



## EDUCATION

M.S., Environmental Horticulture and Urban Forestry, University of Washington, 2004

B.S., Ecology and Field Botany, The Evergreen State College, 1994

Professional Short Courses:

- Wetland Rating System for Western Washington
- Oregon Rapid Wetland Assessment Protocol (ORWAP) Training
- DSL Guidelines for Mitigation Monitoring Training
- Using the Field Indicators for Hydric Soils Training

## PROFESSIONAL REGISTRATIONS & MEMBERSHIPS

Society for Ecological Restoration

Society of Wetland Scientists, Pacific Northwest Chapter

## EXPERIENCE

Senior Wetland Ecologist and Plant Biologist, Cascade Environmental Group, LLC, Portland, Oregon, May 2011 – Present

Senior Wetland Ecologist and Plant Biologist, ICF/Jones & Stokes, Portland, Oregon, January 2006 – May 2011

Restoration and Wetland Ecologist, Restoration Logistics, Seattle, Washington, June 2004 – January 2006

Research and Teaching Assistant, Center for Urban Horticulture/College of Forest Resources, Seattle, Washington, September 2001 – June 2004

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## QUALIFICATIONS

Ms. Tammy Stout is a Senior Wetland Biologist with Cascade Environmental Group, LLC, and is responsible for overseeing technical studies and providing project management support. Tammy has over 25 years of experience conducting ecological studies throughout Washington and Oregon. Tammy brings extensive experience serving as the Project Manager for projects dealing with aquatic resources, functions assessment, monitoring, and mitigation for wetland and restoration projects. She has conducted several wetland and botanical studies for wetland restoration and salmon recovery projects in both eastern Washington and Oregon. She has assisted with the development of wetland mitigation and restoration plans, regulatory support, and permitting for many other entities throughout Washington and Oregon. Tammy has work experience in a broad range of ecological settings, including the Puget Lowlands, estuarine, mid-elevation mountains, deserts of Eastern Washington and Oregon, and throughout the Willamette Valley.

Tammy's specific expertise includes wetland delineation and functional assessments, vegetation assessments, restoration and mitigation project management, site design, document preparation, permitting, restoration implementation oversight, monitoring, and compliance assessments. She is experienced in using both the *Regional Supplement to the USACE Wetland Delineation Manual: Arid West Region* (Version 2.0) and the *Regional Supplement to the USACE Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region* (Version 2.0) for delineations. She also has functional assessment and rating system experience with the *Wetland Rating System for Western Washington*, *Washington State Wetland Function Assessment Method (WFAM)*, and the *Oregon Rapid Wetland Assessment Protocol (ORWAP)*. Additionally, Tammy has strong skills in technical writing, field coordination, data management, and data analysis.

## SELECTED PROJECTS

### **Kwoneesum Dam Removal Project – Cowlitz Indian Tribe, Washougal, Washington**

Project Manager and Permitting Lead. Provided permitting to support project design plans by Bill Norris at Parr Excellence. The project includes removal of the 55-foot tall dam, multiple upstream tributary diversions around the project site for work area isolation and dewatering, spray irrigation dewatering, fish salvage, and several dozen channel-spanning log jams within approximately one mile of channel improvements. Tammy assisted with the wetland delineation and completed the 404 permitting, SEPA and general agency coordination.

### **Yoncalla Creek Mitigation Bank – North Douglas Betterment, Yoncalla, Oregon**

Permitting Lead and Wetland Ecologist. Tammy assisted with the wetland delineation and baseline studies, site design, and completed the state and federal permitting for this bank project to serve the Mid-Umpqua Basin. Cascade worked with the Elk Creek Watershed Council and North Douglas County to identify the property, completed all mitigation bank documents, site engineering and the 404/401 permit documents. The mitigation project focuses around removing relic log storage ponds in the floodplain of Yoncalla Creek and restoring riverine wetland floodplain.



**Shoalwater Bay Ghost Dike Removal Advanced Mitigation and Mitigation Bank – Shoalwater Bay Indian Tribe, Tokeland, Washington**

Wetland Ecologist. Tammy is assisting with the development of the Shoalwater Bay Mitigation Bank, which will restore and protect approximately 530 acres of estuary habitat through levee-breaching and other enhancement actions. Current tasks include water level monitoring and collecting data on baseline conditions, wetland delineation, project design, mitigation bank submittals, and Tammy is leading the 404/401 and ESA compliance permitting for the Ghost Dike Removal site.

**Chehalis Basin Mitigation Bank – WCEI and TCM, LLC, Lewis County, Washington**

Wetland Ecologist. Tammy worked on a multi-disciplinary team to assist with the wetland delineation, wetland restoration design, baseline condition studies, and preparation of the Mitigation Bank Instrument and supporting technical documents. The project encompasses two separate sites, totaling over 380 acres. Tammy assisted TCM with the construction, plant procurement, oversaw plant installation and now manages all permit compliance monitoring for the state and federal 404/401 permits.

