

# West End Natural Resources News

A publication of the NPC MRC, NPC LE and WRIA 20 IB  
Issue No. 2 July 2011

## The Whale Trail: A New Partner in Preservation

*-Ranger Judy Lively, Olympic National Park and Donna Sandstrom, Executive Director, The Whale Trail*



During spring and throughout the summer you might see gray whales. They are passing our shores on the longest mammal migration on earth. Each year, they travel 12,000 plus miles from the calving pools in Baja to the feeding grounds off the coast of Alaska and back. Photo: courtesy of Polly DeBari

The Olympic coast is home to over 29 species of marine mammals. Whales, dolphins, otters and seals play an integral role in our region's heritage, ecology and economy. Each year, more than 3.5 million visitors from throughout the world come to Olympic National Park (ONP). Many eagerly scan the Pacific Ocean looking for whales. The Whale Trail will help them find the best places to begin their search. *continued on page 2*

## Coast Cleanup Gets the Job Done, Again!

Thanks to everyone who participated in the 2011 Washington Coast Cleanup on April 23. A great weather day brought out 1158 volunteers who took in 23 tons of trash! Read more at <http://www.coastsavers.org>.



Special thanks to Ernie Penn, Chuck Boss and Phil Dreher (pictured here) for donating their time and four-wheelers to help haul trash up from the beach at the Hoh Reservation. Photo: Tami Pokorny



Cha'ba in her new home off of La Push.

## Introducing Cha'ba and NANOOS!

*- Jan Newton NANOOS Executive Director and Sarah Mikulak NANOOS Education & Outreach Specialist*

Keep a look out, North Pacific Coast, you just got a new addition to your coastal ocean!

*continued on page 4*

### Inside:

- Tribal Fishermen Save Birds & Bait p. 6
- Washington Coast Sea Otters p. 7
- West End RV Dumps p. 9
- Coastal Students Learn at Fiero p. 10
- Grant Writing Tips p. 10
- New Coastal Hazards Specialist p. 11
- Ozette River Otters p. 11
- Exploring Ocean Change p. 12
- Salmon Recovery Projects p. 13
- What is the *West End Natural Resources News* p. 14

This newsletter was published with funding from the WA Department of Fish and Wildlife and the WA Department of Ecology (Grant #G0900214).

More about

## The Whale Trail

A core team of partners including NOAA Fisheries, Olympic Coast National Marine Sanctuary (OCNMS), Washington Department of Fish and Wildlife, People for Puget Sound, the Seattle Aquarium, and the Whale Museum is developing the Whale Trail. Many members of this core team met when they worked together on the successful effort to return “Springer,” an orphaned orca, to her pod and native waters on the north end of Vancouver Island in 2002.

Inspired by the cooperative success of Springer’s rescue, Executive Director Donna Sandstrom founded the Whale Trail in 2008. The Whale Trail’s mission is to inspire appreciation of orcas, other whales, and the marine environment, and to promote stewardship for them. It accomplishes its mission through a website, signs and programs.

The Whale Trail was inaugurated with a dedication ceremony at Salt Creek Recreation Area in August 2010. With twenty locations so far, including eight on the Olympic Peninsula, the Whale Trail will reach over a million visitors this year. Donna is now working closely with Rangers Kathy Steichen and Judy Lively (ONP), and Bob Steelquist and Jacqueline Laverdure (OCNMS) to add more locations on the Pacific Coast.

Many sites feature an interpretive sign, customized to show the marine mammals that can be observed there and when. Some feature iconic Whale Trail markers that let visitors know they have come to the right location. All sites have their own pages on the Whale Trail website ([www.thewhaletrail.org](http://www.thewhaletrail.org)). In addition to site-specific viewing tips, the pages provide timely updates such as recent sightings and upcoming events.

The website is blog-based, so that visitors can comment, upload photos, and become part of the wider Whale Trail community. The next generation of signs will use bar codes to link visitor’s “smart phones” to corresponding web pages. For some sites in wilderness locations where signs aren’t appropriate, the web page is the main way to access information.

While the tools may be new, the connection isn’t. Whales and dolphins have lived in our waters for millions of years. The Whale Trail is not so much creating something new, as highlighting something that exists, and always has.

“Where can I see whales along the Pacific Ocean coast?” Coastal resource interpreter, Ranger Judy Lively, suggests: “Use the Whale Trail map... From the shores of the Olympic Peninsula, go to



Photo courtesy of NOAA/Olympic Coast National Marine Sanctuary

*Further offshore, the nutrient-rich waters of the continental shelf attract humpback, fin and blue whales appear in ever-increasing numbers.*

the high bluffs at Kalaloch or beaches with broad open views like Rialto Beach or First Beach in La Push. If you like rugged hikes, a whale sighting from coastal wilderness areas feels like a personal visit. Also, look for tell-tale signs, such as a cluster of sea birds that appear to be following a large underwater shadow. Over the years, I have spotted the spouts and flukes of migrating gray whales in spring and the dorsal fins of passing orcas. Remember to bring your binoculars.”

Do you know of a place that should be on The Whale Trail, or ideas about how we can work together in your community? Contact us at [info@thewhaletrail.org](mailto:info@thewhaletrail.org). We’re on Facebook, too!



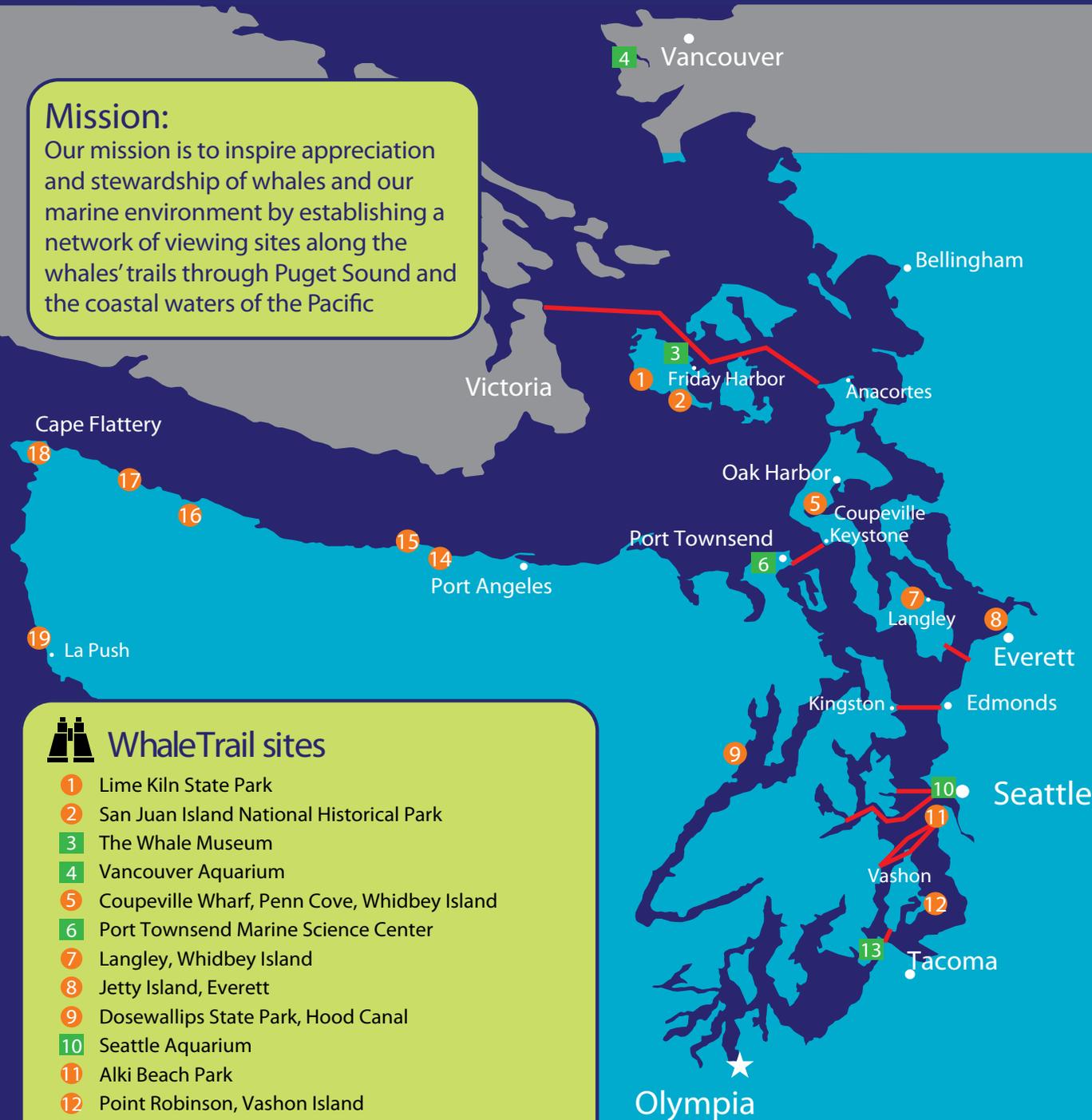
Photo courtesy of NOAA/Olympic Coast National Marine Sanctuary

