



Padilla Bay Newsletter

A Joint Publication of the Padilla Bay Foundation and Padilla Bay National Estuarine Research Reserve

Winter 2008-2009



Padilla Bay

National Estuarine Research Reserve

Padilla Bay National Estuarine Research Reserve is managed by the Washington State Department of Ecology under the National Estuarine Research Reserve System established by NOAA.

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The Padilla Bay Foundation is a membership-based non-profit organization formed in 1987. Its mission is to help preserve the Padilla Bay estuary in Skagit County, Washington, through support of Padilla Bay National Estuarine Research Reserve.

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Harbor Seals at Home on the Range

Pacific harbor seals (*Phoca vitulina*) are a common sight in Padilla Bay, where they often congregate at haul-outs. These top predators feed on more than 20 species of fish and invertebrates, and are an important part of the local ecosystem. The research of Sarah Hardee, a Master's student at Western Washington University in Bellingham and recipient of a Padilla Bay Research Assistantship, sheds light on the movements of harbor seals in Padilla Bay and the San Juan Islands.



Understanding the populations and behavior of harbor seals is essential to learning how they might affect rockfish populations in proposed marine reserves in the San Juan Islands. Sarah conducted aerial surveys of seal haul-outs with the assistance of the Washington Department of Fish and Wildlife. She used these counts to estimate the total harbor seal population in the area. With her collaborators, she also captured and tagged seals at three Georgia Basin locations (Padilla Bay and two nearby island sites) with satellite transmitters in April and May of 2007. This allowed Sarah to monitor the seals' movement and rest patterns for about five months—until the tags fell off or the seals molted.

Sarah Hardee estimated that about 8,100 seals live within the San Juan Islands, Padilla Bay, and surrounding bays. Seals living in Padilla Bay's protected estuarine environment remained closer to their capture sites than the rocky reef-dwelling island seals. The tagged seals rarely used areas corresponding to potential marine reserves. While it appears that the seals placed little pressure on the proposed marine reserves during the study, Sarah's work did show that seals regularly travel farther than was previously observed in this region. Several traveled to the Pacific coast of Washington and Canada and back, a distance of over 200 km. Harbor seals will need to be monitored after the establishment of the marine reserves to ensure the success of rockfish recovery.

Sarah Hardee presented her Master's thesis, "Movements and home ranges of harbor seals (*Phoca vitulina*) in the inland waters of the Pacific Northwest," at Padilla Bay on July 16th, 2008.

Padilla Bay Staff



The 2009 AmeriCorps team takes a rare break from getting things done at the Padilla Bay Reserve. From left to right Austin Rose, Cynthia Hansen, Katherine Weston. Over the next year, they will all be involved with a variety of projects related to research, education and facilities management.

Suzanne Shull Awarded Prestigious Certification



GIS Specialist, Suzanne Shull, was recently recognized as a “Certified Geographic Information Systems Professional”. This certification represents a standard that allows people to know that the applicant has met a certain level of qualifications. It also encourages GIS users to push for excellence and to help make the public aware of the capabilities of GIS.

Obtaining the certificate involved a lengthy application process where Suzanne had to document all of her pertinent master’s level classes, professional trainings, and attendance at conferences. She had to show proof of oral presentations that she has delivered, posters she has designed, and copies of any articles she has authored. The process also involved documenting all job experience related to GIS. Points were assigned to all of these areas which allowed the GIS Certification Institute to weigh her experience in relation to their strict criteria. Suzanne will have to reapply in five years and show that she has hosted GIS meetings, attended professional GIS conferences, designed informational posters, and hosted a GIS “Educational Day” to explain what GIS is and what it can do. Congratulations, Suzanne!



Padilla Bay Foundation

How You Can Help

Grassroots involvement is the core of Padilla Bay Foundation’s commitment to protect Padilla Bay and support the Padilla Bay Reserve.

Membership in the Foundation means you are contributing directly to environmental education and research right here in Western Washington.

