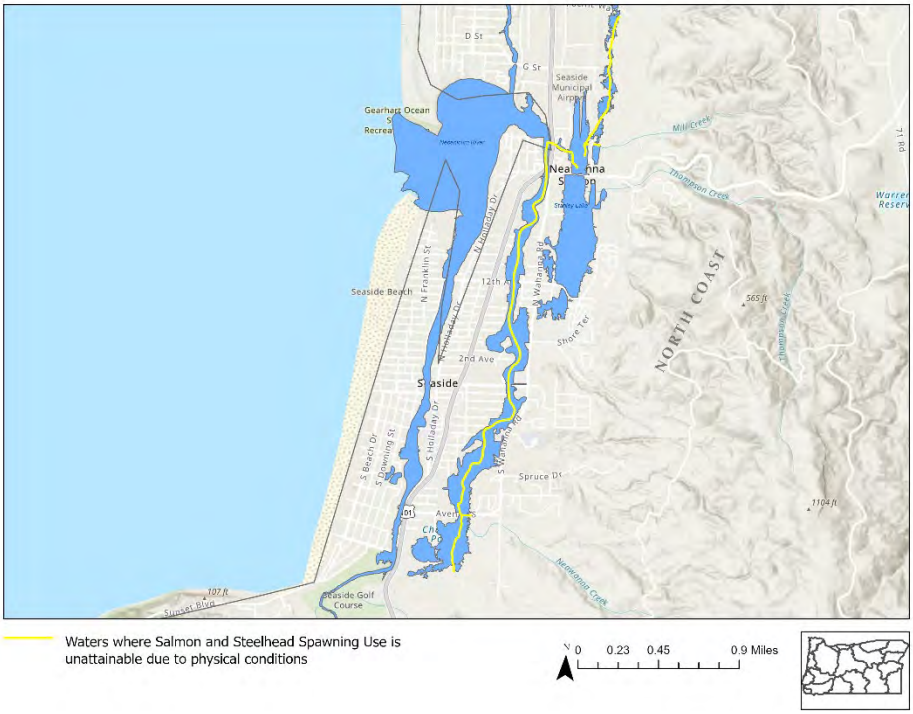

Figure B-14. Estuarine waters and tidally influenced freshwaters in Necanicum River Estuary, North Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

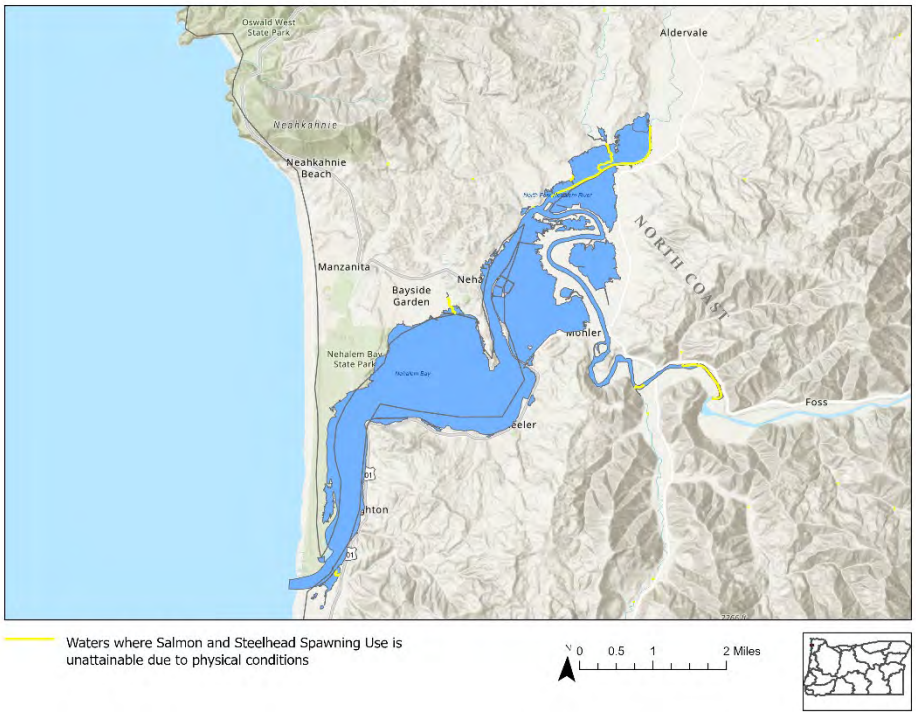

Figure B-15. Estuarine waters and tidally influenced freshwaters in Nehalem River Estuary, North Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

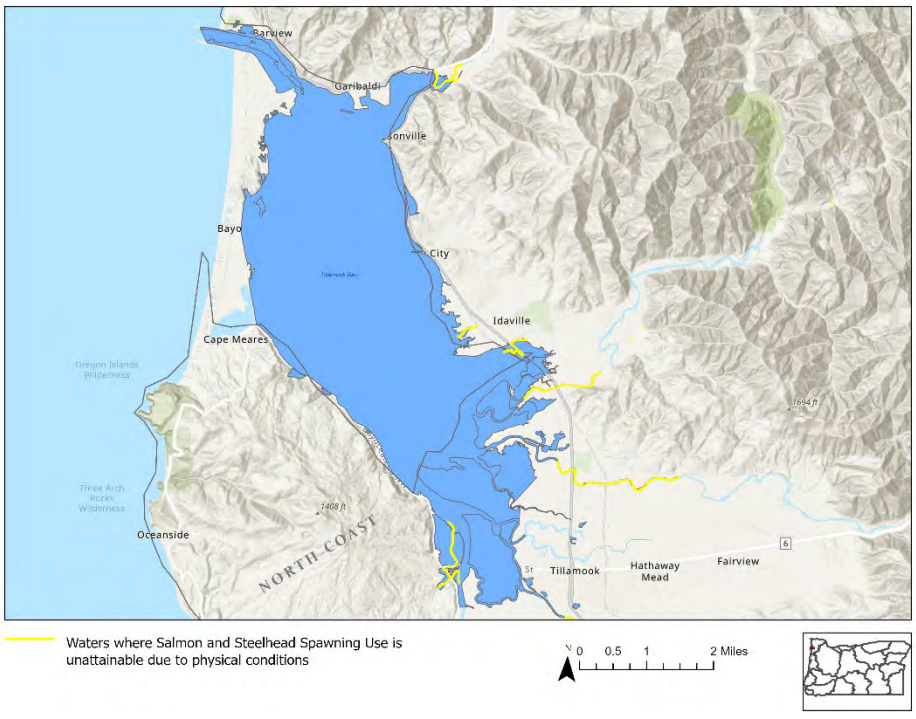

Figure B-16. Estuarine waters and tidally influenced freshwaters in Tillamook Bay, North Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