**Tono Solar Project Critical Area Assessment, Delineation and Permitting – TransAlta, Centralia, Washington**

Project Manager and Wetland Lead. Tammy worked with TransAlta on a large site in Western Washington to conduct wetland and critical area services for a proposed 1,000 acre solar project. Services included delineation of wetland boundaries, determination of wetland buffer widths (vegetated corridors) and other critical areas present within the project area, as well as agency pre-application coordination and project impact avoidance, minimization, and mitigation support.

**Newell Creek Canyon Natural Area – Metro, Portland, Oregon**

Lead Wetland Ecologist. Tammy led the Cascade team to survey for the presence of wetlands and other jurisdictional waters for the proposed trail and day use facilities at Newell Creek Canyon Natural Area. Surveys included wetland and stream surveys for an area located 25-feet on either side of the proposed trail network. The deliverables included a memorandum that summarized the methods used for determination and delineation fieldwork, described identified wetlands or other waters, discussed potential impacts and means of avoidance, and also a formal Wetland Delineation Report with the full results and jurisdictional summaries outlining local, state, and federal permitting requirements. Tammy worked with the Metro and Greenworks team to develop work through the local, state and federal permitting pathways, including mitigation requirements of those agencies.

**Wapato Valley Conservation and Mitigation Bank – Plas Newydd Conservation Farm, LLC, Clark County, Washington**

Wetland and Restoration Ecologist. Tammy assisted with the wetland delineation and functions assessment of the 670-acre study area that is being developed as a wetland and conservation bank. Delineation required evaluation of wetland and upland characteristics across levee-protected and floodplain areas along the Columbia and Lewis Rivers, where river flows fluctuate significantly during the year, and across multiple years. Flow data were analyzed and compared to site conditions observed during fieldwork to identify wetland, upland and mosaic areas, and to determine Ordinary High Water elevations for project development. Tammy worked with the Plas Team to develop the floodplain planting plan to optimize salmon habitat value.

**Big Hanaford Creek Mitigation Site Monitoring – TransAlta Centralia Mining, LLC, Centralia, Washington**

Lead Wetland Ecologist. Tammy assisted with site planning, site preparations, inspection of nursery stock, coordination with contractors, invasive species management, plant installation layout, and installation QA/QC. She developed and implements the compliance monitoring plan, and she is responsible for all statistical analyses and reporting for this 150-acre wetland and 7,700-foot stream restoration project. She currently assists the client with permit compliance tasks and adaptive management activities such as replanting and coordinating with the agencies or contractors.

**Dahl Beach Mitigation Project – Port of Portland, Gladstone, Oregon**

Permitting Lead/Wetland and Plant Ecologist. Tammy served as the permitting lead for the Dahl Beach Mitigation Project, which is proposed to offset impacts to shallow water habitat stemming from early action sediment capping work performed at the Port's T4 Facility. The mitigation project includes restoring two sites within public parks at the Clackamas and Willamette River confluence. The project goals are removing a portion of an existing parking lot, removing a failed sheet pile bulkhead, restoring appropriate habitat conditions at both sites, and treating stormwater that is routed to the mitigation areas from adjacent public parking. Project design includes large wood habitat structures, grading, and establishing native vegetation. Tammy developed the planting plan and is completing all project permitting with the local, state and federal regulatory agencies. She has also authored the Mitigation Work Plan document for chapters pertaining to the mitigation strategy, planting, functional uplift, performance standards, and monitoring.



**Flyway Wetland Complex Mitigation Bank Feasibility Study - Portland Bureau of Environmental Services, Portland Oregon**

Wetland Ecologist. Tammy assisted with the Flyway Wetland Complex Mitigation Bank Feasibility Study, contracted through Cascade's on-call contract with the City of Portland's Bureau of Environmental Services. The study examined several properties in Northeast Portland owned by the Bureau, some purchased in cooperation with Metro and Portland Parks and Recreation, for the potential to be developed as a mitigation bank. The properties total approximately 50 acres of primarily degraded wetlands that could be enhanced to meet Bureau missions of improving flood storage, water quality, and habitat, while also providing mitigation in an underserved area. The study examined the functional benefits of wetland enhancement, and project financials such as estimating mitigation credit yield, credit value, project costs, and the relative timing of project costs and potential revenue. Tammy co-authored the study, and coordinated with the team to develop the design elements included in the study to demonstrate maximum wetland functional lift, and subsequent credit generation.

**Wallooskee-Youngs Confluence Restoration Project - Cowlitz Indian Tribe, Astoria, Oregon**

Wetland Ecologist. Tammy worked with an interdisciplinary team to design this 220 acre tidal wetland restoration project on the lower Columbia River. Project elements include extensive tidal channel design and levee breaching along the Youngs and Wallooskee rivers to restore tidally flooded estuarine habitat for native fish species. Tammy completed the wetland delineation and reporting, and led project federal, state, and county permitting, and assisted BPA with the Environmental Assessment required for NEPA.

