WAYNE DALEY, C.F.P.

Senior Fisheries Biologist

KEY AREAS OF EXPERIENCE

Biological Evaluation Preparation
Fisheries Habitat Assessment
Habitat Management Plan Preparation
Habitat Restoration
Wetland Assessment
Environmental Impact Assessment
Expert Witness

EDUCATION

B.Sc., Fisheries, University of Washington, 1979
Engineering, Montana State University

REGISTRATION

Certified Fisheries Professional (AFS), 1985

Membership

American Fisheries Society (Past President, Bioengineering Section)
American Institute of Fisheries Research Biologists (Fellow)
Trout Unlimited

COMMUNITY Service

Chair, Science & Technical Advisory Committee; Holden Village (currently)
Bainbridge Is. Watershed Committee
Bainbridge Is. Salmon Enhancement Project Coordinator
Bainbridge Island Wetland Advisory Committee (Chair for 2 years)
Planning Commission: City of Winslow/City of Bainbridge Island (Chair for 3 years)
Bainbridge Island Land Trust (Board of Trustees)

Guest Lecturer

University of Washington, University of Idaho, Western Washington University, Washington State University-Vancouver

Wayne Daley is a **Certified Fisheries Professional** with the American Fisheries Society and an **American Institute of Fisheries Research Biologists Fellow**. His role as project manager or lead fisheries biologist has been for shoreline bioengineered soft-bank stabilization on Hood Canal and in Puget Sound, watershed assessments, stream habitat restoration and wetland delineations. He has participated in NEPA, SEPA & EIS documentation on many of the projects. In addition Daley Design has been the lead consultant for the preparation of Biological Evaluations addressing shoreline projects in salt and freshwater areas of Lake Washington, Puget Sound, the Columbia River and the Snohomish River Watersheds. **Prior to retiring in 2013 Wayne prepared 7 major BE's concerning shoreline projects and has prepared in excess of 50 Habitat Management Plans in Kitsap, Mason, Jefferson and Pierce counties. He has participated in successful challenges of shoreline projects at the county or Shoreline Hearing Board level. Principle fisheries biologist for the WRIA 16 & 14b River and Stream Impairment Analysis.**

Watershed & Shoreline Assessment; Habitat Restoration; Fish Passage

- **Coal Creek Basin Storm Drainage Master Plan and Improvements, City of Bellevue, Washington** — Fisheries Biologist, evaluated and recommended instream reconstruction and habitat improvements for a typical low-land stream that was experiencing significant environmental changes due to urban development, mining and timber harvest.
- **Newport Yacht Club Marina Maintenance Dredging Biological Evaluation**
  The Newport Yacht Club Marina was partially filled with silt and mine tailings from storm events in the Coal Creek Watershed. Daley Design completed an assessment of the site and the lower portion of Coal Creek as preliminary preparation for the writing of the Biological Evaluation required under ESA provisions prior to the dredging of the marina. Dredging was required to regain use of the areas that were eliminated from access due to the deposition of material by Coal Creek. As part of the process to write the BE a review of critical documents and research data was completed. This effort included contact with Washington Department of Fisheries staff involved in fisheries studies of the area and communication with fisheries biologists working for the Muckleshoot Indian Tribe, NOAA Fisheries and the U. S. Fish & Wildlife Service.
- **Haskell Slough Restoration Project, Skykomish River at Monroe Washington** The project, which was planned permitted designed and constructed under Wayne's supervision, involves the restoration of 31/2 miles of old river bed to salmonid use by excavating 6,000 feet of stream channel connecting 11 large existing groundwater fed ponds. The new channels connect the system to the river at the downstream end of the project and restore salmon production after more than 60 years of limited or no production. The effort provides over wintering and summer habitat for juvenile salmonids that enter from the downstream end at high water or are brought into the system by flood events in the winter. The excavation, together with future connections to the river insure a year round flow through the entire length of the project.
- **Boulder Creek Salmon Enhancement Project, North Fork of the Nooksack River**
  The project, which was planned, permitted, designed and constructed under Wayne's supervision, is located on property owned by the Trillium Corporation. One of the major factors that contribute to the low productivity of the Nooksack is the lack of pool habitat during the low flow summer months. A second factor is the lack of backwater channels for juveniles to use as sanctuaries during high storm flows in the winter and spring. The Trillium Corporation in conjunction with Long Live The Kings and the Nooksack Salmon Enhancement Group coordinated the construction of a combination of ponds for low flow habitat and a backwater channel for winter storm events. The ponds and stream habitat are part of the relocation of the small stream west of Boulder Creek. In addition to the construction of the ponds and spawning habitat, the construction resulted in increased summer flow. The area has a significant number of springs that provide groundwater flow in the late summer.

Springridge Brook Culvert, City of Bainbridge Island, Washington – Project manager for the development of alternative repairs to a culvert barrier to adult fish passage. Because the roadway was the only access for 250 homes, the design alternatives had to consider installation that does not close the road for access and emergency services. In addition, there was 30 feet of fill that resulted in the need to evaluate jacking and tunneling as an alternative construction method. Passage of chum salmon and coho required a pool and weir configuration on the downstream side. Cost was a factor in the selection of the final alternative. Wayne prepared the SEPA documents for the lead agency.