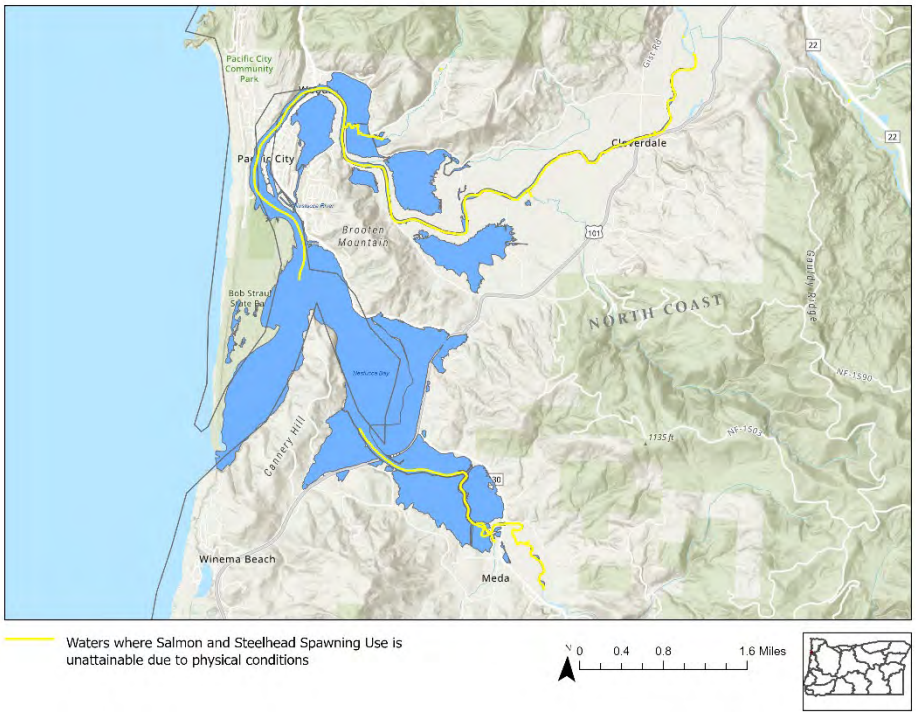

Figure B-17. Estuarine waters and tidally influenced freshwaters in Nestucca Bay, North Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

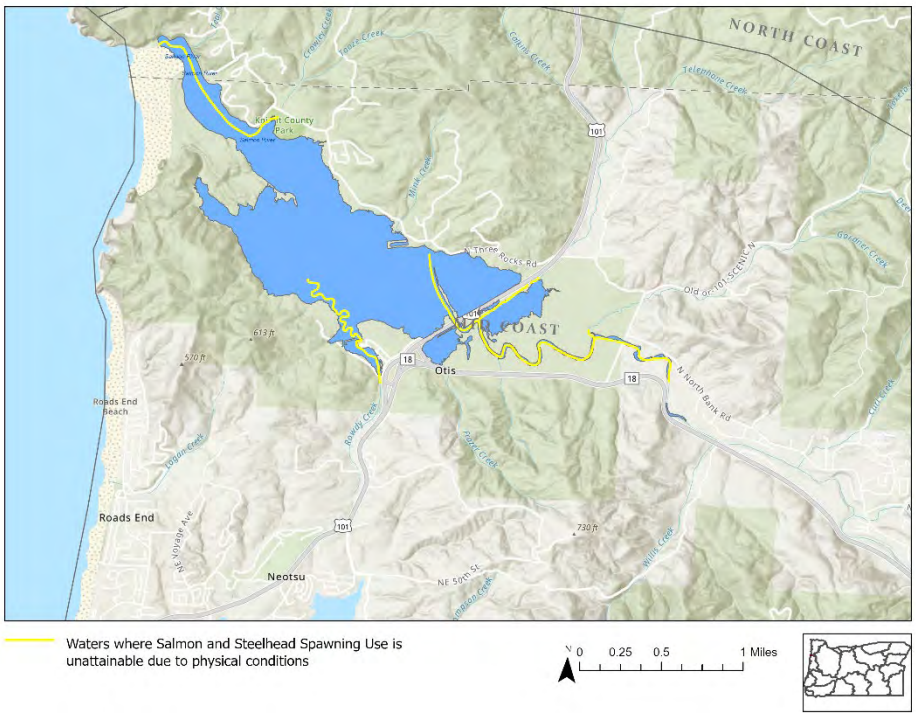

Figure B-18. Estuarine waters and tidally influenced freshwaters in Salmon River Estuary, Midcoast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

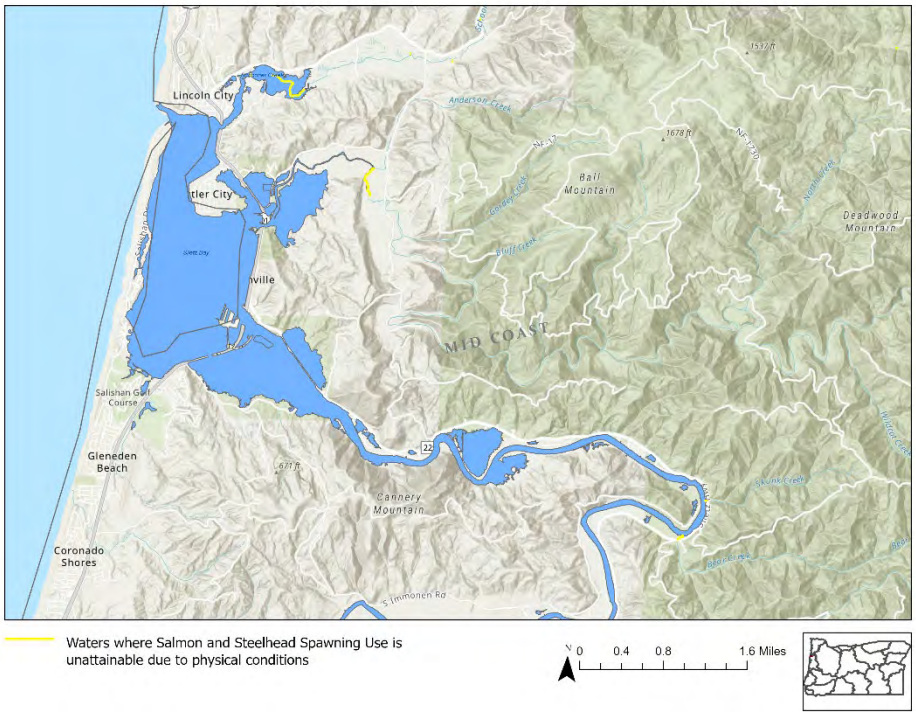

Figure B-19. Estuarine waters and tidally influenced freshwaters in Siletz Bay, Midcoast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

