Provisional Oregon Stream Temperature Database for Developing NorWeST Stream Climate Scenario Maps

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Legend (data contributors):
- ODFW (47)
- NezPerceTribe (17)
- CTWSRO (8)
- CTUIR (113)
- CRITFC (176)
- Burns Paiute Tribe (170)
- BLM (579)
- USGS (283)
- USFWS (38)
- ISEMP (551)
- USACE (167)
- BOR (75)
- USFS (2,351)
- Idaho Power (41)
- Partner Umpqua R (37)
- TNC (16)
- Hood R WS Group (35)
- Columbia Riverkeeper (92)
- NF John Day WC (85) *
- Insight Consultants (332) *
- Oregon DEQ (3,494) *

Land Ownership
- State
- Tribal
- BLM
- USFS

Temperature (°C) graph with axes Temperature (°C) vs Time (values 6, 8, 10, 12, 14, 16)
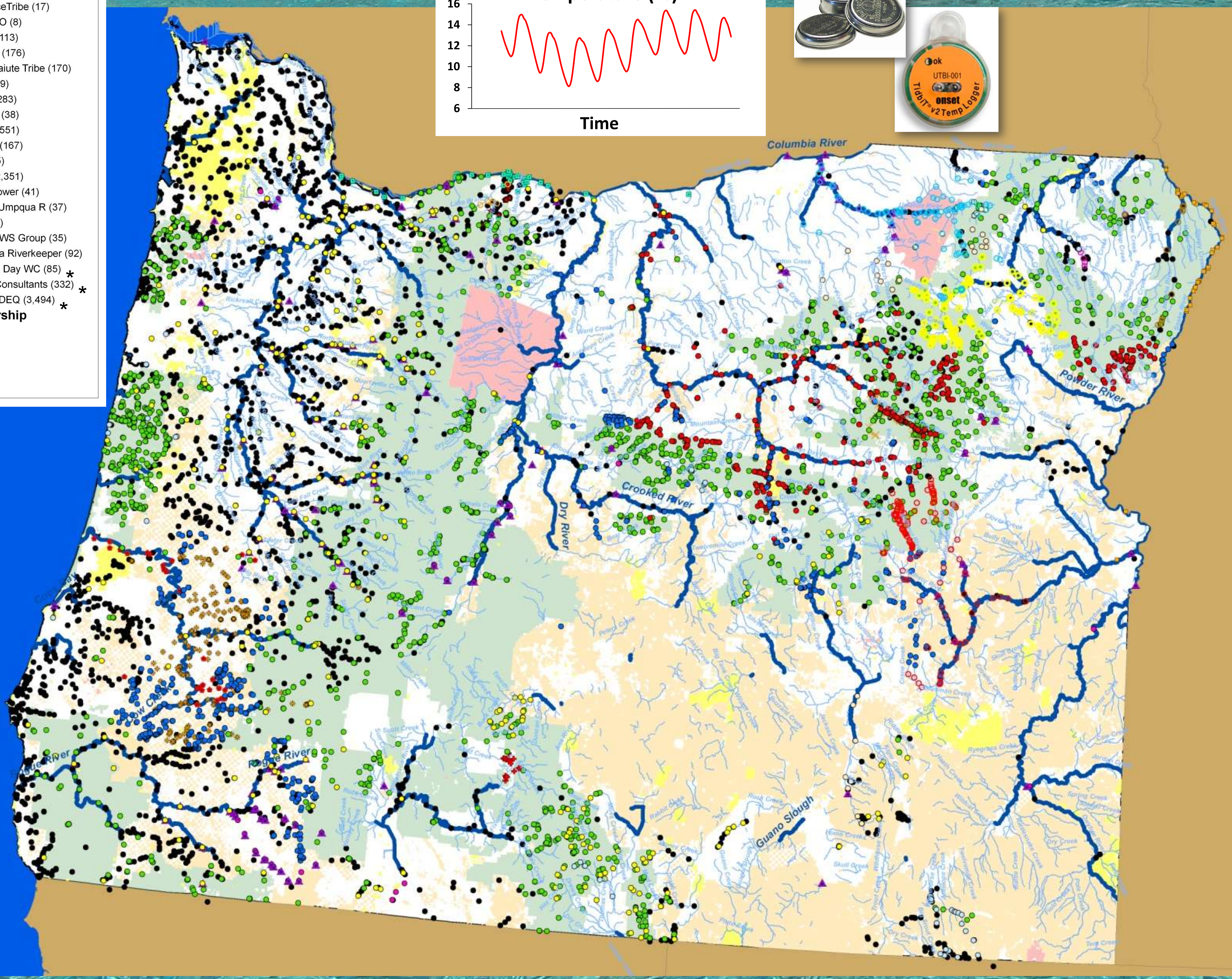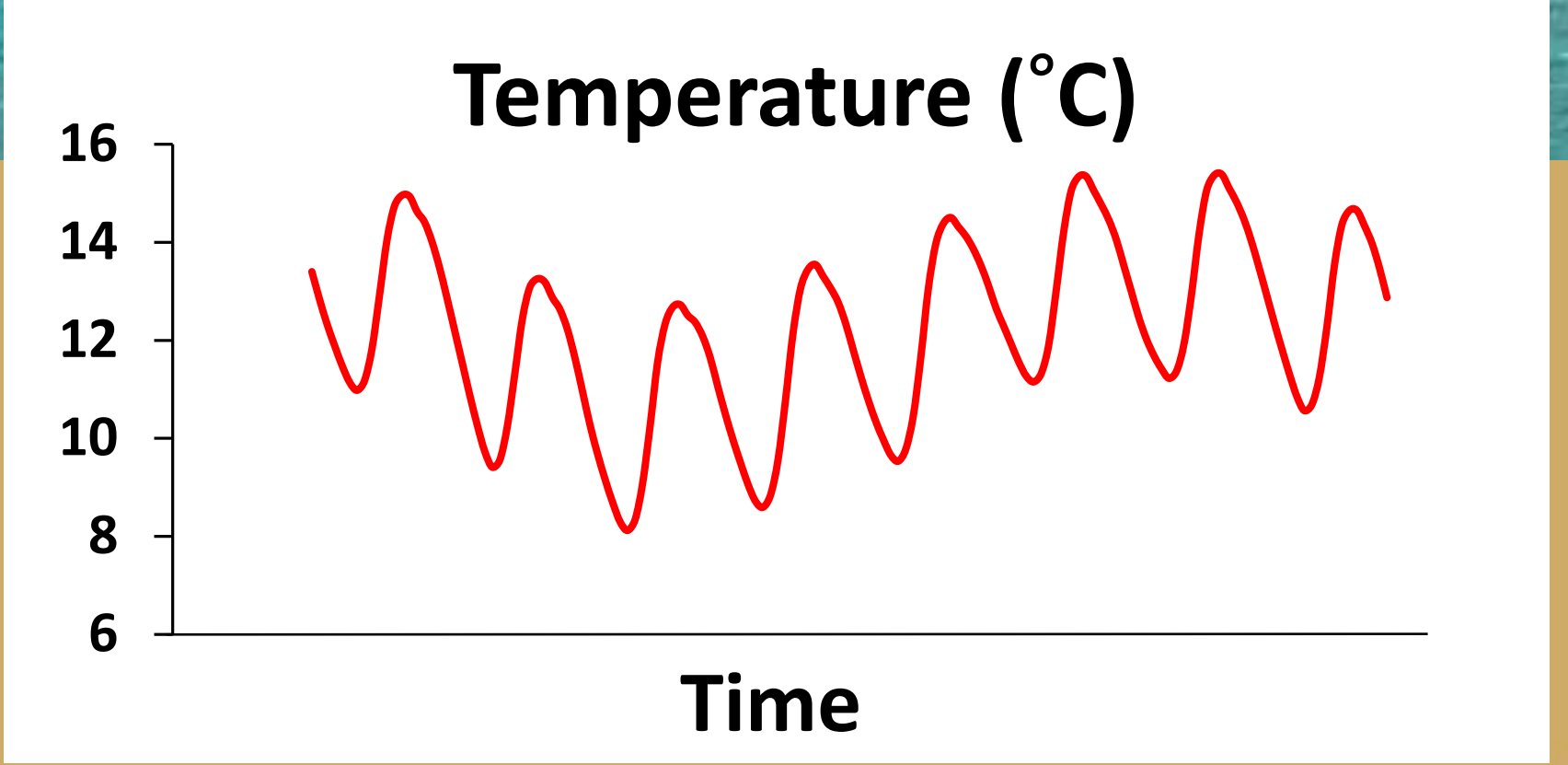
This poster shows the locations of stream temperature data from Oregon that have been contributed to the NorWeST regional stream temperature database and model project (Isaak et al. 2011). During the next year, these data (and any other data contributed soon) will be integrated into a functional, interagency database and used to parameterize a spatial statistical network model (see companion poster; Ver Hoef et al. 2006; Isaak et al. 2010) that enables accurate predictions among temperature measurement sites. The temperature model will then be used to develop a set of high-resolution (1 kilometer) digital maps that represent historical and future climate scenarios in all streams. Additional details regarding the NorWeST project and temperature model are at this website (www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html); and details regarding the spatial statistical stream network models are at the SSN/STARS website (www.fs.fed.us/rm/boise/AWAE/projects/SpatialStreamNetworks.shtml).