*The southern resident orcas (J, K and L pods) were listed as endangered in 2005. Factors contributing to their decline include lack of prey abundance (particularly chinook salmon), toxin accumulations, and stress from noise and other vessel impacts. According to a WDFW study, if the current trends continue or worsen, these beloved and iconic animals – the official marine mammals of Washington State – could disappear in as little as 100 years.*

The Whale Trail is a series of sites around the region where you may view orcas and other whales or marine mammals from shore.

**Mission:**

Our mission is to inspire appreciation and stewardship of whales and our marine environment by establishing a network of viewing sites along the whales' trails through Puget Sound and the coastal waters of the Pacific



**WhaleTrail sites**

- 1 Lime Kiln State Park
  - 2 San Juan Island National Historical Park
  - 3 The Whale Museum
  - 4 Vancouver Aquarium
  - 5 Coupeville Wharf, Penn Cove, Whidbey Island
  - 6 Port Townsend Marine Science Center
  - 7 Langley, Whidbey Island
  - 8 Jetty Island, Everett
  - 9 Dosewallips State Park, Hood Canal
  - 10 Seattle Aquarium
  - 11 Alki Beach Park
  - 12 Point Robinson, Vashon Island
  - 13 Point Defiance Zoo and Aquarium
  - 14 Freshwater Bay County Park
  - 15 Salt Creek Recreation Area
  - 16 Sekiu Overlook
  - 17 Shipwreck Point
  - 18 Cape Flattery
  - 19 La Push
- Educational facilities  
● Viewing sites  
— Washington State Ferries

more about

## Cha'ba and NANOOS!

Maybe you can guess: she's tall, has a very buoyant personality, and keeps track of ocean conditions on a daily basis. If you guessed an ocean observing buoy, you are right! This buoy, named Cha'ba by the Quileute Tribe (pronounced "chay-buh," meaning "whale tail") is part of a new ocean observing array that will be deployed year-round in the Olympic Coast National Marine Sanctuary (OCNMS) waters off of La Push.

The new array was funded by a grant from the Murdock Charitable Trust with matching funds from the University of Washington (UW). It will be maintained as part of the U.S.

Integrated Ocean Observing System (IOOS®) by us, the Northwest Association of Networked Ocean Observing Systems (NANOOS), an IOOS regional association. Other contributing partners include the OCNMS and the NOAA Pacific Marine Environmental Laboratory (PMEL) who provide support for instrumentation on the buoy. A 2007 Resolution by the Olympic Coast Intergovernmental Policy Council (Hoh, Makah, and Quileute Tribes, the Quinault Indian Nation, and the State of Washington) played a role in securing the Murdock grant by demonstrating strong community support and need for ocean monitoring buoys in this area of Washington.

Cha'ba was sea tested last June-October and was re-deployed in May 2011. This time, she will have neighbors. Joining Cha'ba will be a sister sub-surface profiling buoy, which will provide profiles of water properties for the full water column, from sea bed to surface. Together with Cha'ba's surface measurements and sophisticated measurements at a few depths, this will provide a comprehensive view of ocean conditions unprecedented for the area. But these are stationary and only collect data from that one spot. The third member of our ocean observing family, a Seaglider, provides a solution to that. Seagliders, which are built and commer-

cially marketed at UW, are a type of autonomous underwater vehicle that soars up and down the water column as it propels itself along a programmed route. This Seaglider is uniquely enhanced by fish tracking receivers from the Pacific Shelf Tracking Project (POST). We will work collaboratively with POST to develop this technology to understand fish and mammal migrations.

Collectively, these instruments will provide data about coastal weather and ocean conditions, including the physical (temperature, salinity), chemical (dissolved oxygen, nutrients, pH, and CO<sub>2</sub>), and biological (chlorophyll) characteristics of the water. The data collected will be freely available on the web through NANOOS for anyone to use. Some groups who may benefit from these data include: regional tribes and state

resource managers to assess water properties and enable better understanding of hypoxia, ocean acidification, and Harmful Algal Blooms (HABs); weather forecasters who lack offshore wind observations; and the boating, fishing, and maritime communities who will be able to utilize the wind and weather data.

In a special collaboration on ocean acidification, we are working with UW and NOAA PMEL scientists to deploy sensors measuring pH and pCO<sub>2</sub>. These data will join similar data from other oceanic, coastal, and estuarine areas that NOAA is monitoring, allowing us to