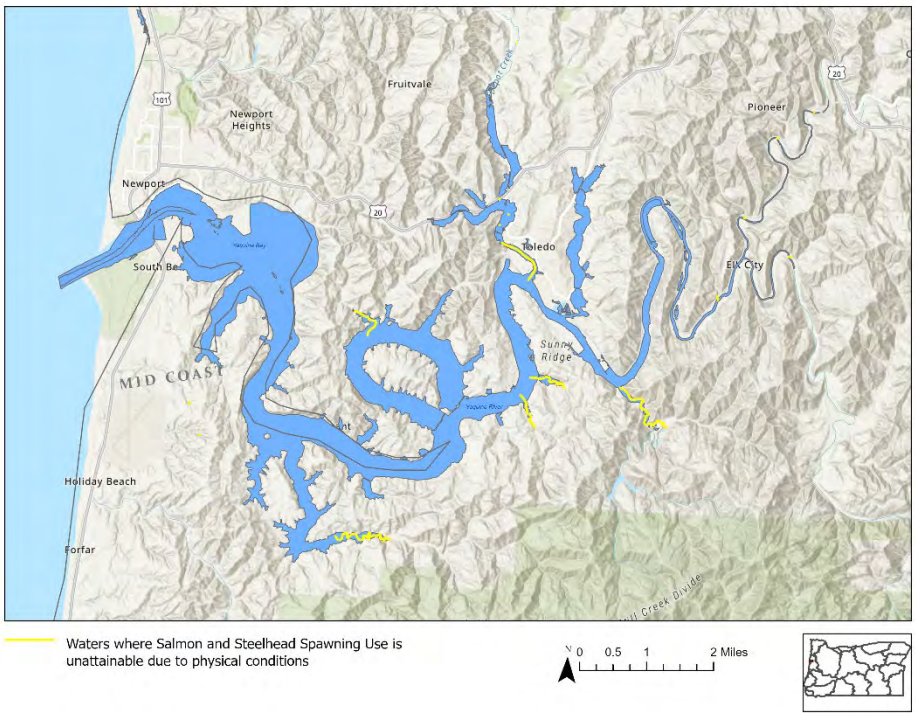

Figure B-20. Estuarine waters and tidally influenced freshwaters in Yaquina Bay and River estuary, Midcoast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

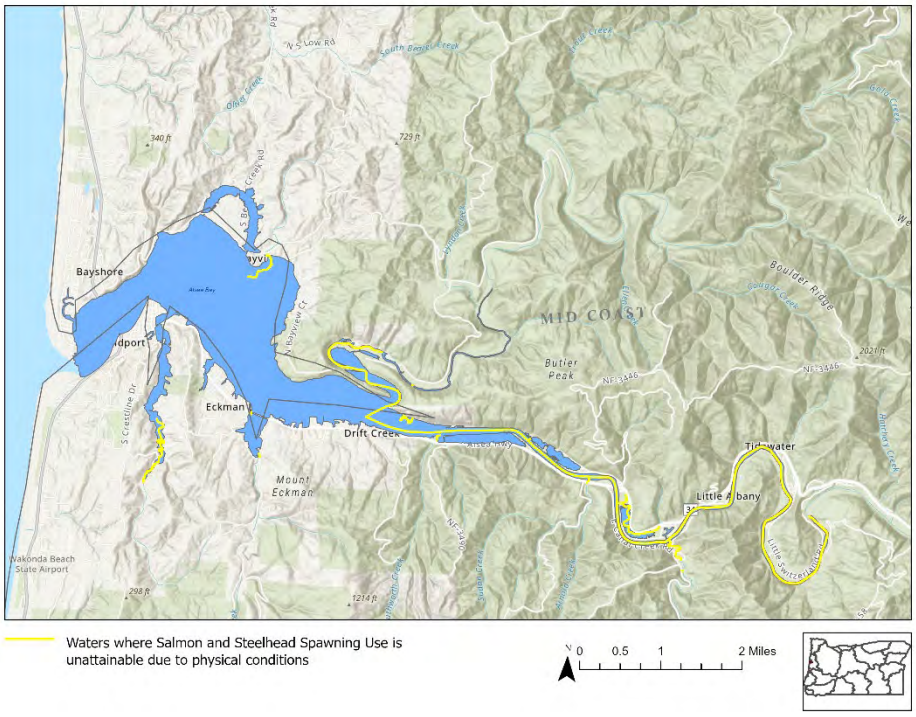

Figure B-21. Estuarine waters and tidally influenced freshwaters in Alsea Bay and River estuary, Midcoast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

Figure B-22. Estuarine waters and tidally influenced freshwaters in Siuslaw River Estuary, Midcoast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

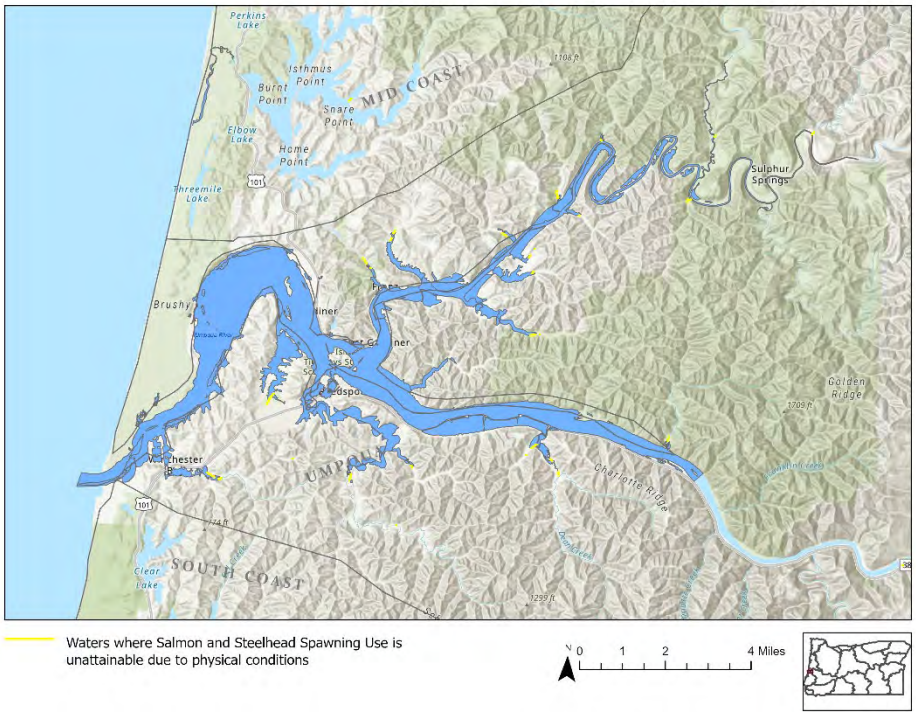

Figure B-23. Estuarine waters and tidally influenced freshwaters in Umpqua River estuary, Umpqua River Basin where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

