

Wild Fish Conservancy

N O R T H W E S T

S C I E N C E E D U C A T I O N A D V O C A C Y

Wild Fish Conservancy Watertype Assessment Project Report S.F. Newaukum Watertype Assessment 16-1331

<http://www.moonlitgeo.com/wfc/>

December 2018

During the 2016-2017 watertype field season, Wild Fish Conservancy crews performed watertype assessment surveys on streams within the South Fork Newaukum watershed that were identified as priorities by the Chehalis Lead Entity Habitat Work Group (Figure 1). Surveys were conducted on streams at public road right-of-ways as well as on private property where landowner permission was granted. The survey methodologies and definitions of parameters are described in WAC 222-16-031 and Section 13 of the Forest Practice Board Manual.

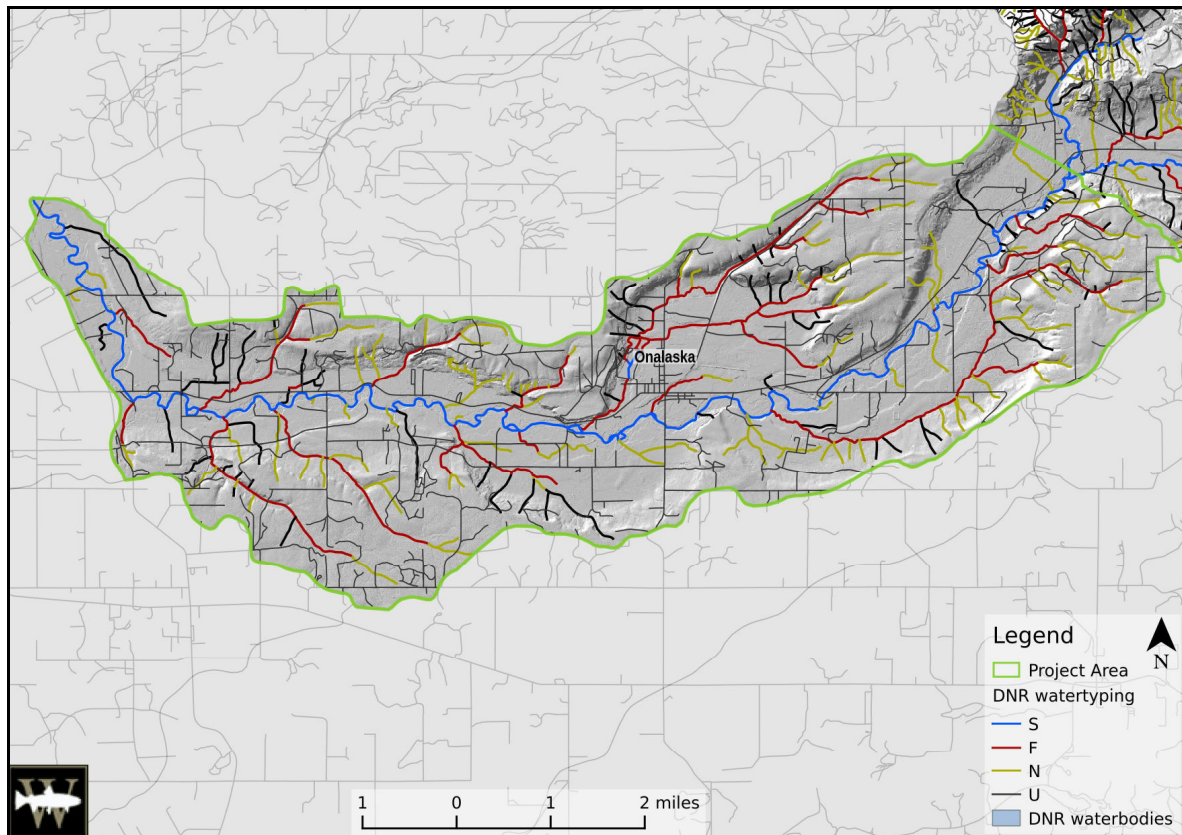


Figure 1. Extent of water type assessment surveys in S.F. Newaukum, Chehalis Watershed (WRIA 23).

The survey encompassed approximately 123 miles of streams. Over 859 photographs (with associated channel condition descriptions included wetted width, bankfull width, gradient, and temperature) are presented on WFC's interactive internet-based GIS (Figure 2).