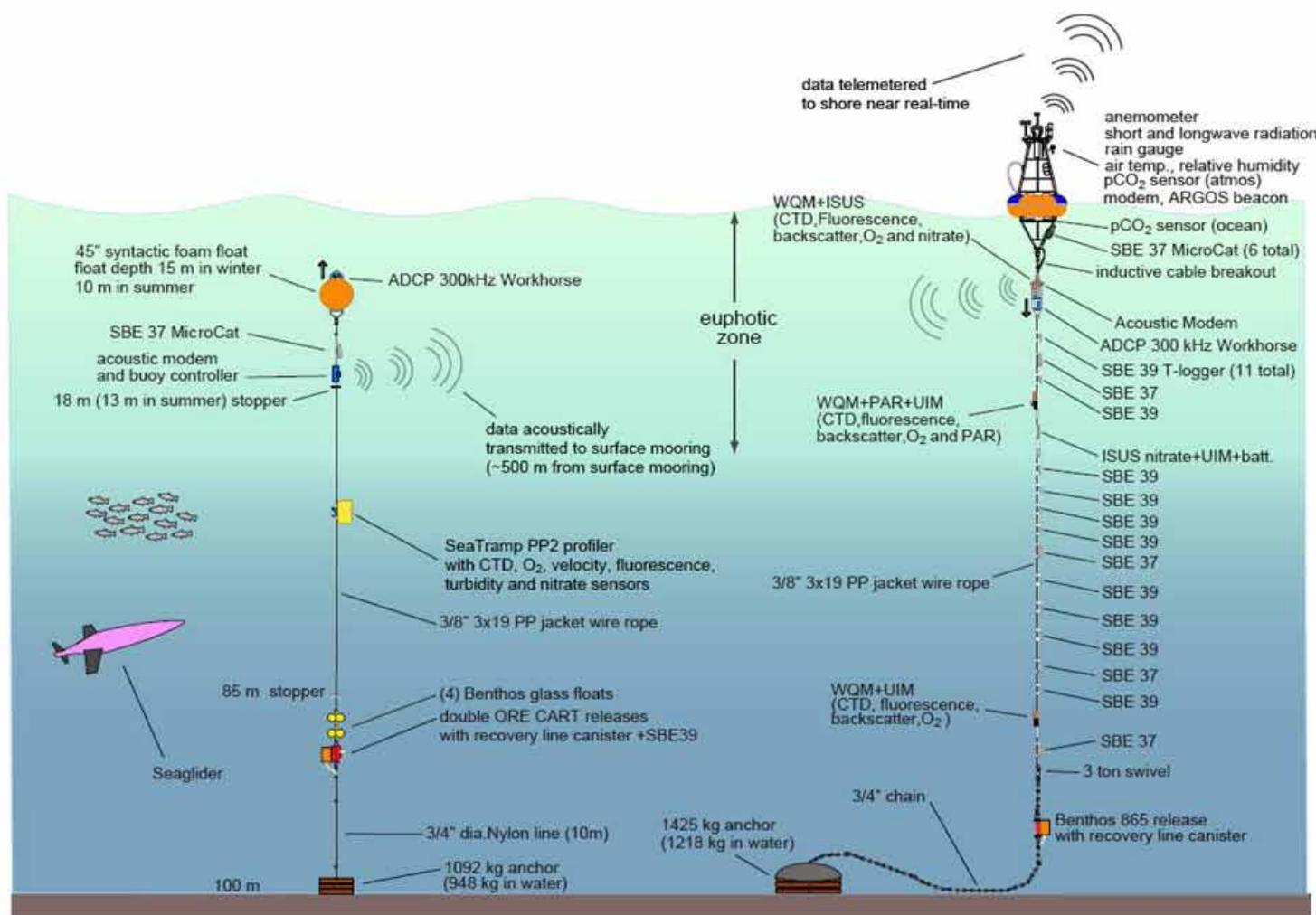
measure and track the status of this important issue.

These ocean observing assets off La Push join a network of instruments and people at work around the Pacific Northwest and the country to deliver timely and comprehensive data and information about our coastal ocean, estuaries, shorelines and Great Lakes. This NOAA-funded effort is known as the U.S. Integrated Ocean Observing System (IOOS®), a national effort that includes eleven Regional Associations (RAs) around the nation. The NANOOS is the Pacific Northwest RA covering Washington, Oregon, and Northern California. IOOS, NANOOS, and all the other RAs around the country strive to provide the integral environmental data that we as a society increasingly need to make decisions about our resources, economy, and safety.



*Eric Boget, Nick Michel-Hart, Matthew Alford, and John Mickett deploy Cha'ba for a test run in Puget Sound during June 2010.*

*Photo: Matthew Alford*



The new La Push ocean observing array is comprised of three sensor platforms: (from the left) a Seaglider; a subsurface profiling mooring; and the Cha'ba buoy. This schematic also shows the types of sensors that are attached to the mooring lines, as well as their relative placement. For the subsurface mooring in the middle, the profiling package (shown in yellow) moves up and down the line between the two stoppers collecting all the listed data, including temperature, salinity, and pressure with a CTD. The Cha'ba buoy has sensors at set depths, including pCO<sub>2</sub> sensors collecting carbon dioxide data, SBE 39 sensors that measure temperature, and SBE 37 sensors that measure temperature and salinity. Image: courtesy John Mickett

At its core, NANOOS is a community of people that provides data through one place for quicker decision-making. This community includes the scientists providing the data; our member organizations that represent tribal governments and organizations, academic institutions, federal, state, and local agencies, industry, and non-profits; and our end-users who represent the five areas of NANOOS emphasis: Maritime Operations; Fisheries and Marine Biodiversity; Coastal Hazards; Ecosystem Assessment; and Climate. Together, these groups determine the direction of NANOOS and provide input on our data products and tools.

Much of our product development efforts go into the NANOOS Visualization System (NVS), where anyone can

access a whole range of data and forecasts from around the region. The value of NVS is that it is truly a collaborative effort since it pulls in data from many disparate sources, including buoys and sensors owned and operated by our partners in federal, state, and county agencies, industry groups, non-profit organizations, and academic institutions. Now all of these data streams are available in our Google-maps based data portal, NVS. The real-time data collected by Cha'ba and the rest of the array will be available in NVS when they are deployed.

For more information, visit us at [www.nanoos.org](http://www.nanoos.org), or "Like" us on Facebook! The NVS portal can be accessed at [www.nanoos.org/nvs](http://www.nanoos.org/nvs).

## Tribal Longline Fishermen Save Birds and Bait

— Tami Pokorny, Jefferson County Water Quality

The *CF Todd*, a longline fishing vessel, arrives at the fishing grounds off the North Pacific Coast on a search for halibut or black cod. Not long after the first baited hooks touch the water, Quileute Tribal fisherman and councilmember Lonnie Foster remarks to his crew, “Here they come, boys!” A dozen or more albatrosses approach the vessel on a search of their own — for long liners and a meal.

Longlining is a commercial fishing technique where baits are attached to a line at regular intervals. As the baited line is unspooled off the back of the boat, it sits on the surface of the water briefly before sinking. Ten or more baits may be exposed to albatrosses and other seabirds at any one time, and the birds are sometimes killed while attempting to scavenge the bait. Quileute and Quinault tribal fisherman are among the first in Washington to deploy gear, called “bait savers,” designed to protect the birds and reduce bait loss.

According to the *Save the Albatross Campaign*, longline hooks present the biggest mortal threat to albatrosses. Worldwide, long lines kill an estimated 300,000 seabirds every year, of which 100,000 are albatrosses. Off the North Pacific coast, shearwaters, fulmars and gulls can also get hooked and



Black-footed albatross Photo: NOAA Fisheries Service

drown. The situation with albatrosses is most serious because their reproduction rates are slower than other seabirds. Three species of albatross range the North Pacific — the short-tailed, black-footed, and Laysan albatrosses. The short-tailed albatross is listed as an endangered species and the black-footed is being considered for listing.

A bait saver consists of pieces of brightly colored rubber tubing spaced along a line. Originally developed by Japanese fisherman and called *tori* lines (tori means ‘bird’ in Japanese), bait savers are extended behind the vessel above the fishing gear. As the tubing flaps, it frightens birds away from the



A bait saver in use. Photo: Washington Sea Grant

baited line. Studies have shown that the bait savers can be extremely effective in reducing albatross mortality and bait loss, and versions of them are used increasingly in longline fisheries around the world.