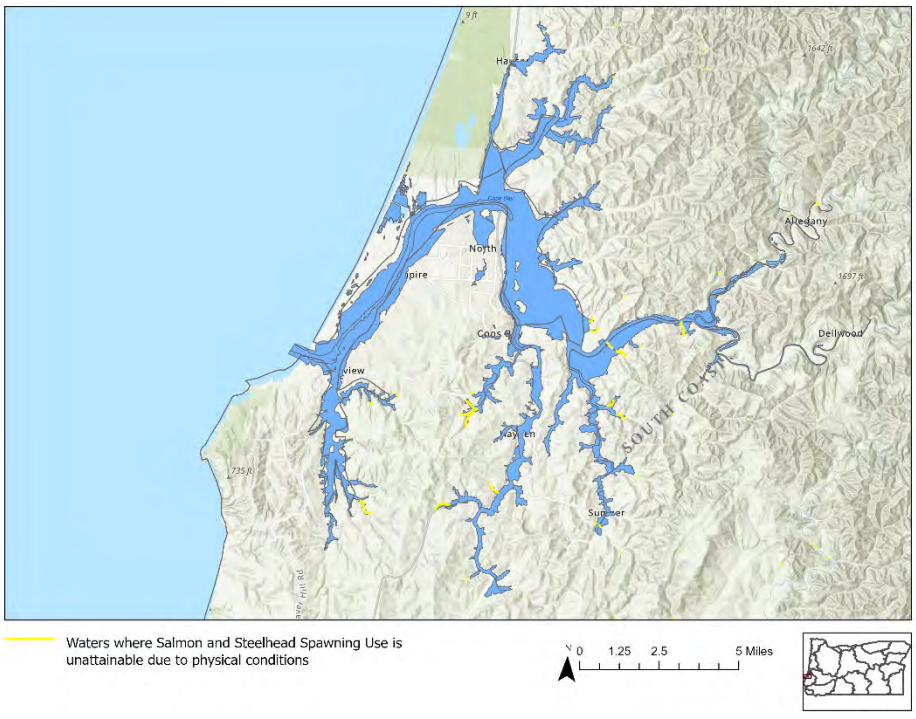

Figure B-24. Estuarine waters and tidally influenced freshwaters in Coos Bay, South Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

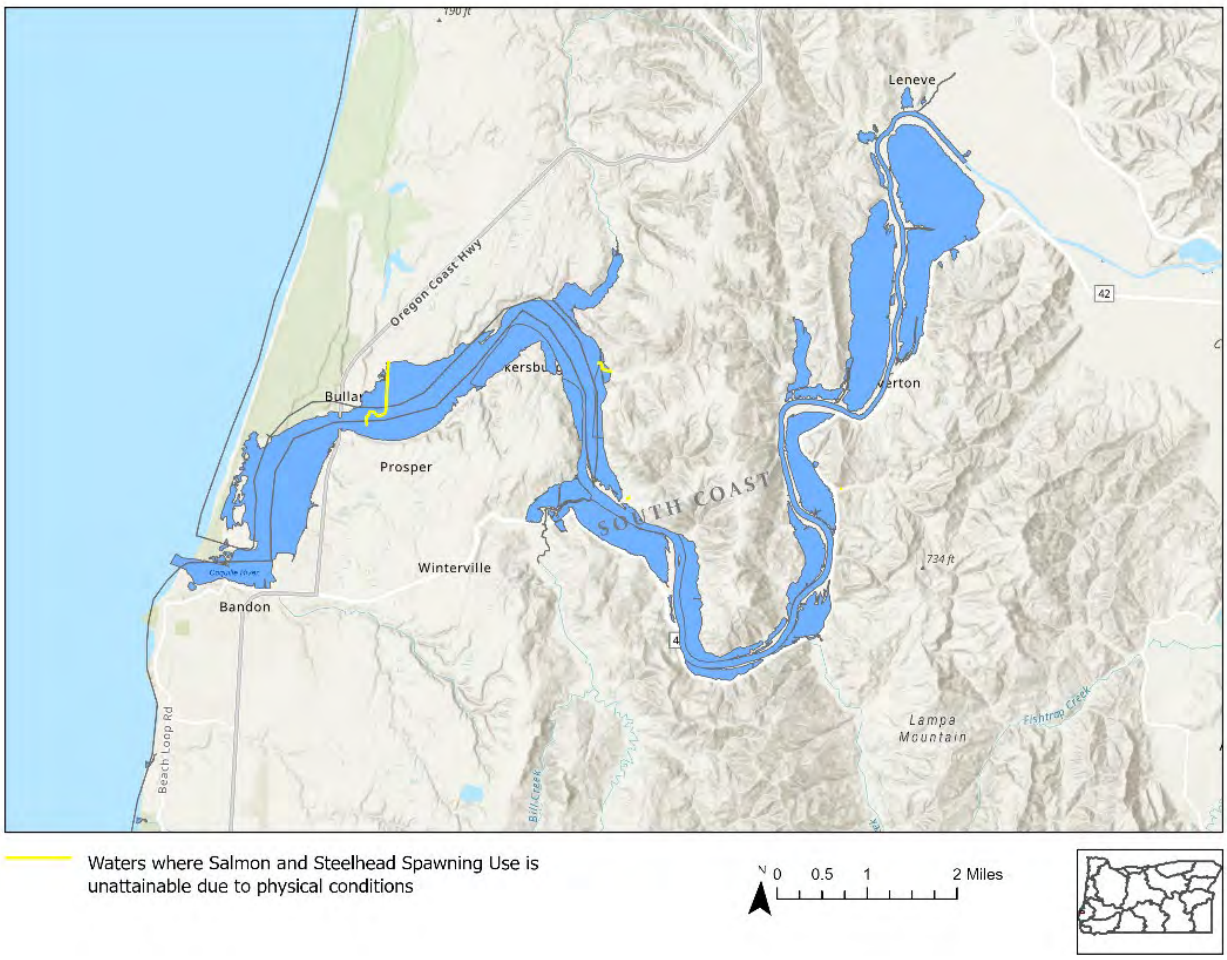

Figure B-25. Estuarine waters and tidally influenced freshwaters in Coquille River estuary, South Coast Basin, where Salmon and Steelhead Spawning Use is unattainable due to physical conditions.

