



Friends of Willapa National Wildlife Refuge

Trail's Tale Told: Students present design details of interpretative trail at Willapa Wildlife Refuge

Restored salmon habitat at Willapa National Wildlife Refuge was focus of student design studio of Public Art Program of the University of Washington

Naselle, WA – March 17, 2003 – The success of a restored salmon run at Headquarters Creek at Willapa National Wildlife Refuge was the subject of a competition of sorts among students from the University of Washington's Public Art Program. Nearly two dozen students of a unique interdisciplinary program that combines art, landscape, and design disciplines presented their proposals for an interpretative trail to highlight the unique habitat of the Willapa Refuge and the accomplishment of reclaiming the Headquarters Creek watershed for salmon. Culminating an eight-week studio practicum, student teams submitted designs for an art-inspired public access guided walk to communicate the remarkable achievement of Refuge staff and volunteers in restoring long-lost salmon runs to Willapa Bay.

The interpretative trail will cap a four year restoration project that this year yielded a record return of chum salmon to the creek. "Over 300 salmon returned this fall, up from a dozen last year," said Art Shine, Recreation Planner at the Willapa Refuge. Shine continues, "This design project will further help protect the salmon here as well as demonstrate that small creek projects can be relatively easily restored to productive conditions for wildlife." The trail will also recognize the Centennial Year of the National Wildlife Refuge System, which celebrates 100 years of conservation progress in 2003.

"Superficially, designing a trail is easy to do," commented Iain Robertson, Chair of the Department of Landscape Architecture at the University of Washington. "A well-laid trail looks like it happens naturally, but few achieve this." "The unique link of art and biology makes this project especially significant," adds John Young, chairperson of the Program on Public Art at the University of Washington. Fellow educator Jim Nicholls, from the Department of Architecture, adds that "This [design competition at Willapa] is an ideal project for this program. Here we can bring students who have mostly dealt with art as a medium of internal expression to experience the motivation and inspiration of an external, natural environment."

The creativity of the student designs was evidenced by the diversity of structures, materials, and opportunities for public interaction that were presented. Amy Tanner, graduate student in landscape architecture, commented that “all of us were taken with the beauty of the site, and wanted to instill in others the sense of stewardship of the environment with our designs.” Among the design concepts submitted:

- A parabolic-shaped mini-amphitheater in the hills above the stream to amplify the sounds of the water and forest, enhancing the aural experience for visitors.
- A living alder tree suspended above the stream by large outrigger booms salvaged from decommissioned salmon trawlers. The design allows for the tree to grow about fifteen-twenty years before toppling over into the stream and continuing anew the cycle of tree cover providing protective habitat for salmon.
- A series of seemingly random-height pillars jutting skyward in the often-submersed inter-tidal delta area where Headquarters Creek flows into Willapa Bay. Each pillar is marked with tide height indicators communicating the ever-changing ebbs and flows interchange of waters between the bay and the creek.
- Huge metal forms cut in the profile of chum salmon, allowed to naturally rust in multiple colors to suggest the color transformation of the salmon themselves. The metal forms would be placed on large poles mounted on either side of the boardwalk trail along Headquarters Creek, giving visitors the sense of “swimming with the school” of returning salmon.
- A pavilion constructed of natural wood, earth, and metal composites with multiple rooms of several heights, suggesting the different canopies of the surrounding forest and providing interpretive exhibits therein.
- Imprints in the trail itself would include casts of the various mammals, amphibians, fish, and birdlife found on the Refuge, highlighting unique attributes of particular species. For example, the amazingly-long four-foot leap of the relatively small Red-legged Frog common to the Willapa region would be visually marked to emphasize this physical achievement.
- A floating dock would be placed near the trail beginning to provide an on-the-water experience for visitors, directly positioning them over the creek area for optimal viewing.

The physical challenges of the Willapa project are significant. Stephanie Hurley, student in the program, notes that “we must provide access to the area on a separate plane from the actual terrain, to avoid visitors crushing the surrounding landscape.” Compounding the architectural challenges are concerns over the communication task. Fellow student Amy Lambert noted the complications arising from the “enormous amount of biological information that is present here at Willapa. It will be especially important to limit and focus our messages so as not to overwhelm visitors.”

Support staff from the U.S. Fish and Wildlife Service were particularly impressed with the students' contributions. John Ivie, Visual Information Specialist with the U.S. Fish & Wildlife Service (USFWS) shared his admiration. "Your strong personal connections with this place is evident in your designs." Linda Waters, staff associate also from USFWS, added that "your designs here do something that we don't do enough of, celebrating our success stories!"

