

**Implementing effective adaptive management to meet project goals in the face of unforeseen and changing conditions: A case study regarding the interaction of a mosaic wetland on Indian lands and the construction of a fish passable culvert under the state highway.**

**Ann Boeholt**

Atlas Technical Consultants  
3600 Port of Tacoma Rd, Suite 506  
Tacoma WA 98424  
2536864272  
Email: [ann.boeholt@oneatlas.com](mailto:ann.boeholt@oneatlas.com)

and

**Camille Felkins**

Pacific Salmon have been a part of the cultures of Pacific Northwest Indian Tribes for 400 to 700 generations.

The Washington State Department of Transportation, in the 1990s, partnered with the Tribes and the Department of Fish and Wildlife to identify and correct fish passage barriers caused by the State Highway system. However, in 2001, tribes sued the State over habitat loss from state-owned barriers along the highway systems, resulting in a permanent injunction requiring all barriers within the Medicine Creek Treaty area be corrected by the year 2030.

Barrier ID #990548, along Washington State Coastal Highway 101, was corrected in 2025. At the close of construction, a high flow event led to Harlow Creek overtopping its banks and carving overflow channels across the newly graded wetland 7/8 adjacent to Harlow Creek. This created new flow paths through the wetland restoration, presenting challenges in accomplishing wetland restoration and site stabilization per permit requirements.

Wetland 7/8 is a mosaic wetland located within the Quinault Indian Reservation. Corrections required coordination between the State Departments of Transportation and Fish and Wildlife, The Quinault Indian Nation, Corps of Engineers, and EPA. Challenges included that this occurred during the federal government shutdown in late 2025 and that the site is closed to in-stream work during all but a narrow construction window.

Atlas and WSDOT coordinated with agencies and the Tribe and it was determined to install minimal erosion control BMPs in the short term and to continue to monitor the site while a longer term solution is developed. Monitoring allows the team to accommodate the natural conditions of the new system in the final design. The longer

term solution would include the establishment of stabilized overflow channels through the wetland/floodplain and is expected to be allowed due to the mosaic character of the wetland.