Maps for Temporal Revisions to Salmon and Steelhead Spawning Use Due to Improved ODFW Information.

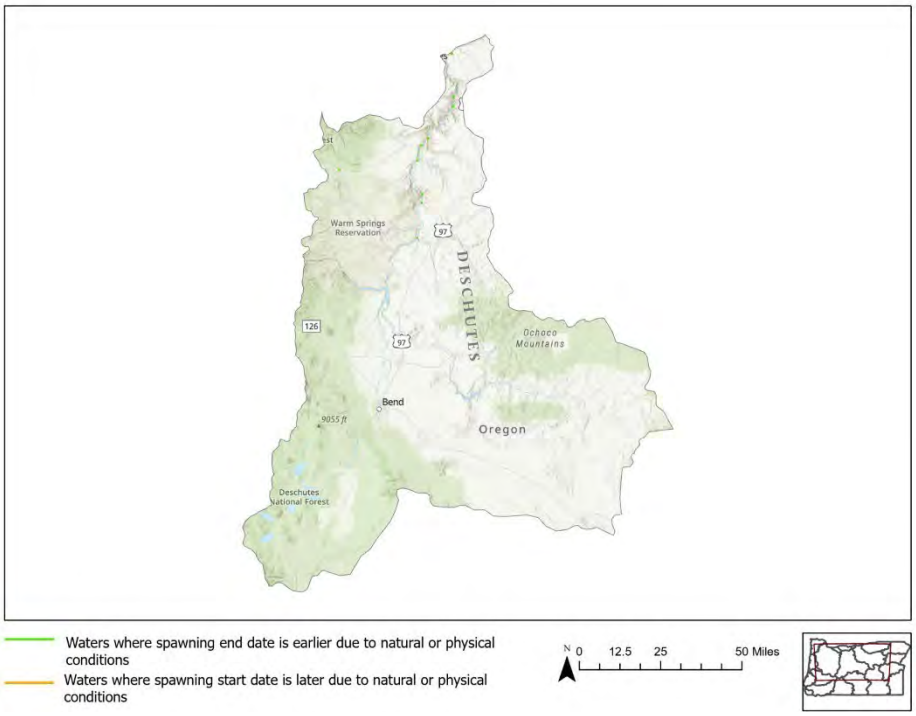

Figure B-26. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Deschutes River Basin.

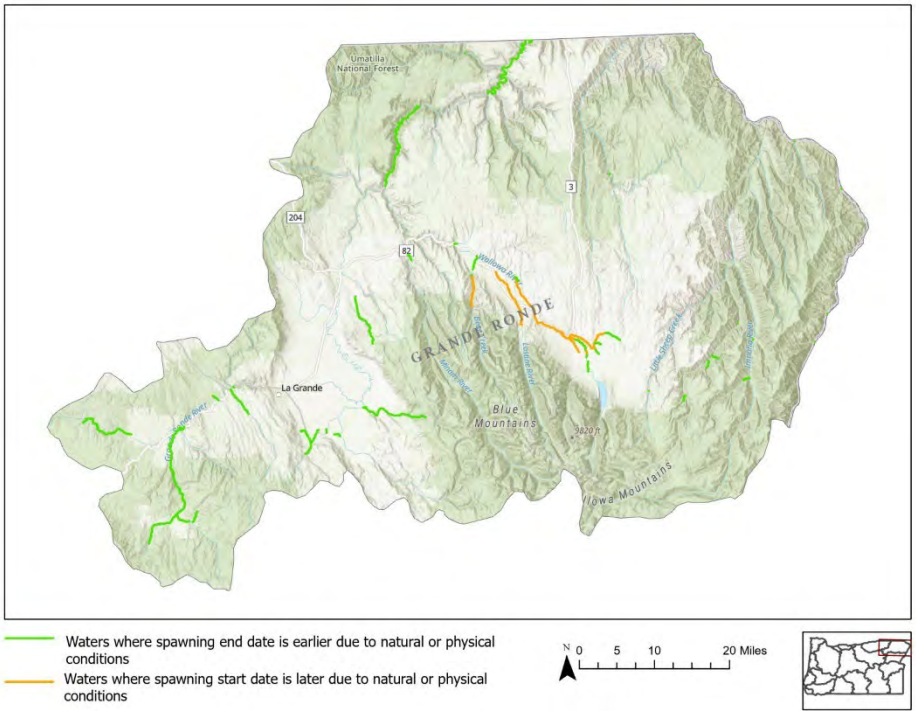

Figure B-27. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Grand Ronde River Basin.

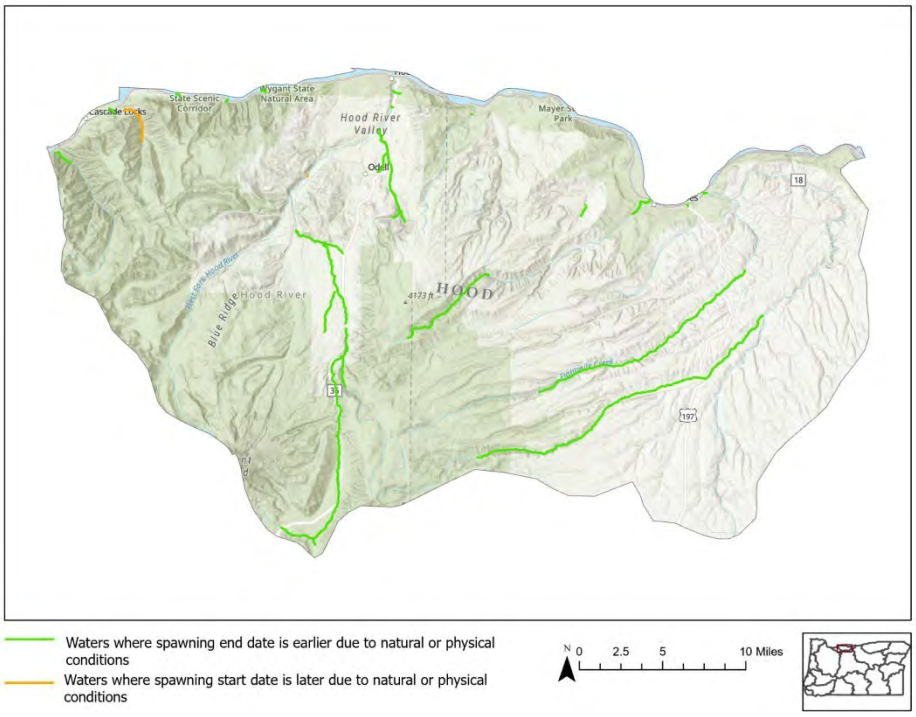

Figure B-28. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Hood River Basin.