Categories of membership are:

| | |
|---------------------|--------|
| Senior/Student | \$25 |
| Individual | \$35 |
| Family | \$50 |
| School/Organization | \$50+ |
| Supporting | \$75 |
| Sustaining | \$100+ |
| Small Business | \$100+ |
| Sponsor | \$250 |
| Patron | \$500 |
| Steward | \$1000 |

Send your contribution to:
Padilla Bay Foundation
PO Box 1305
Mount Vernon, WA 98273
(360) 757-3234
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PADILLA BAY FOUNDATION NEWS

The Padilla Bay Foundation Steps Up in a Funding Crunch

With the expected decrease in state revenue in the coming year, Padilla Bay and all Washington state agencies have implemented various budget-tightening measures, including a hiring freeze and many spending restrictions. Because this impacts many of the programs at the Padilla Bay Reserve, the Padilla Bay Foundation has stepped in to help out. The Foundation is managing special grants that would have been difficult to implement under new state restrictions, has provided contracts for the speakers, naturalists and scientists who offer their wonderful programs on weekends, and has kept the research and monitoring program fully staffed. (See below.) Now, as always, your contributions to the Padilla Bay Foundation support important programs at Padilla Bay. Thanks!

Supporting Research and Monitoring

The Foundation is pleased to have contracted Amy Campbell to help the Reserve's Research & Monitoring Program. Amy's experience as last year's AmeriCorps Research Assistant proved invaluable when Niclole Burnett, Monitoring Specialist/Lab Manager left on maternity leave. We are glad that Amy agreed to fill in where Nicole has temporarily left off. We wish Nicole all the best, as she and her family enjoy their new son, Eli, and are thankful to Amy as she holds down the research fort until Nicole's return.



Amy Campbell at the helm of Padilla Bay Reserve's research vessel, Marcellus

| | |
|--|--|
| Name _____ | Membership Category _____ |
| Address _____ | (see reverse) |
| City/State/Zip _____ | Membership Amount \$ _____ |
| E-mail address _____ | Extra Donation \$ _____ |
| | <input type="checkbox"/> Check enclosed |
| | <input type="checkbox"/> Charge my card (VISA/Mastercard) |
| mail to: Padilla Bay Foundation P. O. Box 1305 Mount Vernon, WA 98273 | Card # _____ Expiration Date _____ Signature _____ |



Skagit Stream Team Volunteers Respond to Puget Sound Stormwater Pollution

Puget Soundkeeper Alliance has awarded the Padilla Bay Foundation \$20,000 for a new monitoring program. Stream Team volunteers will extensively monitor bacteria in the Padilla Bay and Samish Bay watersheds immediately after large rainfall events. Recent samplings have shown extremely high fecal coliform levels that have led to the volunteer closure of shellfish beds in Samish Bay. Shellfish growers normally only have monthly sampling of bacteria pollution in the water, and this will provide them with 24-hour response time to prevent any outbreak of illness from consuming contaminated shellfish. These highly competent volunteers

will coordinate with local officials to collect samples after large rain events at sites designed to locate the strongest pollution sources. Data will be shared with partners in the Skagit County Conservation District, Skagit County Public Works, Skagit County Department of Health, Skagit Conservation Education Alliance, the Samish Tribe, WA State Department of Ecology, WA State Department of Health, and the Samish Technical Advisory Committee. Sharing the data will help various agencies and the community craft solutions to rectify these conditions.

Water Quality Exhibit

Stop by the Interpretive Center this winter and check out our newest exhibit. It demonstrates the importance of clean water to estuary bivalves, and the importance of shellfish to our local economy and culture.

Contributors to this exciting new addition include:

Skagit Marine Resources Committee

Upper Skagit Tribe

Swinomish Tribal Community

Fidalgo Bay Day Participants

Northwest Straits Commission

Donations in Memory of Thomas Moody

The Charles & Edna McNeil Social Responsibility & Charitable Fund

Seattle Shellfish LLC

Taylor Shellfish Farms

Samish Tribal Community

Padilla Bay Foundation Members



Padilla Bay Foundation Membership

Grassroots involvement is the core of Padilla Bay Foundation's commitment to protecting our estuaries and supporting the Padilla Bay National Estuarine Research Reserve.