The term “bait savers” was coined by the research group led by Ed Melvin at Washington Sea Grant who first developed and tested the effectiveness of tori lines aboard demersal longliners in Alaska in 2001. As a result of using bait savers, albatross bycatch was reduced in the Alaska longline fleet by 86%. Based on this success, USFWS and NOAA fisheries provided bait savers to all long line fleets in Alaska, and now intend to introduce them to the Washington, Oregon, and California fleets. Troy Guy and Ed Melvin at Washington Sea Grant delivered bait savers to tribal longliners in Washington as a first step. Although the use of bait savers is not mandatory in Washington (it is in Alaska), Troy sees them as an important best practice for saving birds, catching more fish, and improving the fisherman’s bottom line.

“They’re so effective it’s incredible,” says biologist Scott Mazzone of Quinault Department of Fisheries. “Our fisherman like that the bait stays on the hook. It’s a win-win situation for them. They can do their part for seabirds while

enhancing their way of living.”

Lonnie Foster started using the bait savers in 2009. “We don’t want to overharvest anything or have any kind of effects that will harm the future of our kids. Because that’s the most important thing – what we do and what happens on down



Lonnie Foster aboard the *CJ Todd* preparing for a halibut opening in early May. Photo: Tami Pokorny

the line,” he says. Lonnie and John Schumack, owner of the longliner vessel *Ocean Radiant*, and other fishermen along the coast have developed tricks and modifications to improve ease of use and effectiveness of the bait savers. Lonnie invites questions from other fisherman interested in trying the device. Contact him through the Quileute Tribal Council Office at ph: (360) 374-6163.

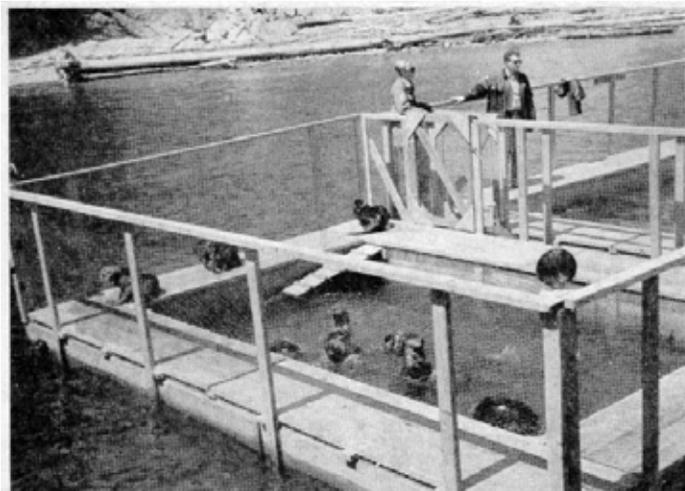
Fisherman interested in obtaining a bait saver can contact Troy Guy at Washington Sea Grant, ph: (206) 616-1260.

## At Home on the Washington Coast with Sea Otters

-Tami Pokorny, Jefferson County Water Quality

The more you learn about sea otters the more engaging they become, but the most wonderful thing about Washington’s sea otters is their remarkable comeback along our coast.

Sea otters are marine mammals. They’re a member of the weasel family and one of the few mammal species to use tools. Under each foreleg, otters have an area of loose skin. Inside one of these areas of loose skin, a sea otter may be carrying a special stone that it likes to use to break open shellfish and clams.



**HOLDING PEN**—The otters were transported to the mouth of the Quillayute River. The transplanted animals will be watched in the holding pens for about 10 days. It is hoped they will adjust to the new environment before being let loose.

Photo from the July 1970 translocation to the WA coast from Amchitka showing sea otters in floating pen in the Quillayute River at LaPush. Newspaper photo: WDFW archives

Sea otters once numbered up to 300,000 in the North Pacific but were hunted extensively for their pelts between 1741 and 1911. The world population fell to 1,000–2,000 individuals as a result of harvest as part of the maritime fur trade. By the early 1900s there were no otters remaining along Washington’s coast. That changed in 1969 and 1970 when a total of 59 sea otters were translocated from Amchitka Island in the Aleutians ahead of a nuclear test there, and released back to the waters off Point Grenville and La Push.

For over 30 years, biologists Steve Jeffries with the Washington Department of Fish and Wildlife and Ron Jameson, retired from the USFWS and USGS, have been conducting annual surveys to count Washington’s sea otter population and watching it grow. Recent counts show that sea otter numbers off the Olympic Peninsula coast have tipped 1,200 animals. They primarily occur along the rocky outer coast

near kelp beds between Tatoosh Island and the Hoh River. The waters surrounding Destruction Island, located offshore of Kalaloch Beach, are a particularly important refuge for sea otters. Other important areas are the rocks, reefs and kelp beds off Sand Point and Cape Alava. Small numbers of otters live in the Strait of Juan de Fuca as far east as Pillar Point with an occasional individual straying into the San Juan Islands and Puget Sound all the way down to Nisqually.

“It’s great that they’re back on the Washington coast, and people can enjoy them. The otters are around Sand Point or Cape Alava anytime of year. It’s good exercise to get outdoors and see what’s out there in the wild,” says Steve.

This year, the annual sea otter count will happen the week of July 11. The count does not involve public participation, but you may see agency volunteers out on the beach that week with high powered telescopes and binoculars scanning the water for sea otters. Weather permitting, the count will also include aerial surveys up and down the coast to capture high resolution digital images of areas with the highest concentration of otters. Counts focus on the midday period when sea otters are typically resting in groups at the surface.

Sea otters exude charisma. There’s no denying their cuteness. But when cornered for capture, for example after an oil spill, they can pack a powerful bite. Deanna Lynch, the USFWS’s Washington sea otter lead, has heard them likened to ‘chainsaws with fur.’ “Biologists have to handle them very carefully,” she says with emphasis. A sea otter can twist its head around inside its loose skin to easily reach the fur, or any fingers, on its neck or back. This ability allows a sea otter to groom its entire body and maintain its coat for maximum warmth. This is especially important because, unlike other marine mammals, sea otters have no blubber and depend on their fur for insulation from the frigid waters.

Healthy sea otters are rarely seen on shore. Sea otters sleep, rest, eat, mate and give birth on the water, so boaters need to be careful to watch out for them. “Those little floating brown blobs aren’t necessarily logs,” says Deanna. The Marine Mammal Protection Act forbids approaching them

within 100 yards.

By the way, river otters are not sea otters! River otters are not considered marine mammals although they may spend a lot of time in saltwater and estuaries. River otters are commonly seen on land and are known to enjoy meals on docks or boats. While sea otters swim and float primarily on their backs, river otters swim belly down. In Washington, sea otters can weigh just over 100 pounds while adult river otters rarely exceed 30 pounds.

Occasionally sea otters get caught in fishing nets, but the biggest threat to sea otters, is oil spills. “An oiled sea otter is almost as good as a dead one,” says Ron. He responded to the *Exxon Valdez* spill and would know. Every year or so, Deanna and the other stranding coordinators offer a training as part of the Northwest Marine Mammal Stranding Network: [www.nmfs.noaa.gov/pr/health/networks.htm](http://www.nmfs.noaa.gov/pr/health/networks.htm).

If you see a dead or distressed sea otter, please stay back, keep your pets away, and report the finding to this toll-free number: 1-877-SEAOTTER (1-877-326-8837)

If you’d like to see sea otters, don’t try to approach them on foot or by boat. Instead, watch them at a distance of at least 100 yards using binoculars or a telescope. They’re also great fun to watch up close and are on public display at the Seattle Aquarium, the Point Defiance Zoo and Aquarium in Tacoma, the Oregon Coast Aquarium in Newport OR, and the Vancouver Aquarium in Vancouver BC.