The graphic below shows the project status and anticipated timelines. If you would like to contribute temperature data to this project, please contact Dan Isaak (disaak@fs.fed.us, 208.373.4385) or a member of our database team (Sherry Wollrab, sherrywollrab@fs.fed.us, 208.373.4371; Gwynne Chandler, gchandler@fs.fed.us, 208.373.4372; Dona Horan, dhoran@fs.fed.us, 208.373.4399). Contributing data is easy through a dedicated ftp site (ftp://ftp2.fs.fed.us/incoming/rmrs/boise/GNLCC/) and doing so ensures it becomes part of an important regional archive while also making the temperature model predictions in the final scenario maps more accurate. Upon completion of the model scenarios within each part of the state (typically data from one or two 3rd code HUCs are modeled simultaneously), an ArcGIS layer with the information is posted to the NorWeST project website for use by the aquatics community. Raw temperature data are also posted to the website at that time if permission was given for their distribution. All data distributed through the website are attributed to the original source agency and contributing biologists/hydrologists in metadata files.
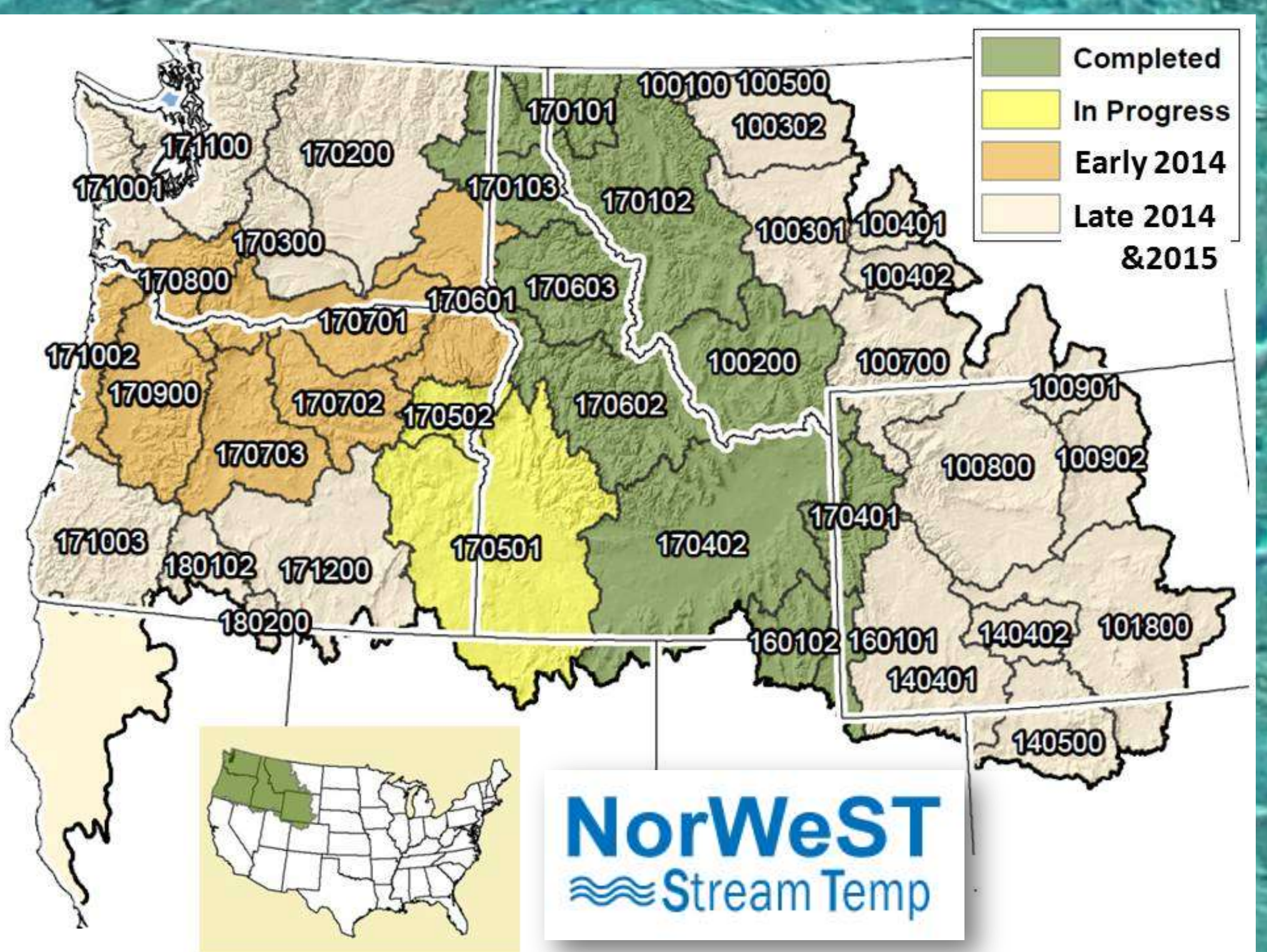
References