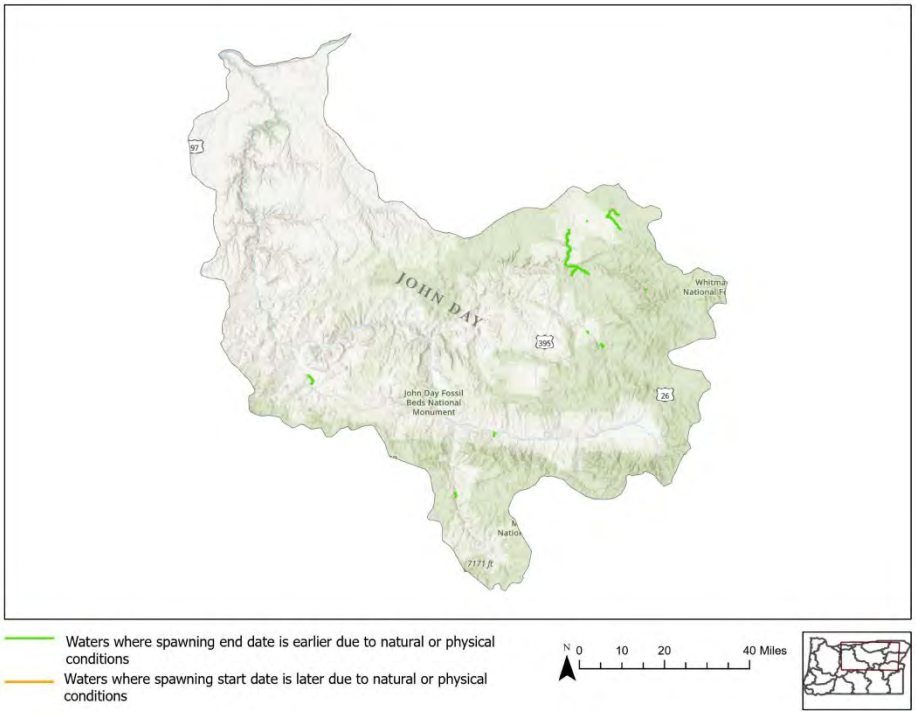

Figure B-29. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, John Day River Basin.

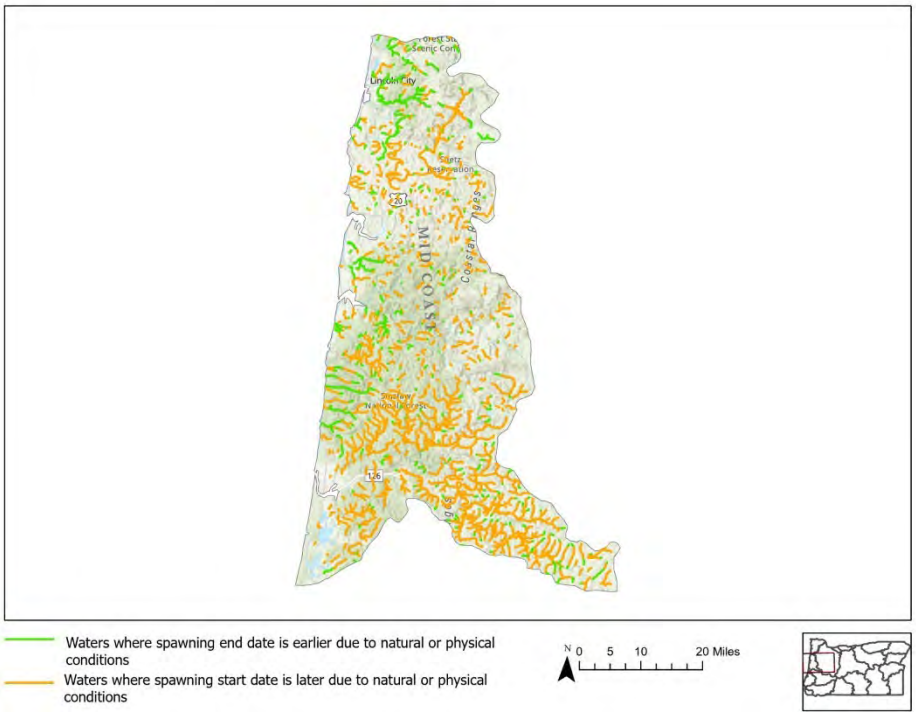

Figure B-30. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Mid Coast Basin.

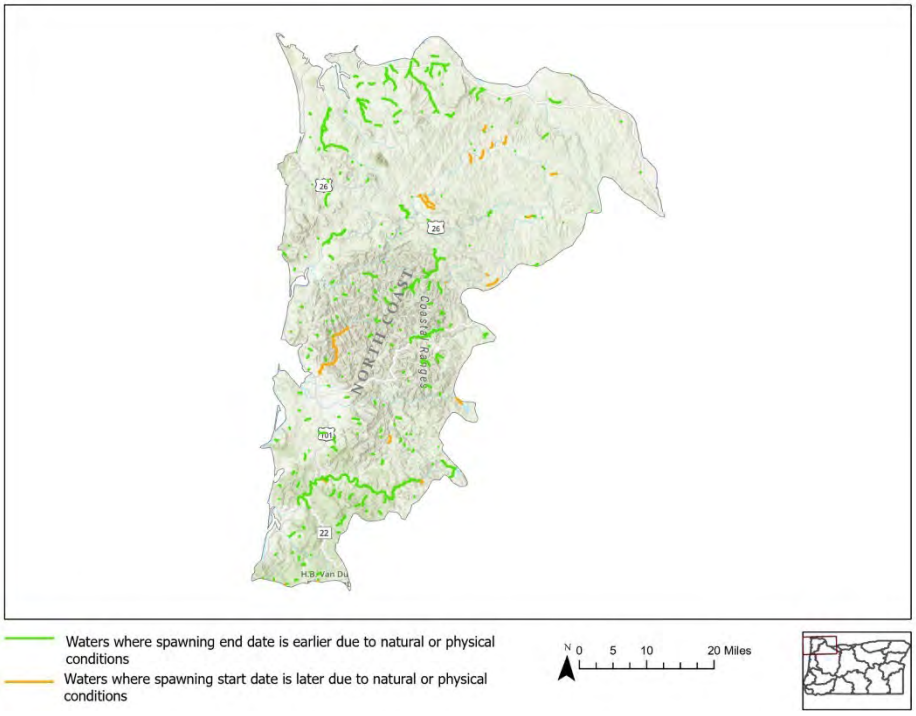

Figure B-31. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, North Coast Basin.