For more information, read the Washington State Recovery Plan for the Sea Otter at <http://wdfw.wa.gov/publications/pub.php?id=00314>



*A rare sight: sea otters hauled out on a north coast reef soaking up the sun at low tide. Photo: Joe Evenson with WDFW*

## A Handy List of RV Dump Stations Located in the West End Area

For more information: [www.sanidumps.com](http://www.sanidumps.com)

Compiled May 2011

Location	Owner/Manager	Address/Directions	Notes
Fairholme	National Park Service	West end of Lake Crescent on Hwy 101	April 2 to October 24 (\$3-\$5 fee)
Hoh	National Park Service	Upper Hoh Road off Hwy 101	Year round weather permitting (\$3-\$5 fee)
Kalaloch	National Park Service	Hwy 101	Year round (\$3-\$5 fee)
Mora	National Park Service	Mora Road, off of La Push Road	Year round (\$3-\$5 fee)
Sol Duc	National Park Service	Hwy 101 to Sol Duc Road	Open all year, but no water Oct. 25 through March 26 (snow may close road in winter) (\$3-\$5 fee)
Quileute Oceanside RV Park	Quileute Tribe	330 Ocean Drive, La Push	<u>Open to registered guests only</u>
Hobuck Beach Resort	Makah Tribe	Hobuck Beach Road, south of Neah Bay	<u>Open to registered guests only</u>
Bogachiel State Park	WA State Parks	Hwy 101 6 miles south of Forks	Year-round. Dump station fees are \$5 per use. If you are camping, this fee is included in your campsite fee.
Van Riper's Resort Motel	Private	280 Front Street, Sekiu	Summers only (\$5 fee)
Olson's Resort	Private	444 Front Street, Sekiu	February to September (\$3-\$5 fee)
Cape Motel and RV Park	Makah Tribe	1510 Bayview Avenue, Neah Bay	April to September (\$7 fee)

Clip and Save!



## Coastal Students Learn about Small Creatures: Big Impacts at Feiro Marine Life Center

-Deb Moriarty, Feiro Marine Life Center

Students enrolled in middle and high schools in the coastal communities are invited to experience “Small Creatures: Big Impacts,” an evolving program at Feiro Marine Life Center developed by director Deb Moriarty and funded through the North Pacific Coast Marine Resources Committee (NPC MRC). “We had students come down to the Center last semester who wanted to connect with the local science community but didn’t know how to do that. They participated in our program, met scientists and it all came together,” she said. Long-time Port Angeles resident and University of Puget Sound graduate, Kendra Fors is program coordinator.

Students learn about harmful algal blooms including the one in September 2010 that caused a large seabird ‘wreck’ on the coast. They also study the ways in which the nearshore is affected by land use through discussions on stormwater runoff, point and non-point source pollution, sediment deposition and dam removal on the Elwha River. Small changes in ocean pH have huge ramifications. A hands-on activity helps students understand the process of ocean acidification – what it is and what it means for the future.

Through discussion and activities, Small Creatures: Big Impacts helps students understand how we are affecting the ocean and how the ocean affects us. The teachers of all schools from Clallam Bay to Queets are reminded to schedule their field investigation at Feiro Marine Life Center by emailing [kendraf@feiromarinelifecenter.org](mailto:kendraf@feiromarinelifecenter.org) or calling (360) 417-6254.



Mr. Hunter’s class from Forks High School 2010  
Photo: Deb Moriarty

## So You Want to Write a Grant

-Katie Krueger, Quileute Natural Resources

Experienced grant writers can skip this but if you are new at the game, here are some tips.

- Make sure you, or your group, is qualified to apply!
- If the grant names a contact, absolutely do call and discuss the grant with them. They are there to help and often provide useful tips of their own.
- Check out what won before on a grantor website, if it exists.
- Gather partners together and do it EARLY. Most grants these days either require or prefer partnerships. It takes time to build these “communities.”
- Build the budget on a spreadsheet, before you write a narrative! The grant will practically write itself after you do the budget. You also may need to trim your plan if you discover early that your original idea will exceed the grant budget allowed. Find this out before writing the whole thing and adjust accordingly.
- The narrative should follow the format requested in the grant announcement. Be sure that your narrative includes all the items in the budget (and vice versa). Be complete, as well.
- Are page limits cutting your story short? See if the application can be supplemented with appendices. Another way to include things is with a cover letter.
- Letters of support are sometimes required but even if not, are great additions.
- If you work for a government, be sure your government authorizes the application.
- If you used a bibliography, provide it if space permits. It lends authenticity.
- Sell your story with a vital need. You are competing, in most cases. When all the grants are well written, a little drama about urgency can make the difference.

## Coastal Hazards Specialist Ian Miller to Help Communities Plan Ahead



Coastal Hazards Specialist Ian Miller

Japan's tsunami, sea level rise, increasing storm severity, coastal flooding and erosion — all of these factors are making communities more aware of the need to plan for coastal hazards. Washington Sea Grant (WSG) is building a program to help communities along Washington's north coast and Strait of Juan de Fuca increase their resilience to the impacts of climate change and coastal natural hazards.

Ian Miller is Washington Sea Grant's new coastal hazards specialist on the Olympic Peninsula. He will be based at Peninsula College in Port Angeles and also at UW facilities in the region through the Coastal Resiliency Program which is funded by a grant from NOAA. Ian will interact with a variety of stakeholder groups, including tribes, local elected officials, port districts, federal and state resource agencies, marine industries, and commercial and recreational fishermen.

Ian lived in Port Angeles for ten years before starting his doctoral program in Ocean Sciences, which he is now completing, at University of California, Santa Cruz. "I'm a technical specialist who can help people understand the risk of coastal hazards and how to plan for and address that risk."

Contact Ian at ph: (360) 417-6460 or [immiller@u.washington.edu](mailto:immiller@u.washington.edu) or <http://www.wsg.washington.edu>

Based at the University of Washington, Washington Sea Grant provides statewide marine research, outreach, and education services. The National Sea Grant College Program is part of the National Oceanic and Atmospheric Administration, U.S. Department of Commerce.

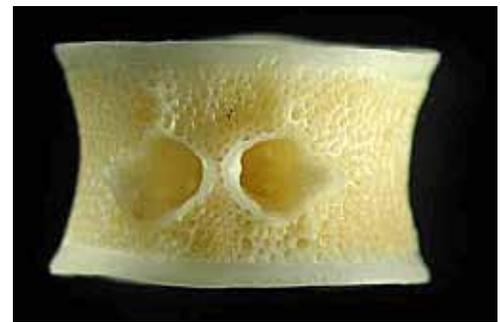
Photo and graphs: courtesy Makah Fisheries Management