Members of the Padilla Bay Foundation contribute directly to environmental education and research at Washington State's only Estuarine Research Reserve.

Memberships can be for multiple years. Please consider payment of 2 or 3 years at a time, as this will save the Foundation considerable labor and mailing costs and insure that your dues work harder supporting the programs you care about.

Please fill out the reverse side of this form and join today.

Membership Categories

| | |
|---------------------|--------|
| Senior/Student | \$25 |
| Individual | \$35 |
| Family | \$50 |
| School/Organization | \$50 |
| Supporting | \$75 |
| Sustaining | \$100 |
| Small Business | \$100 |
| Sponsor | \$250 |
| Patron | \$500 |
| Steward | \$1000 |
| Benefactor | \$2000 |

Hand cast brass critters, mounted at the Interpretive Center, are available to donors of \$1000 and above who would like to be acknowledged in this way.



Winter Events

Presentations for December, January and February

Raptor Class

The Skagit Flats are nationally recognized for their hundreds of wintering birds of prey. This in-depth class will teach about our local raptors, emphasizing field identification and the particularly fascinating element of winter behavior. Instructor Bud Anderson has studied raptors for over 35 years, and has an incredible knowledge of local populations and peregrine falcons. The class meets 5 Thursday evenings from 7:00-9:00PM **January 15 - February 12**, with a Saturday field trip. The class fee is \$150 per person. To register, send check or money order to the Falcon Research Group, PO Box 248, Bow, WA 98232. Class size is limited, so register early.



Winter Hawks of the Skagit Flats

The Skagit Valley is an incredible area for observing wintering hawks and falcons. Learn to recognize the most common species in our area with raptor biologist, Bud Anderson. A slide presentation from 9:00-11:00 will introduce you to raptor biology, field characteristics, and common behaviors. The afternoon field trip runs until around 2:00 and is limited to 15 participants. **Saturday, January 10, 9:00.** Register online or by phone.

Swans in the Skagit Valley

The swan as a mythical creature goes back to the earliest human cultures. Each year, the Skagit is the winter home of thousands of swans that nest in the arctic. Swan biologist, Martha Jordan will present swan mythology and life history, as well as current issues. **Sunday, February 15, 10:00-12:00**, with an opportunity for viewing swans in the afternoon. Please call or register online.

Fauna of the Future

We animals inhabit a constantly changing landscape, adapting and evolving in order to survive. Join David Drummond, Merlin Falcon Foundation Biologist to look at how well we're doing in this transformative dance. We'll examine the effects of a changing environment on distributions, movements and behaviors in our ecological community. Bring your insights, local lore and questions to share. This program will help us better appreciate the challenges and solutions to insuring a sustainable quality of life in our shared world. **Saturday, December 13, 1:00-2:30.** Call or register online.

Birding by Ear in Winter

Though many songbirds are long gone, winter can be a time of raucous activity at Padilla Bay. It's prime time for wintering raptors, waterfowl and many year-round locals. Join naturalist, Libby Mills, for a morning of watching and listening for birds around Padilla Bay and the Skagit Flats. Bring warm, outdoor clothing, binoculars, field guides, and snack or lunch. Each class limited to 15 participants. Please call or register online. **Sunday, Dec. 14 and Friday, Feb. 27, 8:30-12:30.**

Living on the Salish Sea: A Sense of Place

Where are we right now? We live on the shores of the Salish Sea, impacted and inspired by a realm of rivers, forests, bays, and islands. Join an exploration of our unique home with Shann Weston, San Juan Beach Watcher Coordinator for WSU Extension, and author (*Naturescaping: A Place for Wildlife*, and *The Stream Scene: Watersheds, Wildlife and People*). We'll consider the challenges and opportunities of living with the Salish Sea, and how a sense of place leads to responsibility and action. **Saturday, February 28, 1:00-2:30.** Please call or register online.