Isaak, D.J., C. Luce, B.E. Rieman, D. Nagel, E. Peterson, D. Horan, S. Parkes, and G. Chandler. 2010. Effects of climate change and recent wildfires on stream temperature and thermal habitats for two salmonids in a mountain river network. *Ecological Applications* 20:1350-1371.

Isaak, D.J., S.J. Wenger, E.E. Peterson, J. M. Ver Hoef, S. Hostetler, C.H. Luce, J.B. Dunham, J. Kershner, B.B. Roper, D. Nagel, G. Chandler, S. Parkes, and S. Wollrab. 2011. NorWeST: An interagency stream temperature database and model for the Northwest United States. U.S. Fish and Wildlife Service, Great Northern and North Pacific Landscape Conservation Cooperative grants. Project website: www.fs.fed.us/rm/boise/AWAE/projects/NorWeST.html

Ver Hoef, J.M., E.E. Peterson, and D.M. Theobald. 2006. Spatial statistical models that use flow and stream distance. *Environmental and Ecological Statistics* 13:449-464.

Ver Hoef, J.M., E.E. Peterson, D. Clifford, and R. Shah. 2013. SSN: An R package for spatial statistical modeling on stream networks. *Journal of Statistical Software* X:xxx-xxx.

NorWeST completion map legend:
- Completed
- In Progress
- Early 2014
- Late 2014 & 2015

NorWeST Stream Temp

*These data contributors provided information for multiple entities:
1) North Fork John Day Watershed Council (CTWSRO, USFS, ODFW, TNC, North Fork John Day WC)
2) InSight Consultants (BLM, Oregon DEQ, USFS, Oregon Dept. of Forestry, Roseburg Forest Products, Umpqua Basin WC)
3) Oregon DEQ (Alsea WC, Applegate WC, BLM, Crooked River WC, Friends of Beaver Creek, Grande Ronde Model Watershed, Greater Yamhill WC, Hood River WC, Hyla Woods, Illinois Valley Soil and Water CD, Insight Consultants, Klamath Tribes, Lincoln County Soil and Water CD, Little Butte/Upper Rogue, Long Tom WC, Lost Creek WC, Lower Columbia WC, Marys RiverWC, Medford Water Commission, Middle Rogue WC, Monument Soil and Water CD, USFS, Nestucca-Neskowin WC, North Santium WC, Oregon DEQ, ODFW, Pacifcorp, Portland, Bureau of Water Works, Pudding River WC, City of Salem, Salmon/Drift Creek WC, Scappoose WC, SECOR, Siuslaw WC, South Coast and Lower Rogue WCs, South Santium WC, St. Helens/Boise Cascade, Tillamook Estuary Partnership WSC, Tillamook WC, Deschutes WC, Upper Nehalem WC, Bureau of Reclamation, EPA, Walla Wall WC, WASCO County Soil and Water CD, Weyerhauser, Willamette Riverkeeper, Williamson River WC, Yachats WC)