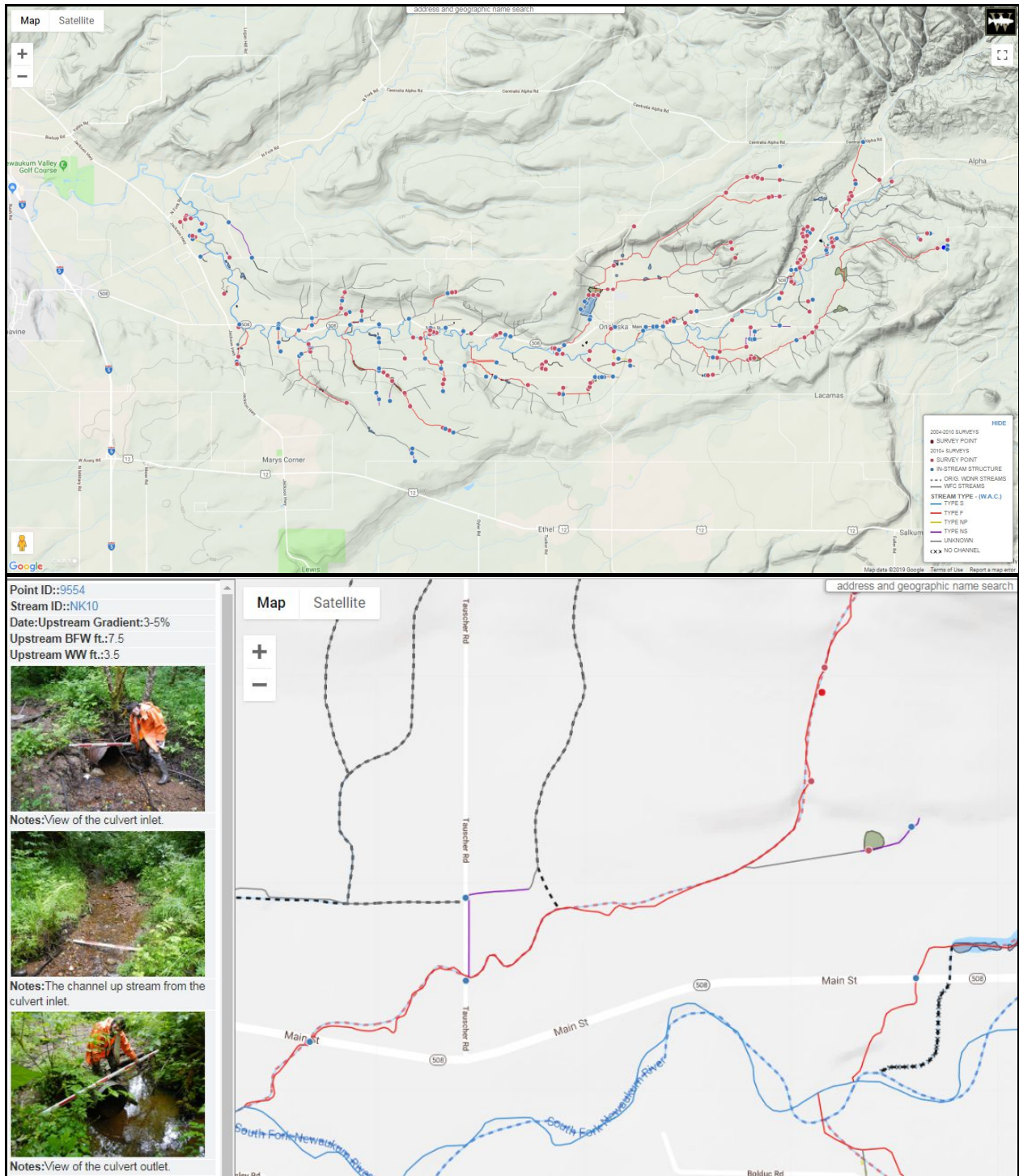


Figure 2. Screen shots from interactive web map developed to display survey data and photographs. Points on each stream are hyperlinked to data and photos collected at those locations. See: <http://www.moonlitgeo.com/wfc/>

Fish species encountered during the surveys included cutthroat trout, rainbow trout, coho salmon, sculpin, brook lamprey, 3-spined stickleback, brown bullhead, koi, and dace (Figure 3). Freshwater mussels, crayfish, amphibians, and reptiles documented by WFC crews via GPS and photographs are also viewable in the interactive GIS.

