



## PHIL BLOCH

### Senior Ecologist

Phil Bloch has 18 years of experience in marine nearshore ecology, GIS/spatial planning, habitat mitigation/restoration, and habitat assessment. He specializes in assessing the interactions of manmade structures with natural systems including fish, birds, and habitats. Phil has contributed to statewide conservation programs, habitat conservation plan development, biological assessments, environmental impact statements, and field studies. Phil is an applied scientist who creates practical solutions to help clients address regulatory and ecological concerns. He has worked on environmental compliance strategy for large, complex projects. As part of these projects, Phil also played a valuable role communicating complex and technical information through outreach efforts to the public and agencies.

### Representative Projects

**Elwha Bridge Replacement Project, Washington Department of Transportation, Washington State Department of Transportation (WSDOT), Port Angeles, WA.** Provided technical support to WSDOT for Endangered Species Act (ESA) compliance for the project, including preparation of a BA done to WSDOT standards and analysis of essential fish habitat (EFH) to complete the Section 7 ESA consultation. The project includes emergency stabilization actions for the existing US 101 Elwha Bridge, construction of a new bridge and roadway, and removal of the existing bridge. Work included field evaluations of river and riparian habitats conditions, including drone flights to capture aerial imagery of habitat conditions in upstream and downstream directions. Also worked with WSDOT environmental staff and design engineers to develop a detailed scope of project elements to identify potential construction-related and long-term effects, using GIS to determine the spatial extents of variable effect mechanisms. Assisted with the identification of avoidance and minimization measures to be incorporated as part of the project description.

**West Point Ponds Maintenance SEPA and Permitting, King County Wastewater Treatment Division, Seattle, WA.** *Technical Lead.* The West Point Wastewater Treatment facility developed two wetland mitigation sites when the site expanded in the mid-1990s. Over time the inlet structures to both sites accumulated sediment, requiring maintenance to allow for the continued function of the mitigation sites and to prevent flooding. Phil evaluated past maintenance practices, reviewed the site conditions, and outlined potential maintenance alternatives. He then developed a permitting strategy and draft permit and SEPA checklist documentation to allow for ongoing maintenance of the mitigation sites.

**Shellfish Aquaculture Project Support, Plauché and Carr LLP, Thurston County, WA.** *Technical Specialist.* Provided unmanned aerial vehicle (UAV) support and technical analysis for shellfish planning and permitting project. Collected data using DJI Phantom 4 and provided technical analyses to ensure project compliance with Endangered Species Act/Essential Fish Habitat, NEPA, and Clean Water Act and inform discussions with local, state, and federal regulatory agencies. Conducted aerial monitoring of a sediment plume associated with geoduck harvest, collected aerial photography of exposed intertidal beaches at multiple locations to characterize eelgrass presence/absence, and



### EDUCATION

Master's of Environmental Management, Resource Ecology, Duke University, Durham, NC, 2000  
B.A., Biology and Environmental Studies, Grinnell College, Grinnell, IA, 1998

### CERTIFICATIONS

U.S. Department of Transportation, Remote Pilot License, Certificate Number 3957686  
Qualified Senior Writer for Biological Assessment, WSDOT, February 2016

### EXPERTISE

Marine and Freshwater Aquatic Ecology  
Restoration/Mitigation  
GIS/Environmental Data Analysis  
Endangered Species Act  
NEPA/SEPA

### ADDITIONAL TRAINING

Eelgrass Delineation Guidance Workshop, U.S. Army Corps of Engineers, June 2017



generated a site orthophoto and a digital surface model of the study area. Combined post-processed data with available GIS data layers of topography, aquatic habitats, parcel boundaries, and cultural features to provide a comprehensive mapping of the resources and their relationships to the proposed project action of shellfish aquaculture for planning and permitting applications. Maps were generated for permit applications and as exhibits for proceedings before Thurston County Hearing Examiner.

**Burley Lagoon Cumulative Impacts Review, Taylor Shellfish Farms, Purdy, WA.** *Senior Marine Biologist.*

Currently preparing a cumulative impacts review associated with a change in shellfish aquaculture practices in Burley Lagoon, Pierce County, WA. Burley Lagoon has cultured shellfish since the 1930s. Developing a cumulative impacts review addresses the interest in understanding whether potential impact thresholds are being reached as a result of shellfish aquaculture in parts of Puget Sound. The purpose of the cumulative impacts review is to analyze the likely ecological (e.g., water quality, sediment dynamics, fish) and social (e.g., aesthetics, recreation, noise, light) impacts of the proposed action in the context of, and in conjunction with, other uses and development over time within Burley Lagoon and the surrounding environment. The review will address the major contributing factors to environmental processes within Burley Lagoon using conceptual models informed by existing literature and data. The cumulative impacts review will be discussed and approved by the Shellfish Interagency Permitting team, a multi-agency team funded through the Washington Shellfish Initiative.

**Shell Anacortes Rail Unloading Facility SEPA Third-Party Environmental Impact Statement (EIS), Washington Department of Ecology/Skagit County, Skagit County, WA.** *Senior Biologist.* Analyzing project effects to marine and water resources. Leading efforts to collect and analyze information on surface water drainages and Padilla Bay resources potentially affected by construction and operation of the proposed unloading facility for crude oil delivery. Activities addressed include reconfiguration of surface water drainages, stormwater management, reconstruction of on-site stream, construction of estuarine wetland mitigation site, and oil transport operations.

**Gateway Pacific Terminal NEPA/SEPA Third-Party Environmental Impact Statement (EIS), U.S. Army Corps of Engineers (Corps) Seattle District/Washington Department of Ecology/Whatcom County, Whatcom County, WA.** *Senior Biologist.* Developed the EIS environmental discipline, EIS chapter, and technical reports analyzing project effects to marine resources. Led efforts to collect and analyze information on Cherry Point marine systems and potential environmental impacts associated with a range of alternatives for proposed construction and operation of a multimodal marine port facility. Activities addressed included construction of marine trestle and wharf, operations of marine wharf, and marine transport of cargo. Led development of shade studies and supported tribal fishery resources, underwater vegetation, and vessel oil spill technical reports.

**Eelgrass Delineation, BDN, LLC, and Seaproducts Geoduck Farms, Squamish Harbor, Hood Canal, Jefferson County, WA.** *Senior Biologist.* Performed an underwater video eelgrass delineation covering approximately 15 acres of existing and proposed geoduck farm consistent with WDFW and Corps eelgrass survey protocols. Coordinated with agencies to establish survey plan. Providing ongoing support to compare observations to previous survey efforts and independent agency field observations.

**Aquatic Reserve Program, Washington Department of Natural Resources (DNR), King, Skagit, and Whatcom Counties, WA.** *Lead Scientist.* Supported creation of the statewide aquatic reserve program by developing the scientific framework for identifying and managing Aquatic Reserves. Supported public outreach and SEPA evaluation of the program. Developed and implemented a national scientific peer review process for the program's site-selection criteria. Created and led the independent scientific review process for individual sites. Performed a comprehensive review of the natural resources that use the sites and supported outreach to existing user groups and interested parties. Conducted numerous site visits and led review of the site by a team of experts. Following designation as an Aquatic Reserve, contributed to interim management plan and SEPA documentation.