## Ozette River Otters Eat Salmon Too, But Which Species?

-Jonathan Scordino, Makah Fisheries Management

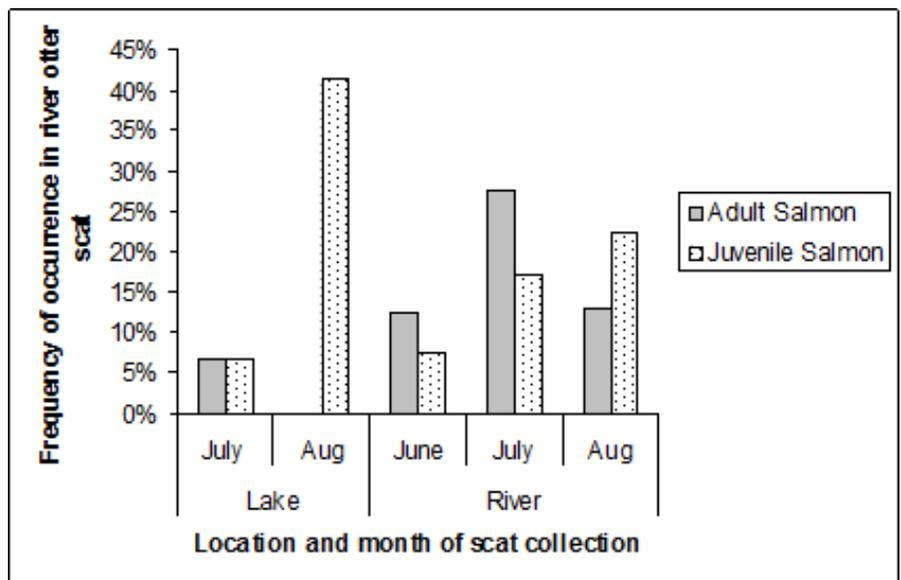
Scientists have long believed that river otters feed on slow moving fish and crustaceans while occasionally dining on birds, mammals, and amphibians. They thought game fish were too large and fast for river otters to catch. Well, apparently no one informed the otters living in and around Lake Ozette of this.

Biologists from the Makah Tribe have video taped river otters attempting to catch sockeye salmon in the Ozette salmon counting weir viewing chamber. They've also observed salmon with scars reminiscent of otter claws. This gave Pat Gearin of the National Marine Fisheries Service (NMFS) the idea to study the impact of river otters on the Endangered Species Act (ESA) listed Lake Ozette sockeye salmon. To do this, he initiated a study of the otters' fecal remains. Fecal remains, commonly called scat, were collected from 1998 to 2003 by biologists of NMFS and the Makah Tribe and by the Makah Tribe's Youth Program, but unfortunately funding was not available to identify the prey remains.



In 2010, the Tribe used a \$13,500 grant from the NPC

*Many bones have morphology that is unique to families of fish and sometimes to species. Here is a vertebra from a fish of the salmon family. It can be identified by its porous texture.*



This figure shows the frequency of occurrence of juvenile-sized and adult-sized Ozette salmon bones found in river otter scat by month and location.

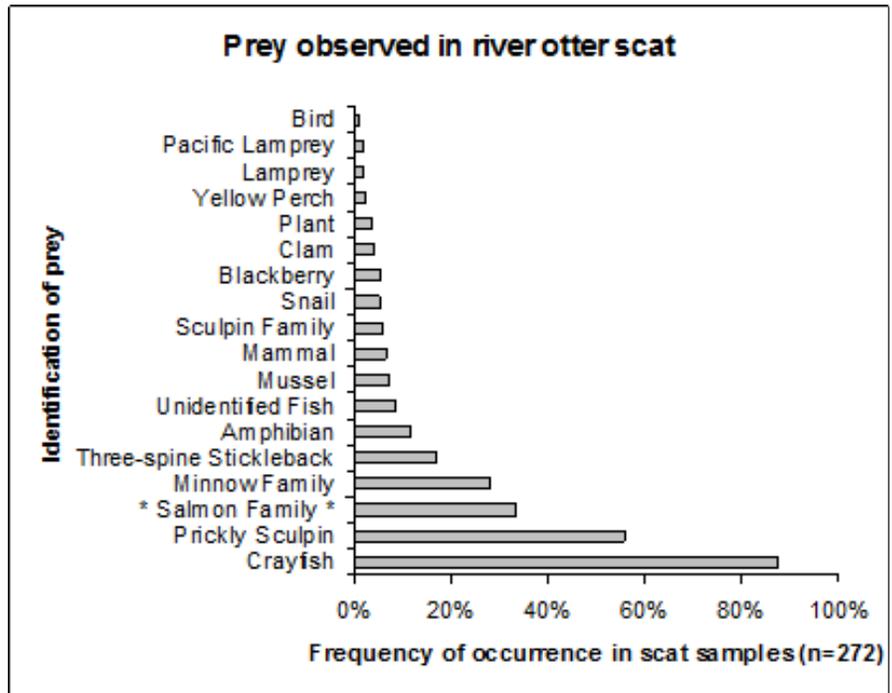
MRC to hire food habits expert Susan Riemer to identify the bones, shells, feathers, and plant matter contained in the prey remains.

Not surprisingly, we learned that river otters eat a varied diet. Crayfish were the most commonly observed prey species and bones of slow moving fish like sculpins and fish of the minnow family (such as northern pike minnow and peamouth) were also commonly observed. About forty percent of the samples also contained bones from fish in the salmon family. Apparently, river otters do enjoy a salmon steak from time to time. No previously published study provides as much evidence of river otter predation on salmon as this one.

To increase our understanding of otter impacts on salmon, all salmon bones were graded by size to adult-sized, small adult/trout-sized, and fry/smolt-sized bones. With information about the timing and location of the scat samples we determined where and when otter predation on salmon is most intense.

The study shows that otter predation on adult-sized salmon occurs most often in the Ozette River in July, particularly near the sockeye counting weir. We had expected adult predation to be greatest in May through June during the peak of adult sockeye salmon returns. Perhaps the low water flows in July make the salmon easier for the otters to catch. By contrast, scat collected around the lake had more juvenile salmon bones and fewer adult salmon bones.

The next step in determining if otters are eating Lake Ozette sockeye salmon is to analyze the genetics information contained in the adult salmon bones. The Makah Tribe received \$6,000 in 2011 from the NPC MRC to contract with Linda Park of NMFS to accomplish this. Results of the study will be reported to the MRC and submitted to the *Canadian Journal of Zoology* for publication.



This is a graph showing how often certain prey species were found in the otter scat samples.

**How do you tell a river otter from a sea otter? Take a look!**  
 Otter card images courtesy of USFWS.

**SEA OTTER**  
 Photo by Deanna Lynch

**LAND BEHAVIOR**

**Sea Otter**

- Adults range between 50 and 100 pounds
- Rarely comes ashore
- Awkward movement

**RIVER OTTER**

- Adults approximately 30 pounds
- Often comes ashore
- Swift, agile movement

**Physical Differences:**

- Sea Otter:** Tail flattened and uniform width, less than 1/3 body length; Ears hard to see; Front paws; Rear flippers.
- River Otter:** Tail round and tapered, More than 1/2 body length; Visible ears; All feet similar size; Visible claws.

© Jason Pratt

## Exploring Ocean Change with Teachers

-Jacqueline Laverdure, Olympic Coast National Marine Sanctuary

Local elementary school teachers will have an exciting professional development opportunity this summer. The Olympic Coast National Marine Sanctuary and Seattle Aquarium are co-hosting Ocean Change: Ocean Science in a Changing Climate professional development workshops for teachers. The workshops are funded in part through the North Pacific Coast Marine Resources Committee (NPC MRC).