The student designs for the Willapa interpretive trail are on display at Refuge headquarters. Details of winning designs and trail construction plans will be announced in early spring by the Public Arts program and management staff at the Willapa Refuge.

About Willapa National Wildlife Refuge

Willapa Bay is the largest estuary in the northwest United States region outside Puget Sound, covering approximately 88,000 acres at high tide with over 100 miles of shoreline. The Bay is the defining geography for the Willapa National Wildlife Refuge, which comprises nearly 15,000 acres of upland forest, tidelands, beach dunes, freshwater marshes, diked grasslands, and other wetland habitat.

Aquatic habitats and grasslands on the Refuge support migratory populations of literally hundreds of bird species such as black brant, trumpeter swans, Canada geese, scaup, canvasback, bufflehead, scoters, and American wigeon. The Refuge also hosts some of the largest concentrations of shorebirds on the Pacific Coast, including the endangered western snowy plover and marbled murrelet. Black bear, black-tailed deer, Roosevelt elk, bats, bobcats, and grouse can be found in the forests and upland habitats. The cool, wet climate of Willapa Bay makes the area a "hotspot" of amphibian and fish diversity, where Refuge habitats support over half of the 24 native amphibians that occur in the state and provide spawning grounds for chinook, coho, and chum salmon, steelhead, and cutthroat trout.

Willapa is one of over 500 national wildlife refuges in the United States operated by the U.S. Department of Fish and Wildlife. The National Wildlife Refuge System is the only national network of public lands in the world set aside specifically for the conservation of fish, wildlife and plants. Encompassing 93 million acres, the Refuge System boasts more units than the National Forest System and more acres than the National Park System. The Refuge system celebrates 100 years of conservation success in 2003, its Centennial Year.

About the Public Arts Program at the University of Washington

The Program on Public Art at the University of Washington seeks to provide a comprehensive interdisciplinary education in the theoretical, practical, and professional aspects of the creation and understanding of Public Art. The program blends the individual disciplines of art, architecture, design, and landscape architecture into an intertwined educational experience, allowing undergraduate and graduate students in these areas to cross over artificial academic borders and create compelling, unique, and cutting-edge public art that draws from elements in each of these disciplines.

The program emphasizes the scholarship of applied and theoretical learning, and seeks to educate public artists as critical thinkers able to address practical and esthetic issues in creating compelling, functional, and landmark contributions to Public Art. Interdisciplinary coursework includes theoretical investigation, design studio and community design/build projects.

Details of the Stream Restoration Project at Willapa Refuge Headquarters

Historically, hundreds of streams flowing into Willapa Bay have supported productive salmon runs, including the 3000-yard long creek at Refuge Headquarters. Records show that this stream was home to a thriving run of chum salmon up until the 1940's, when a tide gate and dam were installed to create a freshwater pond and control flooding. Subsequent construction activity on the nearby highway sealed the fate of returning salmon hoping to use the stream as spawning ground.

Beginning in 1997, restoration of the stream began under sponsorship of volunteers from the Willapa Bay Fisheries Enhancement Group and Refuge staff. Costs of \$105,000 and over 1000 volunteer labor hours supported the multi-year effort to create a habitat suitable to re-establish the salmon run.

Among the first actions in the restoration project was removal of the blocking tide gate and upstream dam that prevented fish from free and unobstructed passage. The stream itself was re-directed from a fast-flowing, straight channel to its original meandering path. Tree trunks and other woody debris were selectively deposited in the stream, further slowing the water speed and creating a series of pools in which salmon can rest and spawn. As the creek's water cascades good-naturedly over the implanted wood debris, fresh oxygen is introduced to the stream, silt is captured, and protection is afforded new salmon smolt and fry.

Surrounding the stream, native grasses and trees were planted to provide shade needed by salmon as well as stabilize the stream banks to prevent erosion. As these plantings grow with each successive year, the habitat quality will continually improve.

Reintroduction of chum salmon began in 1997. Six large trays of salmon eggs were secured to the streambed and allowed to hatch and acclimate to the chilly waters. Salmon carcasses were installed throughout the length of the stream to add nutrients to the water to support the newly-hatched fry. Egg trays were installed in each year thereafter.

Twelve adult salmon were the first to return in the fall of 2001, confirming the success of the restoration. These were followed the next year by over 300 healthy adults completing their life cycle. It is estimated that 80% of these returning fish successfully spawned, providing confidence that the stream will soon be self-sufficient in supporting a natural recurring run.

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