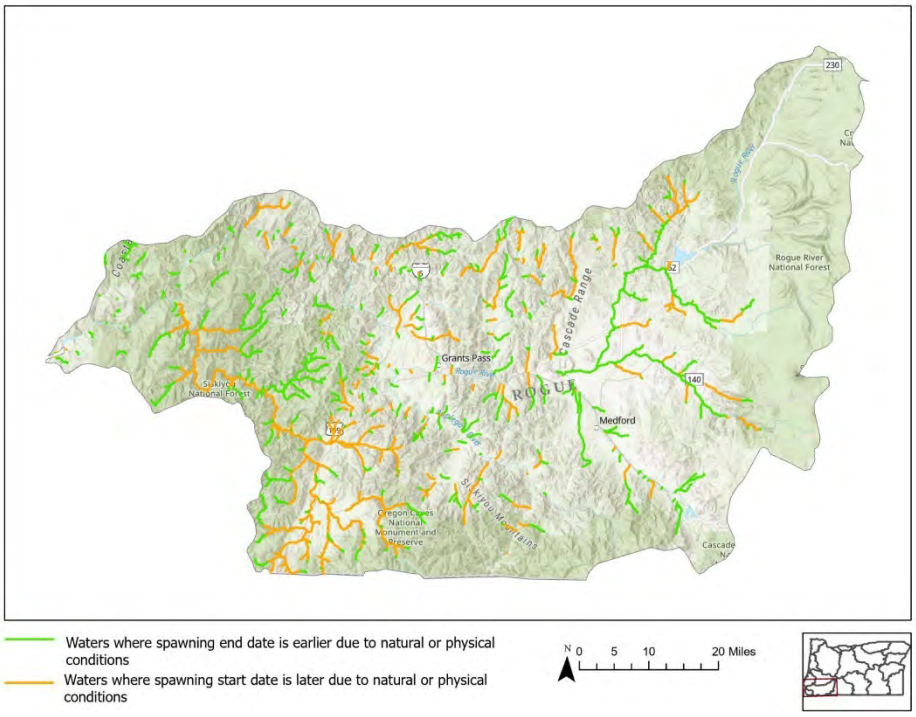

Figure B-32. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Rogue River Basin.

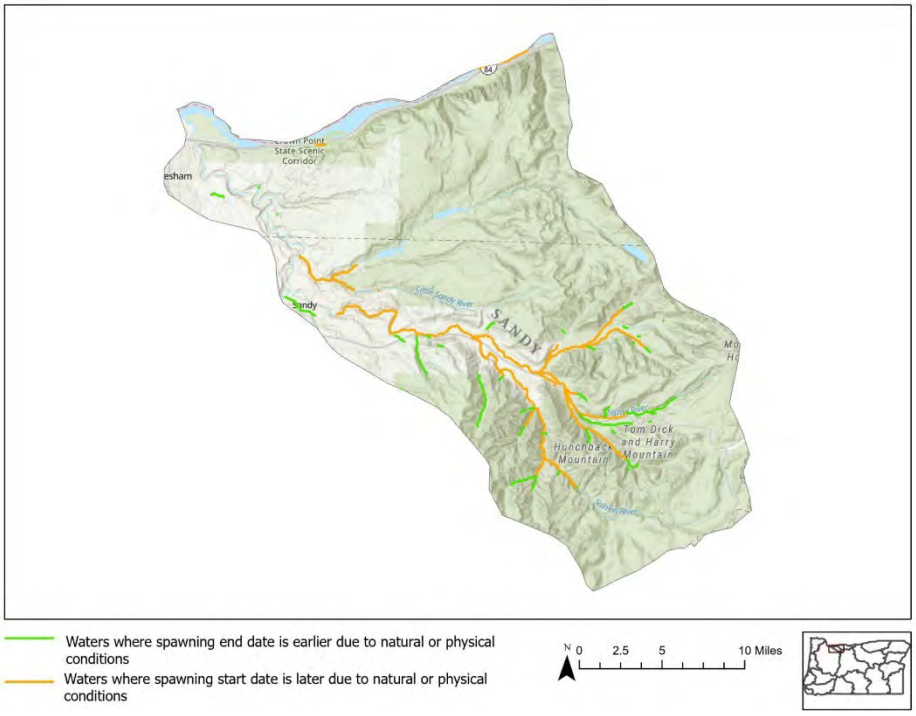

Figure B-33. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Sandy River Basin.

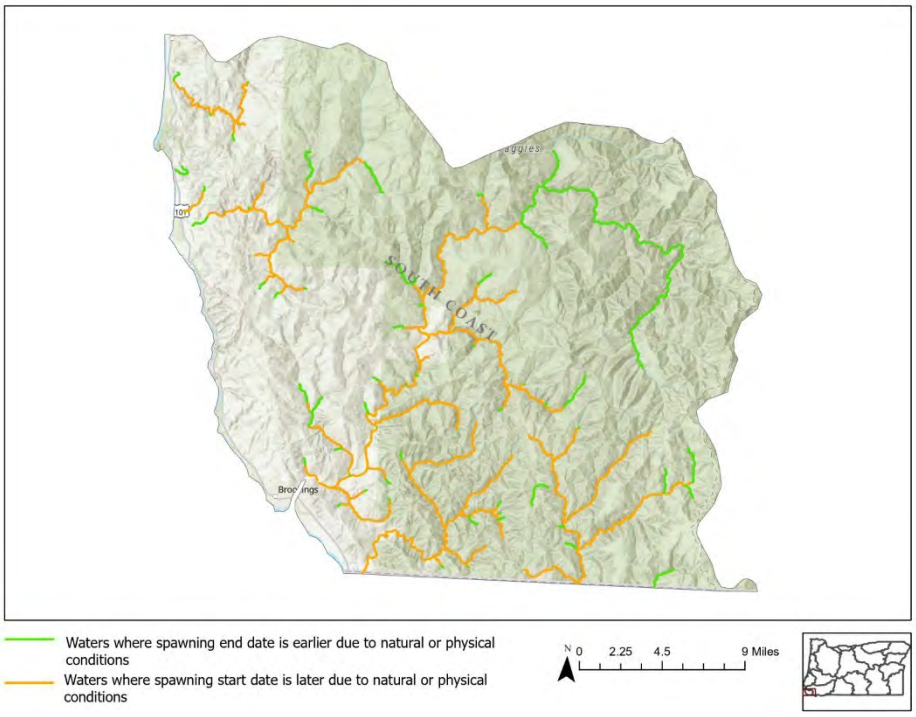

Figure B-34. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, South Coast Basin.