The Breazeale Interpretive Center is open to the public Wednesday-Sunday, 10:00-5:00.

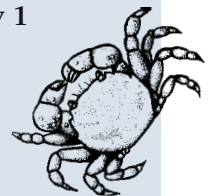
Staff are available 7 days a week.

Closed December 25 and January 1

Register online or by phone.

www.padillabay.gov

(360) 428-1558



For Teachers

Estuaries 101 Curriculum

Our national office (Estuarine Reserves Division of NOAA) developed this new on-line science curriculum. It provides powerful ways for students to learn fundamental concepts in science, develop scientific thinking skills, and explore the nation's biologically rich estuaries. From flying over an estuary with Google Maps to tracking the path and impact of a hurricane, Estuaries 101 modules feature hands-on learning, experiments and field-based activities.



The Estuaries 101 curriculum is designed for grades 9-12 classrooms, but is useful to higher or lower grades, as well. It meets key National Science Education Standards and can be readily aligned to our state standards. Each module tells the estuary story through one of three domains - earth, life, or physical science. Made to be woven into existing science courses, the modules can be used together or separately. Get more information online at www.estuaries.gov.

Cool Schools Teacher Workshop

January 31. See page 8 for details.

Storming the Sound on January 30

Environmental Educators from the North Puget Sound region will be gathering for a day of workshops, networking, and information sharing. **Friday, January 30, 9:00-4:00** at Maple Hall in LaConner. Padilla Bay staff are helping to organize and sponsor this event for classroom teachers, agency staff, and educators from non-profit groups. Teachers—there is money available for substitutes. Call the Reserve at 428-1558 or check our website at www.padillabay.gov for more information.

Videos: Sundays at 1:00 & 4:00

| | | |
|------|----|--|
| Dec. | 7 | Suzuki Speaks (60 min) |
| | 14 | Strange Days on Planet Earth: The One Degree Factor (55 min) |
| | 21 | Planet Earth: Fresh Water (60 min) |
| | 28 | Yellowlegs, Eelgrass, Tideflats (60 min) |
| Jan. | 4 | People Count: Facts of Life (60 min) |
| | 11 | Hawks Up Close (55 min) |
| | 18 | The Life of Birds: Mystery of Flight (60 min) |
| | 25 | Search for the Giant Squid (60 min) |
| Feb. | 1 | Saving Swans: One Family's Ordeal (27min) |
| | 8 | Padilla Bay (20 min) |
| | 15 | Eyewitness Ocean (35 min) |
| | 22 | Estuary! (15 min) |

Monthly Youth Programs Offer Fun Learning

Mini Explorers are the 3-5 year old learners. We look at a new topic each month, with stories, games, hands-on observations, art projects, and plenty of action. Call the Interpretive Center to register or register online.

December 10 & 11, 10:00 & 1:00
Wrack and Wreath— We'll create decorations and food for wildlife with natural treasures from the beach.



January 7 & 8, 10:00 & 1:00
Why Animals Don't Wear Clothes— Feathers, shells, scales, and slime: estuary animals have all sorts of ways to dress.



February 11 & 12, 10:00 & 1:00
Estuary!—Padilla Bay is a cool place where fresh water meets the sea. Come and find out more with games, stories, and action.

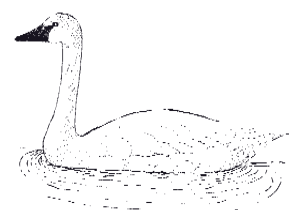


Junior Ecologists are 6-9 year olds who have fun exploring the estuary. Excursions to the beach, science experiments, games, art projects, and studying life in the bay—this program is guaranteed fun! Call the Interpretive Center or register online.

December 12 & 13, 10:30-12:00
Wrack and Wreath— We'll create decorations and food for wildlife with natural treasures from the beach.

January 16 & 17, 10:30-12:00
Migration—Some animals just won't stay put! From birds that take a thousand mile trip to crabs that crawl to deeper water, lots of animals like to travel.