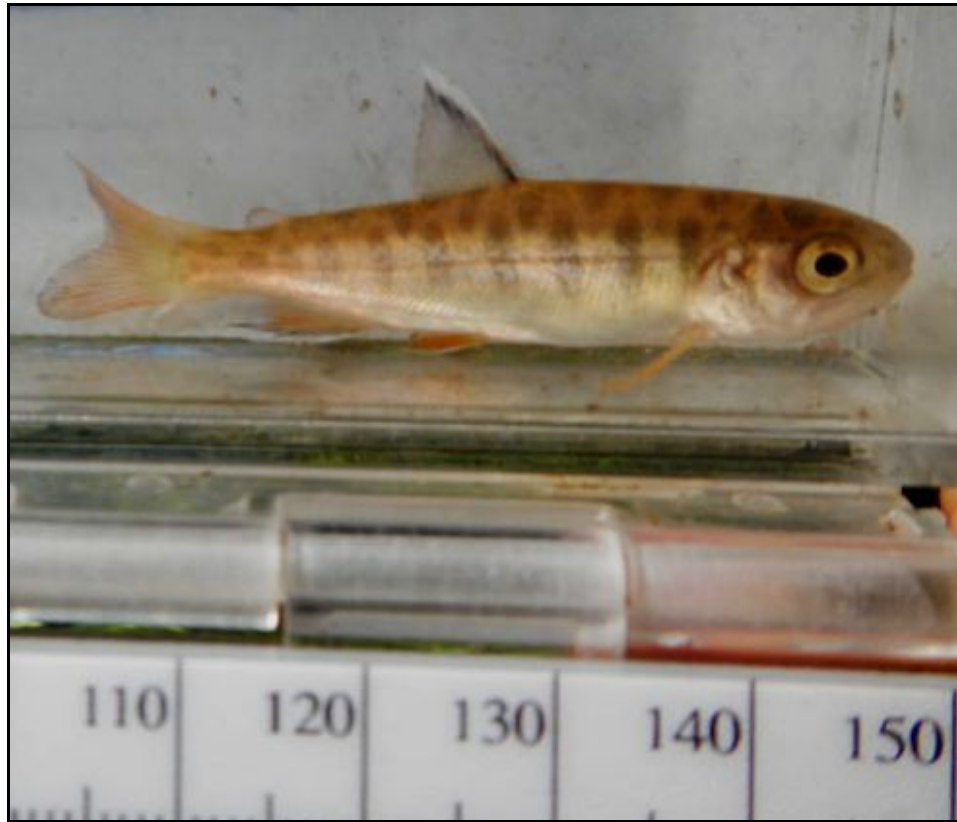


Figure 3. Juvenile coho salmon brought to hand in a South Fork Newaukum tributary.

As expected based on previous Wild Fish Conservancy water type assessments, significant discrepancies existed between the Washington Department of Natural Resources (WDNR) regulatory maps and what we found on the ground. Within the South Fork Newaukum study area WDNR had identified 105 miles of streams. WFC found that 4.6 miles of those WDNR mapped channels did not exist, but that an additional 16.2 miles of stream channels did exist that were not on the official WDNR water type maps.

During the course of the field surveys, Wild Fish Conservancy staff observed and documented habitat restoration and protection opportunities; these are presented in Appendix A. WFC will continue to coordinate with potential project sponsors at the Chehalis Habitat Work Group to develop restoration and protection projects based on these observations.

Funding for this project was provided by the Salmon Recovery Funding Board. Wild Fish Conservancy would also like to acknowledge the support and assistance provided to this project through the WRIA 22-23 Lead Entity process, including but not limited to that received from representatives of WDFW, the Lewis County Conservation District, Quinault Indian Tribe, and Lewis County.