**Ambleside Natural Area – Metro, Portland, Oregon**

Lead Wetland Ecologist. Tammy worked with Metro to develop the Joint Permit Application for the restoration of Johnson Creek and associated floodplain at the Ambleside Natural Area, a joint project between Metro and the City of Gresham. Tammy coordinated between local, state and federal agencies to determine permitting pathways, completed the application, and provided field assessments of the wetland areas. She also worked with the Metro project manager to assess permitting pathways and permitting needs in terms of the cultural resource limitations and ESA.

**Rinearson Creek Restoration – City of Gladstone, Gladstone, Oregon**

Wetland and Restoration Ecologist. Tammy worked with a multidisciplinary team to conduct the evaluation of alternatives and the implementation of restoration on a tributary stream within the floodplain of the lower Willamette River. Restoration components include a dam removal, earthwork for habitat channel improvements and significant invasive plant treatment and plant installation. Tammy is working to develop the floodplain planting plan to optimize salmon habitat value and oversee invasive plant management methods, and is lead on the project permitting (NWP27 and SLOPES V).

**Fernhill Wetlands – Clean Water Services, Forest Grove, Oregon**

Project Manager/Wetland Ecologist. Tammy performed wetland vegetation monitoring and site performance analysis at the Fernhill Wetlands natural sewage treatment site. Tasks include the development and implementation of a long-term monitoring framework that measures vegetation and hydrological parameters to assess site performance relative to design objectives. Tammy worked with CWS to develop project goals and protocol, conducted vegetation surveys based on statistically rigorous methods and provided report/data QA/QC.

**Pacific Northwest Wetland and Critical Area Assessment, Delineation and Permitting – Black Mountain Consulting LLC, Sherwood, Oregon**

Project Manager and Wetland Lead. Tammy works with Black Mountain on a multitude of privately owned sites within northwestern Oregon and Western Washington to conduct wetland and critical area services. Services included delineation of wetland boundaries, determination of wetland buffer widths (vegetated corridors) and other critical areas present within the project area, as well as avoidance, minimization, and mitigation support. For each project, Cascade provided a narrative to the client explaining the critical areas and natural overlays (and associated limitations) specific to the proposed projects and provided recommendations for avoidance and mitigation measures. Cascade developed critical areas permit applications for projects where impacts could not be avoided.

**Mitchell Creek Wood Placement Project – TransAlta Centralia Mining, LLC, Centralia, Washington**

Project Manager. Tammy assisted with development of the Adaptive Management Plan with NMFS and the US Army Corps, conducted the permitting (CWA 404 modifications and HPA) and managed the team during project implementation. The project included the construction of earth berms to permanently disconnect previously excavated alcoves that had become fish stranding sites and placement of logs in a tributary to the North Fork Newaukum River. Logs were selectively thinned from the site for placement into the stream channel.



**Deschutes River and Riparian Area Ecological Assessment - Trust for Public Lands, Bend, Oregon**

Wetland Ecologist. Tammy conducted a wetland and botanical ecological assessment for a property adjacent to the upper Deschutes River. This assessment analyzed current riparian, wetland, and aquatic ecological functions and provided recommendations on restoration actions to improve habitat values.

**Nason Creek, Lower White Pine Habitat Recovery Project - U.S. Bureau of Reclamation, Leavenworth, Washington**

Lead Wetland Ecologist. Tammy completed the ecological assessment for this large side channel reconnection stream restoration project adjacent to Nason Creek. The assessment analyzed current riparian conditions, wetland extent, and aquatic ecological functions, and provided recommendations on restoration actions relative to the wetlands.

**Wenatchee River Channel Reconnection Project - Chelan County Department of Natural Resources, Leavenworth, Washington**

Lead Wetland Ecologist. Tammy completed the wetland delineation studies and subsequent wetland report for this channel reconnection river restoration project on the Wenatchee River. She assisted with the design planning and Joint Aquatic Resource Permit Application (JARPA).

**Tyee Reach and Preston Reach, Salmon Habitat Recovery Project - U.S. Bureau of Reclamation, Entiat, Washington**

Lead Wetland Ecologist. Tammy completed the wetland delineations, functional assessments, impact analyses, and GIS tasks on a large parcel adjacent to the Entiat River for fish habitat improvement projects (levee removal) and assisted with the JARPA process.

**TRIP Natural Resources Assessment—Port of Portland, Portland, Oregon**

Botanical Lead/Wetland Ecologist. Tammy assisted with site development planning and permit guidance for the TRIP. Under this task order, the team provided wetland and natural resource avoidance and impact minimization recommendations to the Port of Portland based on the results of functions assessments performed on all on site wetlands. The team worked with Port planners, engineers, and environmental staff to guide the site development footprint. Tammy provided field assistance with the wetland functional assessment using the Oregon Rapid Wetland Assessment Protocol (ORWAP) and provided recommendations for the site planning.