February 20 & 21, 10:30-12:00
Swans— Learn all about the lives and stories of these beautiful winter visitors.





Pinto, or northern, abalone are declining at drastic rates. Since 1992, there has been a 77% decline in abundance and fewer young abalone are found. Local abalone populations are becoming rare and may face extinction within a few years.

YOU CAN HELP:

- Hunting pinto abalone is illegal; do not disturb or remove.
- Anonymously report poachers (1-877-933-9847).
- Share this information with your fellow divers & community members.
- Report abalone sightings at www.reef.org.
- Learn more at www.pintoabalone.org.



Photo: Peter J. Bryant, University of California, Irvine

Protecting the Pinto Abalone

The pinto, or northern abalone, *Haliotis kamtschatkana*, is a mollusk species native to Washington State. Sadly, if its situation does not improve soon, it may become a former species of Washington State. This snail-relative gained popularity several decades ago when recreational fishers came to appreciate its beautiful opalescent shell and its prized meaty foot.

While commercial fishing for abalone was never permitted in Washington State, recreational abalone harvest in the late 1980s and early 1990s were reported to be as high as 40,000 individuals. After drastic declines in Washington and British Columbia, abalone fisheries were closed in the early 1990s.

Since then, abalone populations have continued to decline. Washington Department of Fish and Wildlife regularly monitors sites that formerly boasted healthy populations, but abundance at these sites has declined by nearly 80% since monitoring began in 1992. A recent study in the San Juan Islands found no juvenile abalone at any of the study sites.

Abalones are broadcast spawners, meaning that males and females release their gametes (sperm and eggs) into the water to reproduce. The chances of abalone gametes finding each other in the water column are pretty low, so there must be sufficient adult abalone living close together in order to reproduce effectively. During the peak fishing years for abalone, their densities may have fallen below what is needed for effective, sustainable reproduction. The gametes in the water column became too far apart to “find each other,” resulting in fewer new abalones each year.

Recreational fishing is unlikely to be the only reason for continued population declines. Annual surveys and an intensive, several-year study have suggested that fewer abalone are surviving to adulthood now than in previous decades. Researchers are assessing the impacts of environmental factors on survival of larval and juvenile abalone.

Unfortunately, this means that abalone populations are vulnerable at several different stages of their life. If they survive natural predation and the mysterious perils of youth, they must then face poachers and a grim reproductive outlook as adults.

The Northwest Straits Initiative has been working with a group of agencies and organizations to protect and restore abalone populations in Washington. Partners in the project include the University of Washington, WA Department of Fish and Wildlife, Washington Sea Grant, The SeaDoc Society, Pacific NW SCUBA, Puget Sound Restoration Fund, The Russel Family Foundation, and Washington State Ferries.

Please help us to protect these iconic animals: avoid disturbing them in any way. You can learn more at a brand new website, www.pintoabalone.org.

Cool School Challenge Teacher Workshop: Implementing Climate Change Solutions at Your School

Teachers of grades 7-12 are invited to participate in a 6-hour workshop to learn about an exciting new educational program. The Cool School Challenge engages students, teachers and districts in a school-wide initiative to reduce carbon dioxide emissions by 2000 pounds or more per classroom, per school year. The Challenge empowers students to become leaders, take action, and make a difference. The program can be administered by any teacher interested in becoming a "Challenge Coach," and is especially suited for science and math teachers.

Join us and learn more about implementing the Cool School Challenge at your school. Free WA State Clock Hours will be provided. Puget Sound Energy is offering a \$300 honorarium to teachers in PSE's service area who implement the Challenge at their schools, submit their results and provide feedback.

This workshop is presented with support from the Northwest Clean Air Agency, Puget Sound Clean Air Agency and Puget Sound Energy. **Saturday, January 31, 9:00-3:30.** Please contact David Henry, henry@padillabay.gov or 360-428-1080 to register. Visit www.coolschoolchallenge.org for more information.



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