- **Schel-Chelb Estuary and Creek, Bainbridge Island** — Project Manger-The Bainbridge Island chapter of Trout Unlimited in cooperation with US Fish & Wildlife Service, Washington Department of Transportation and the City of Bainbridge Island planned and constructed a 5 acre estuary. In addition TU, USFWS and the City relocated a small stream into the head of the estuary. Prior to relocation, this stream was piped for 800 feet under the community of Lynwood and then emptied onto the beach. The outlet of the estuary is 800 yards west of the original stream outlet pipe. Wayne and the USFWS engineering staff designed the estuary. The stream relocation was designed by Wayne. During construction of the new stream channel Wayne was onsite to direct the heavy equipment operators. He also supervised the installation of a 48-inch culvert under Baker Hill Road. The project was completed in October of 1997 and adult coho migrated upstream into the upper watershed within days from the first flow into the new estuary. No coho had spawned in this watershed since the 800 foot pipe was installed over 60 years ago.
- **Hilton Creek, Santa Barbara California**- Wayne was a consultant to a private property owner where issues concerning fish passage from the Santa Ynez river have developed due to the listing of the steelhead/rainbow trout of the Santa Ynez as an endangered population by the National Marine Fisheries Agency. The listing is the result of the impact of the dams that were constructed on the river by the Bureau of Reclamation to provide potable water to the City of Santa Barbara and for irrigation in the river valley.
- **Fish Screens For The Metro Freshwater Intakes and Storm Overflow Outlets to Lake Washington and Lake Sammamish**, **2001**.—Principle designer of the fresh water intake structures located along various wastewater interceptors to enable flushing of the sewers during low flow or stagnant conditions. The County retains rights to remove a certain amount of surface water from both Lake Washington and Lake Sammamish at the following fresh water intake structures: Evergreen Point, Holmes Point and North Mercer. These intakes lacked fish screens that meet current fish protection criteria. New screens designed with regard to ESA salmonid protection criteria were designed and constructed. A further fish screen design requirement at several of the sites was the use of the pipe as stormwater overflow pipe which causes a combined discharge to enter the lake at the same location. This created a condition that requires a check valve system that bypasses the fish screens during an overflow event and activates the screens during the flushing events.
- **Cedar River Sockeye Salmon Broodstock Collection Alternatives – Project Biologist** Seattle Public Utilities conducted a study to determine the best alternative and location for the collection of adult sockeye salmon returning to the river as part of the overall sockeye enhancement program for the Cedar River and the Lake Washington Watershed. Adult capture facilities throughout the Sate and British Columbia were inspected and evaluated for the best method and location to capture adults sockeye in the Cedar River. Wayne was a sub-consultant to the primary consultant, Chinook Engineering and provided oversight of on-sight evaluations and methods of capture.
- **Steel Creek, Kitsap County** —The Ross family had an old pond that has experienced problems with increased runoff due to development in the upper watershed. In addition the pond stopped all migration of adult salmon. Wayne designed a fish passage bypass around the dam that included improved pool habitat for juvenile salmonids. This reach of the stream also utilized log weir configurations that provide spawning areas upstream of the weirs. This project was funded by The Mid Puget Sound Salmon Enhancement Group, Kitsap County, The Soil Conservation Service and US Fish & Wildlife Service. Wayne directed the construction effort and has been involved in monitoring the use and benefits to the property owner.
- **Newaukum Creek Salmon Enhancement Project, Green River in King County-** The Mid Puget Sound Salmon Enhancement Group required a bioengineer to assist them in

the development of design details for the removal of an old concrete structure in the streambed and the construction of weirs to facilitate fish passage through a steep reach of the creek. In addition a ten foot diameter culvert needed to be installed in a logging access road. Wayne provided these services and was on site at regular intervals during construction to insure the work was completed correctly.

- **Picnic Point Creek & Big Gulch Creek** — As Project Manager of the assessment of the existing fisheries and riparian habitat of Picnic Point and Big Gulch Creeks, Wayne was responsible for the documentation of the entire watershed including the saltwater estuary. The project included a walk of the entire watershed and the preparation of a photographic summary of the existing conditions. While walking the freshwater areas and the salt-water interface, the aquatic benthos and vegetation were evaluated. The information, which was obtained from this project, was used as a guide in the preparation of a mitigation plan for the repair of the watershed due to urban and industrial growth.
- **Sr. Fisheries Advisor, King County Brightwater Project, Carnation Treatment Plant and Big Gulch Treatment Plant (2002 to 2005) -** Wayne served as a Sr. Fisheries advisor sub-consultant for the listed sewage treatment plants. In all three projects there are fisheries issues concerning impact to existing habitat or the need to mitigate for future impact to fisheries resources. Restoration of streams and fish access for spawning and juvenile rearing are critical elements of the evaluation of alternatives.