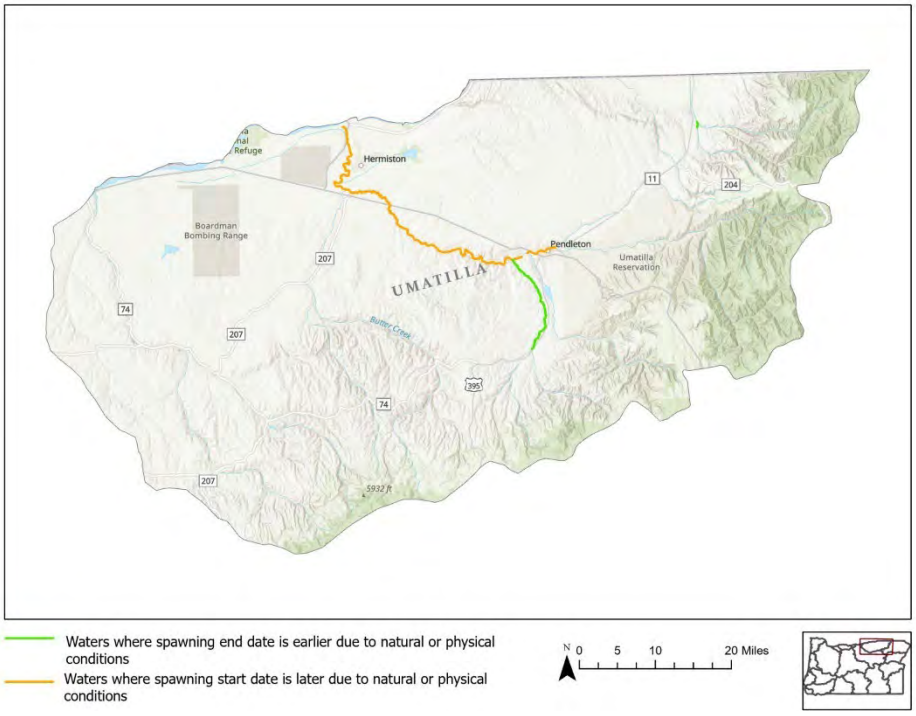

Figure B-35. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Umatilla River Basin.

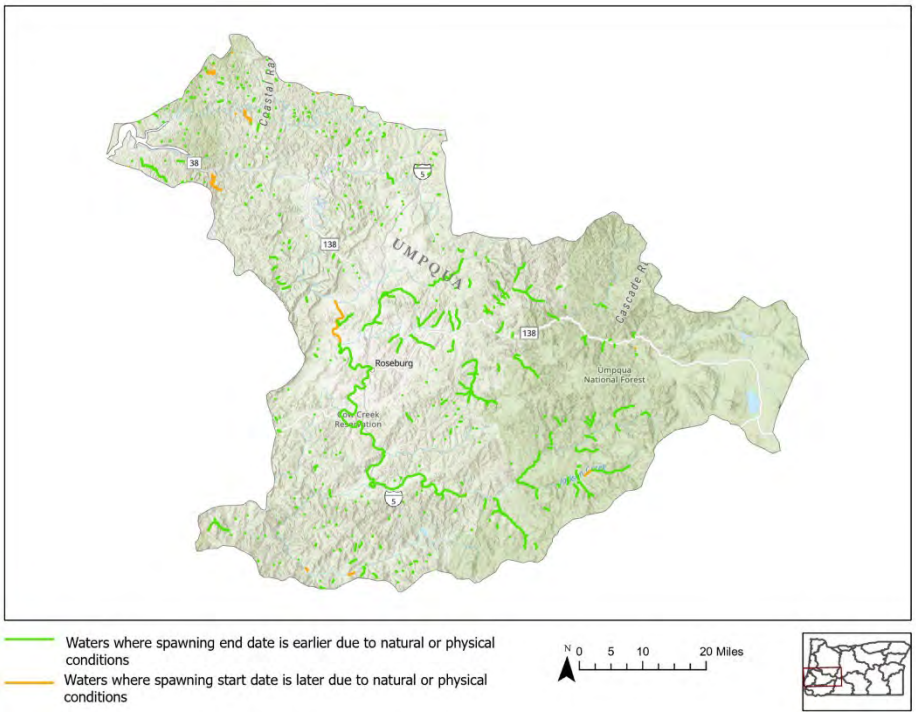

Figure B-36. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Umpqua River Basin.

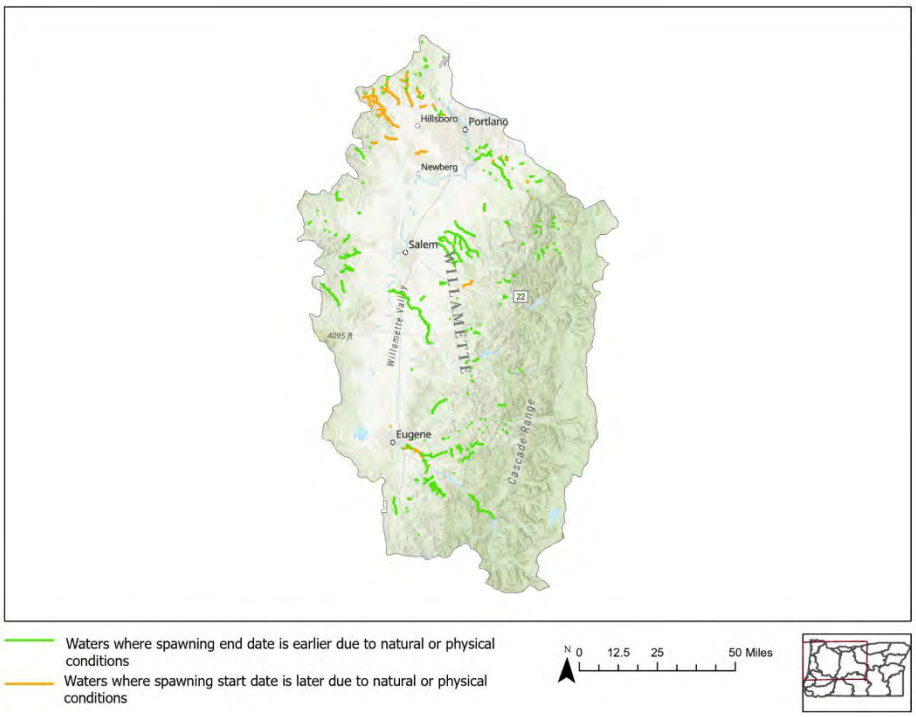

Figure B-37. Waters where DEQ is updating spawning start dates later and end dates earlier due to natural or physical conditions, Willamette River Basin.

Translation or other formats

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