The workshops bring teachers, students, and families together to do marine and coastal science in the classroom and at the beach. Participating classrooms have “Beach Kits” filled with marine science activities that will prepare them to study and understand aspects of their local beaches. Two field trips are offered during the school year. One is to a local beach where Olympic Coast National Marine Sanctuary and Seattle Aquarium staff, partnering with tribal and local experts, assist students with beach field investigations, water quality experiments, and integrating local cultural knowledge. The second field trip is to Seattle Aquarium or Feiro Marine Life Center and NOAA’s Olympic Coast Discovery Center in Port Angeles.

Fourth and fifth grade teachers from Crescent School District, Clallam Bay, Neah Bay, Forks, Lake Quinault, Queets, Taholah, Pacific Beach, Ocean Shores, and Westport elementary schools and Quileute Tribal School are encour-

aged to register for the summer workshop. Workshop dates are August 1-2 in Forks, WA and August 4-5 in Ocean Shores, WA. Teachers will also have the opportunity to participate in a half-day experience aboard NOAA’s research vessel *Tatoosh* on August 3. The workshop is free and clock hours or graduate credits will be available.

For more information, contact Jacqueline.Laverdure@noaa.gov Olympic Coast National Marine Sanctuary, or K.Matsumoto@seattleaquarium.org Seattle Aquarium.



# SEA OTTER

Floats high in the water

Flippers often held out of water

Swims primarily on back

Found in salt water

## WATER BEHAVIOR

### Sea Otter

- Eats while floating on back
- Paddles with hind feet and tail
- Single pup

# RIVER OTTER

Found in salt and fresh water

Body mostly submerged

Swims belly down

### River Otter

- Rarely eats in water
- Paddles with webbed feet
- Multiple pups

Clallam Bay Elementary School Teachers Shirley McGill (left), John Wonderly (middle) and Crescent School District teacher Gina Woeste (right) study sand samples at Second Beach during an Ocean Science Teacher Professional Development Workshop. Photo: Karen Matsumoto

## Salmon Recovery Projects: Camp Creek and Mill Creek

-Tom Smayda, Smayda Environmental Associates, Inc.



The Camp Creek culvert is to be replaced with a bridge.  
Photo: Tom Smayda

The Pacific Coast Salmon Coalition (PCSC) is a fisheries enhancement group working to help restore salmon runs by improving streams and rivers, wetlands and watersheds. Part of this work involves replacing fish-blocking culverts with bridges to restore fish access to upstream waters. The PCSC successfully applied for salmon recovery grant funds through the North Pacific Coast Lead Entity (NPCLE) in 2010. Two current projects include the Camp Creek culvert which is located in timberland along the Sol Duc River, and Mill Creek at Russell Road in Forks. Both of these culverts are decaying, eroding and unsafe, and their useful lifespans have ended. Both block the upstream migration of adult and juvenile salmon and steelhead.

The Camp Creek culvert is considered a total blockage because of the size of the drop at the culvert outlet and because of the high velocity water shooting through the opening. Access to about 1.2 miles of spawning habitat would be re-opened with the new bridge, giving adult fishes numerous places to lay their eggs. Even more area would be re-opened for juveniles to grow up before heading seaward. At Russell Road, the culvert creates a partial blockage that affects smaller fish much of the time and all fish during high flow conditions.

But the projects involve more than just swapping out a culvert for a bridge to allow fish to pass. Currently, the creek beds at the culverts are not good for salmon spawning or rearing. So the intent is to restore ecological functioning of a couple of hundred feet of stream bed at each site. The newly created stream beds will be built to closely resemble excellent salmon water, complete with pools and tailouts, and a meandering shape built of woody material, gravel and native plants. The projects will be deemed successful when fish regain access to upstream habitat and begin spawning at the locations that are now rusty metal pipes.

## Salmon Recovery Project: Big River

-Michele d'Hemecourt, North Olympic Land Trust

The North Olympic Land Trust (NOLT) successfully applied for salmon recovery grant funds through the North Pacific Coast Lead Entity (NPCLE) in 2010 to purchase two properties, totaling 36 acres, along the Big River. The Big River drainage is one of only three tributaries of the Lake Ozette basin with spawning Lake Ozette sockeye adults. Lake Ozette sockeye is a listed species under the Endangered Species Act. The properties contain riparian and floodplain habitat and almost a half mile of shoreline which NOLT will manage for the benefit of the sockeye.

## Salmon Recovery Project: Pole Creek

-Mike Hagan, Hoh River Trust

In 2009, the Hoh River Trust received salmon recovery dollars through the North Olympic Coast Lead Entity (NPCLE) grant cycle to decommission a road and complete a multiphase project to benefit fish in the Pole Creek basin. The logging road, located midslope parallel to the Hoh River, has been a priority for decommissioning for many years. The project was written into the Hoh River Trust's management plan soon after the Rayonier forestland in the area was acquired.

The purpose of decommissioning the Upper Pole Creek road is to reduce the likelihood of debris slides originating in the failing road bed and to improve fish passage by removing culverts and fills. When finished, the project area will become high quality forested riparian habitat extending from old growth at the banks of the Hoh River to 1300 feet elevation up on Willoughby Ridge. Pole Creek, a formerly reliable coho, steelhead and cutthroat smolt producer, is expected to return



J&D Enterprises removing old fill from the deepest cut.  
Photo: Mike Hagan

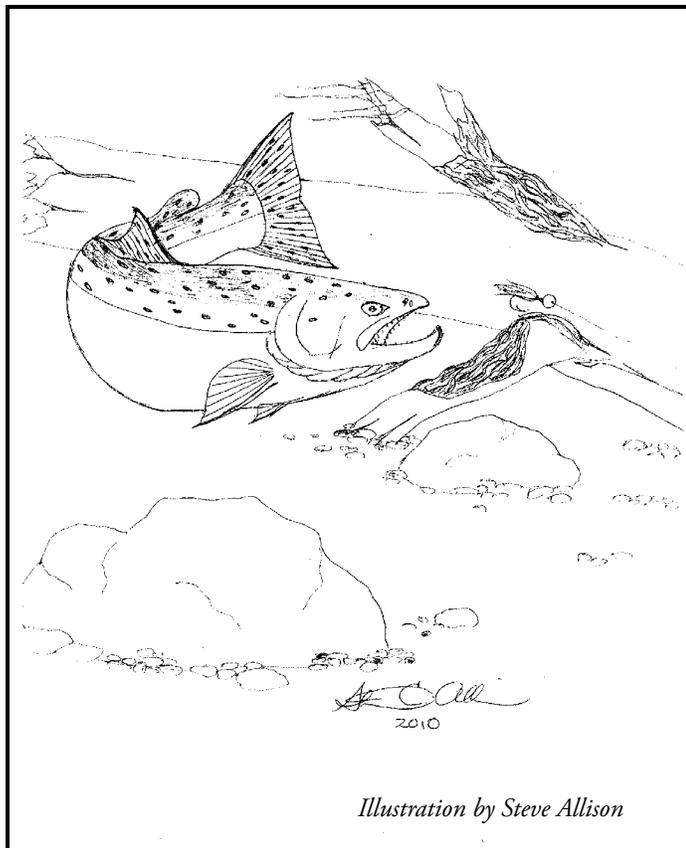


Illustration by Steve Allison

to its former productivity levels.