Fisheries Bioengineering

- **Statewide Kokanee Salmon Program assessment for the State of Washington Department of Fish & Wildlife (2003) –** Principle Bioengineer for the review and assessment of the State of Washington's kokanee salmon program. With the potential for a fish passage facility on the Middlefork of the Nooksack River the state is faced with the loss of Lake Whatcom as a source of kokanee eggs for the entire state. Daley Design as a sub-consultant to Parametrix provided review and evaluation of potential hatcheries that would be eligible as replacements for the Lake Whatcom Hatchery and the Bellingham Hatchery. This effort included evaluation of potential trapping sites at lakes throughout the state where current populations of kokanee are spawning in tributaries to the lakes.
- **Statewide Hatchery Evaluation Study, Washington Department of Wildlife (1990)** — Principal Bioengineer in the evaluation of the entire hatchery complex for the state's coldwater program. In addition to the inspection of the facilities and determining the existing condition of these facilities, there was a projected capability for future productions.
- **Freshwater Fish Lab for University of Washington College of Fisheries Sciences, Seattle, Washington** — Fisheries Biologist for conceptual design, feasibility assessment and cost estimate to construct a $20 million waterfront lab building. The project includes substantial over water construction and ozone disinfection life support system. Project required criteria for shoreline and NPDES permits.
- **Hood Canal Captive Brood Stock Facility, Lilliwaup, Washington** — Project Manager, managed design of the nonprofit organization Long Live The Kings' captive broodstock facility on Hood Canal. This facility will be used as a model low cost facility for the preservation and restoration of wild and endangered salmonid populations. In addition to project management Wayne designed the gravity feed intake system and has provided construction inspection and administration service during the construction of the facilities. Prepared all permits for this project, including COE, EPA, DOE & WDFW.
- **White River Hatchery for the Muckleshoot Indian Tribe, Buckley, Washington, for Puget Sound Power and Light** — Project Manager, provided design management, bioengineering and development of biocriteria computer model for a $2 million, 5-cfs mitigation hatchery including adult return, spawning, egg incubation and juvenile rearing. Developed SEPA and EIS permits with all state and county officials.
- **National Marine Fisheries Service (NMFS) Research Facilities, Seattle, Washington** — Project Manager, provided site evaluation and directed the preparation of a feasibility study and preliminary design of an ozonated reuse water supply at the Montlake facility and a 5-micron filtered saltwater supply at the Manchester facility. Both of these facilities are currently being used as part of the recovery effort for the endangered Snake River sockeye.
- **Washoe Hatchery, Montana Parks & Wildlife** — Project Leader for the site evaluation and feasibility study of an ozone system to treat the surface water supply. Washoe is a captive broodstock facility which is experiencing high levels of mortality in the adult westslope cutthroat trout. The surface water supply is the source of a bacterial fungus infection and is presently only screened with no disinfection. Wayne inspected the site and provided preliminary siting and sizing criteria for an ozone treatment system. He also provided oversight in the development of a conceptual plan and cost estimate for this project. This project was completed in four weeks from the time of the site visit to a final summary report.
- **Miles City Fish Hatchery Renovation, Miles City, Montana, for the Montana Fish and Wildlife** — Fisheries Biologist, provided bioengineering and hatchery design for the renovation of ponds and hatchery building for the rearing of warm- and coolwater

species: walleye, northern pike, largemouth and smallmouth bass, and some salmonid production.

- **Spooner Fish Hatchery, Spooner, Wisconsin, for Wisconsin Department of Natural Resources** — Project Biologist for final design on a $9 million hatchery renovation. Project included a new 15,000 sf hatchery building featuring an innovative jar rack/fry transfer piping system, low pressure air system, and 50 acres of plastic lined ponds.
- **Woodruff Fish Hatchery, Minoqua, Wisconsin, for Wisconsin Department of Natural Resources** — Project Biologist for final design of a $4 million hatchery renovation. Project included 20 acres of new or renovated plastic lined ponds, drum screen filtration, gas stabilization, and a pumped effluent system required to meet stringent water quality criteria.
- **Yana River Hatchery, Magadan Province, Russia** — Bioengineer; provided design requirements for the fish passage facilities from the Yana River to the facility. The fish passage was designed to operate at several water levels at its exit. In addition, the passage was designed to transport juveniles downstream to the river. Biocriteria and design details were developed for the egg incubation and juvenile rearing of coho and chum salmon.
- **Fish Production Facility Evaluation Study, Vermont Department of Fish and Game** —Project Leader and Fisheries Biologist, responsible for evaluating the conditions and operations of four coldwater hatcheries for developing a plan to meet future production needs; this study led to the decision to build the Lake Champlain Hatchery.
- **United Anglers & Casa Grande High School Adobe Creek Hatchery, Petaluma, CA** — Project Manager and Advisor. Casa Grande High School is involved in the restoration of urban stream in the region surrounding Petaluma. As part of this effort the organizations have jointly funded the construction of fish hatchery located on the campus of Casa Grande High School. Adult salmon and steelhead are captured in the fall as they return to streams in the area. These fish are held at the hatchery and spawned. The offspring are reared and released into streams that the student and community volunteers have restored.