Appendix A: Habitat Restoration Project Opportunities Identified During the Assessment

| Priority | Stream | GPS point | Problem/opportunity | Potential Solution | Comments |
|----------|-------------------|---|---|---|--|
| High | NK27 | GIS 028 point Id on web 9459 | Barrier dam | Restore fish passage after coordinating with WDFW to reduce upstream hatchery impacts. | The Carlisle Lake dam blocks over ten miles of fish habitat on Gheer Creek, one of the largest tributary basins on the SF Newaukum River. In 2017 Wild Fish Conservancy with GeoEngineers developed a conceptual design to restore fish passage at the dam, bring the dam into compliance with Dept. of Ecology Dam Safety requirements. Several additional fish passage and riparian restoration projects exist upstream from Carlisle Lake; see 2016 report prepared by WFC for Onalaska Alliance. |
| High | NK21 site # 1 | GIS 017 point Id on web 9448 | Ditched stream channel through cattle pasture. Erosion and lack of shade along the downstream channel compromises instream habitat. | Naturalize channel: increase sinuosity, add woody debris, and revegetate native riparian corridor. If it isn't already in place, install livestock exclusion fence. | The stream reach downstream from the Gish Road crossing crosses through a cattle pasture for ~2300ft down to a power line easement road. The stream reach appears to have been altered and diverted to improve drainage of the adjacent pasture. |
| High | NK21X site # 2 | GIS 053 point Id on web 9484 | Ditched stream channel along north edge of pasture. Lack of shade, instream wood, and sinuosity compromises instream habitat. | Naturalize channel: increase sinuosity, add woody debris, and revegetate native riparian corridor. If it isn't already in place, install livestock exclusion fence. | The channel to the east of Jensen Road is ditched along the edge of a pasture for ~2300ft upstream. Likely strong groundwater influence, with water temps ~13C on June 14, 2017. |
| Medium | NK01.1 | GIS 300-299 point Id on web 9632- 9636 | Spring-fed channel ditched along pasture lacks sinuosity, LWD, and riparian habitat. | Naturalize channel: increase sinuosity, add woody debris, and revegetate native riparian corridor. If it isn't already in place, install livestock exclusion fence. | The channel NK01.1 at this location is a perennial spring that was ditched and diverted for ~475ft to drain adjacent pasture land. Juvenile coho brought to hand. The channel feeds a left-bank oxbow of the SF Newaukum River. |
| Medium | NK09.1 | GIS 236 point Id on web 9543 | Stream has been ditched along west side of Guerrier Rd. Culvert nearest stream mouth is a partial barrier. The entire upstream channel for >2000ft is ditched along the road. | Remove or replace the partial barrier culvert and naturalize the upstream channel and riparian corridor. | This entire stream reach has been altered and diverted along the roadside ditch on Guerrier Road. Juvenile coho and dace were brought to hand in this reach. At its mouth the channel is culverted to prevent erosion to the bridge crossing on the SF Newaukum River. |
| Medium | NK17 | GIS 413 point Id on web 9660 | Partial barrier culvert | Replace culvert to improve fish passage | <i>This culvert is a significant barrier to fish passage. Upstream, the channel flows through forest land and would provide habitat to Coho, Steelhead and Cutthroat Trout. There is an additional culvert on SR508 downstream that is identified as a partial barrier by WDFW.</i> |
| Medium | NK28.1 | GIS 044 point Id on web 9475 | Six partial barrier culverts and ditched channel to drain fields and home sites | Replace culverts to improve fish passage naturalize channel and riparian corridor. | This stream has series of culverts that are partial barriers to fish passage. The upstream channel has been altered and relocated. Correcting the culverts and naturalizing the channel would provide habitat to Coho, Steelhead and Cutthroat Trout. There are six culverts on SR508 and on the channel downstream that are listed as a partial barriers by WDFW. |
| Medium | NK40.1 | GIS 323 point Id on web 9690, 9614 | Two partial barrier culverts and ditched channel to drain fields and home sites | Replace culverts to improve fish passage naturalize channel and riparian corridor. | This stream has two culverts that WDFW identifies as partial barriers to fish passage. Correcting the culverts and naturalizing the channel would provide habitat to Coho, Steelhead and Cutthroat Trout. Mid-June water temps of 11-13C portend groundwater influence. |
| Low | NK21A | GIS 269 point Id on web 9511 | Ditched channel to drain fields, pasture, and powerline access road | Naturalize channel: increase sinuosity, add woody debris, and revegetate native riparian corridor. | If naturalized, this reach could provide improved coho rearing habitat. |