This was a phased project that also involved the replacement of a damaged culvert under the Upper Hoh county road with a bridge. Bridge replacement was funded two years previously but not accomplished until the same summer. Local contractors bid on the heavy equipment portion of the project with J&D Enterprises being successful. Costs were much below the appraisal done during the construction boom and high fuel prices of previous years. Subsequent monitoring has shown no unexpected erosion despite fairly heavy winter rains. Replanting of cuts and creek sides is being completed through spring of 2011. Forest management access will still be available from a different road system when needed leaving the core area as an enhanced riparian zone.



Precommercial thinning slash is used to mulch the road surface after putting in water bars. Photo: Mike Hagan

## What is the *West End Natural Resources News?*

This newsletter (formerly the *NPC MRC News*) is now a cooperative effort of three natural resource committees consisting of governments, businesses, organizations and citizens in western Clallam and Jefferson counties. The committees address salmon recovery, water quality and quantity, and coastal issues in a manner that incorporates local knowledge and priorities. Meetings are usually held in Forks.

### North Pacific Coast Marine Resources Committee (NPC MRC)

The NPC MRC promotes community involvement in coastal issues. MRC members and participants learn about resource conditions and coastal community needs, participate in local and regional projects, and sponsor activities and studies having to do with the unique management issues of Washington's outer coast. More information: <http://wdfw.wa.gov/about/volunteer/mrc>



### North Pacific Coast Lead Entity for Salmon Recovery (NPCLE)

Lead entities are local, watershed-based organizations that develop local salmon habitat recovery strategies and then recruit organizations to do habitat protection and restoration projects that will implement the strategies. More information: [http://www.rco.wa.gov/salmon\\_recovery/index.shtml](http://www.rco.wa.gov/salmon_recovery/index.shtml) and <http://hws.ekosystem.us>

### WRIA 20 Watershed Plan Implementation Body

For the purpose of water resource management, the state is divided into Water Resource Inventory Areas (WRIAs). Over seven years, a watershed management plan was developed for Sol Duc, Calawah, Bogachiel, Quillayute and Hoh Rivers. The next step is to begin implementation of this plan. For more information: <http://www.ecy.wa.gov/watershed/index.html>

Contact Rich Osborne at ph: (360) 417-2569 or email [rosborne@co.clallam.wa.us](mailto:rosborne@co.clallam.wa.us) to be added to distribution lists for electronic news and meeting information for the North Pacific Coast Marine Resources Committee (NPC MRC), North Pacific Coast Lead Entity for Salmon Recovery (NPCLE) or the WRIA 20 Watershed Plan Implementation Body (WRIA 20 IB).

North Pacific Coast  
Marine Resources Committee  
c/o Clallam County DCD  
Natural Resources  
23 E. 4th Street #5  
Port Angeles, WA 98362

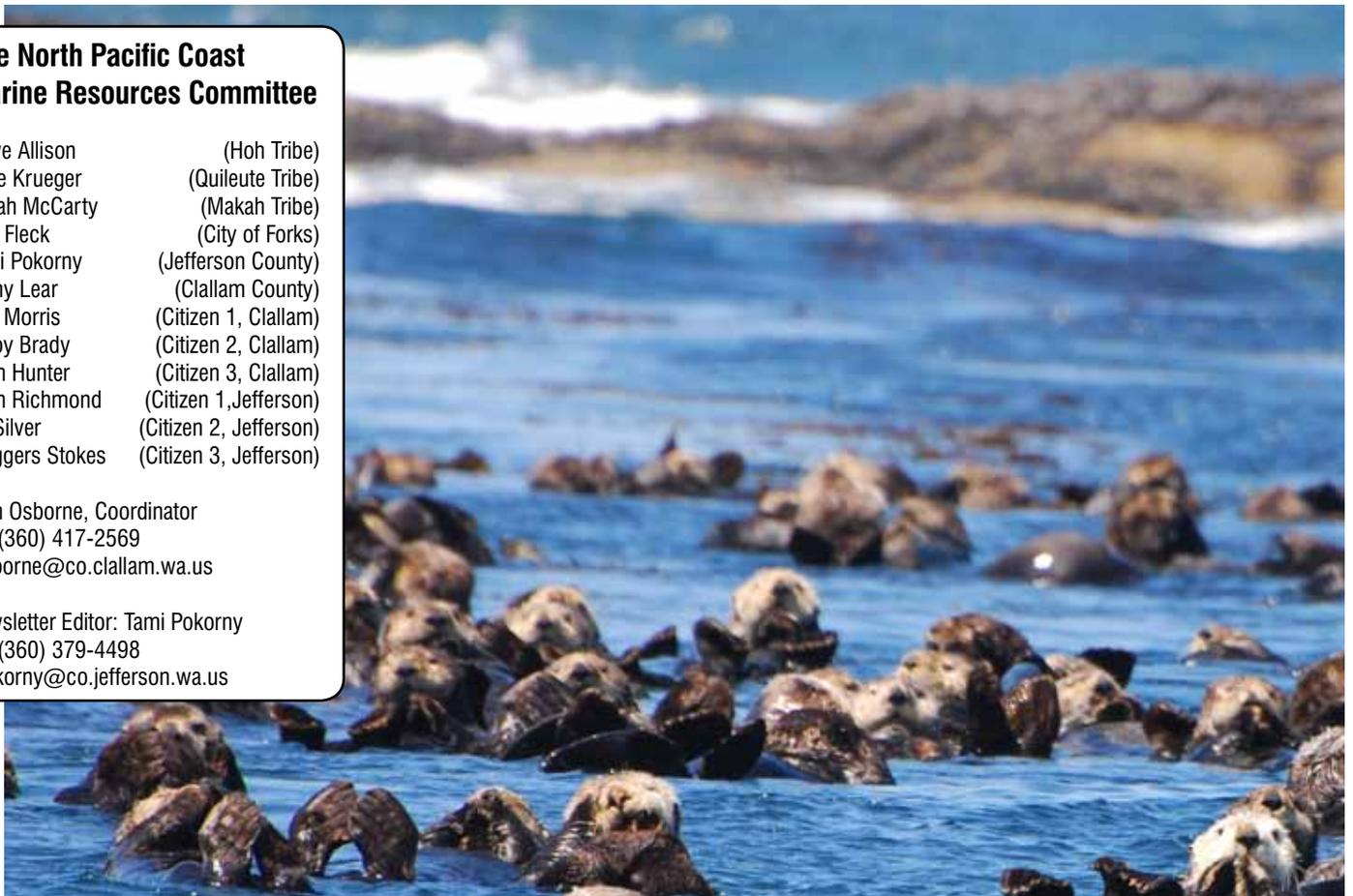
ECRWSS  
Natural Resources Neighbor

**The North Pacific Coast  
Marine Resources Committee**

Steve Allison	(Hoh Tribe)
Katie Krueger	(Quileute Tribe)
Micah McCarty	(Makah Tribe)
Rod Fleck	(City of Forks)
Tami Pokorny	(Jefferson County)
Cathy Lear	(Clallam County)
Roy Morris	(Citizen 1, Clallam)
Colby Brady	(Citizen 2, Clallam)
John Hunter	(Citizen 3, Clallam)
John Richmond	(Citizen 1, Jefferson)
Jill Silver	(Citizen 2, Jefferson)
Chiggers Stokes	(Citizen 3, Jefferson)

Rich Osborne, Coordinator  
ph: (360) 417-2569  
rosborne@co.clallam.wa.us

Newsletter Editor: Tami Pokorny  
ph: (360) 379-4498  
tpokorny@co.jefferson.wa.us



*Sea otters float together in a raft along the Washington Coast.*