



## Mud, as in Slough, Has New Meaning for Visitor

By Nina Foran Gee

(Guest writer Nina Gee, author of *Springer's Quest, Life of a Pacific Salmon*, is a retired journalist who lives in Coos Bay. She joined the Friends of South Slough to connect with people who share her taste for adventure.)

**O**n my first trip to the South Slough Visitor's Center off Seven Devils Road I was hooked. Awestruck by the

elegance of the place—the view from the deck overlooking thousands of acres of water and trees, the interactive displays, the staff and volunteers—by the wealth of information available to me.

I wondered where I might fit in at a place that captured my heart, a place where I heard a siren sing!

I liked the thought that there were mysteries in a world of water I could neither swim nor play in, and a marine environment that supported plant and animal life I knew little about. I wanted to get to the bottom of the slough's mystique, uncover the magic of mud, if you will.

I took a trip on South Slough in a canoe. Bob Sleeth, a sailor who could tell tide from current in the rippling water around his two seat canoe, and kayaker Valerie Cooley, both volunteers possessing a knowledge about birds and plants, sand bars and channels, were my guides.

We glided over mud so close we parted the eelgrass with its inhabitants of diatoms—a bellwether of health in the slough.

We tasted the pickleweed and touched the moss.

I grew lost in the sounds of birds, the sight of evergreens, rhododendrons and crepe myrtles throwing dead branches and fall colored leaves at the edges of tide.

We paddled in and out with the tide, our bows driving into mud-plastered creek inlets and channels where tiny shelled creatures worked bubbles of air from

patches of water into hair-like mud traces.

We circumnavigated an island covered with trees, including a spreading chestnut planted by an explorer before us. On a sand bar, harbor seals lolled about while the tide ran away from them. Sleek, glistening black cormorants stood like statues on pilings and great blue



Nina Foran Gee

herons searched for meals in the shallow water.

Geese flew from an inlet heading south with the fall, along with flocks of small birds high over head. We heard birds call from shadowed folds of the hills.

It's a heady business discovering what the South Slough is about. Learning that oxygen packed into the floor of our healthy slough feeds millions of diatoms, which feed the mollusks and shellfish, which feed the fish, the birds, the beasts, and us, in a chain fundamental to our lives, is new to me.

The slough had worked its spell on me: On my magic carpet I'd been embraced by the shore, on the water and the mud.

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# Coffee Klatches Will Offer Landowners Opportunities to Restore Habitat

## A new watershed partnership project focuses on climate change and growth in South Slough region

Coastal-area landowners invited to plan for future  
A new approach to managing coastal watersheds is being launched this winter by the South Slough National Estuarine Research Reserve and Coos Watershed Association. The goal is to bring together local landowners and technical advisors to chart a course for managing large-scale changes in the region's natural environment.

The Partnership for Coastal Watersheds will focus on the South Slough watershed and several small watersheds that drain to the Pacific Ocean between Cape Arago and Bullards Beach (known as coastal frontal watersheds).

According to Craig Cornu, monitoring coordinator at the South Slough, a wide range of changes, including proposals for chromite sand mining; expanded golf-course and residential developments; shifts in Dungeness crab, rockfish and salmon fisheries; and increased potential for fire danger in Coast Range forests, will, or are already impacting the region. "We're creating this partnership to understand and learn from each other, and to cooperatively plan for the future of our region," he said.

The project has four key elements:

- A series of "coffee klatches" will bring together landowners in an informal setting to discuss natural habitat and how to create a vision for improving the ecological health of the area.
- The team of technical advisors and landowners will identify and prioritize watershed projects – such as repairing or removing old tide gates, wetland and stream restoration, and forest fuels management – that will provide both ecological and socio-economic benefits for local residents.
- The team will track the watersheds' response to future climate and development changes, and evaluate the effectiveness of restoration actions.
- A Web site will be developed for project news, accomplishments, meeting notes and monitoring data, including a biennial "state of the watershed" progress report.



Research Coordinator Steve Rumrill explains beach processes at Sunset Bay State Park.

"This project is intended to be ongoing, allowing our community to consider its options in response to changes characterized by long-term watershed monitoring, he said. The first two years of the project are funded by a grant from the Cooperative Institute for Coastal and Estuarine Environmental Technology with additional funding from the Oregon Watershed Enhancement Board and the Laird Norton Family Foundation.

**To learn more about the partnership for coastal watersheds, contact [craig.cornu@state.or.us](mailto:craig.cornu@state.or.us)**

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## *Creature Feature*

# *Seen Eye to Eye, There's More to Crab Than Meets the Eye*

*Story and photos by  
Tom Gaskill, Education Coordinator*

**T**he next time you find yourself eyeing a tasty looking Dungeness crab at the seafood market, thank an estuary and some eelgrass for helping to make it so.

Life for most crabs begins in late spring when the male finds a hard-shelled female and they mate. Soon the female produces a clutch of up to 1.5 million eggs that she will protectively carry beneath her wide tail until they hatch. The tiny crabs are called larvae.

As the larvae are swept along in coastal waters they go through some major changes. In a few days they will change from a microscopic stage called a zoea to a visible but transparent form called a megalops.

The blue-eyed megalops swarm in the nearshore waters of the coast and the estuary where they will travel with the currents and eventually settle to the bottom. At this point, they are hungry for anything that moves, including each other!

Enter eelgrass, a rooted flowering sea grass



*A Dungeness crab megalops swims among blades of eelgrass in Winchester Creek*

that provides food and cover from predators. This plant grows in dense watery meadows in the estuary. Eelgrass provides an anchor hold for the tiny young crabs, which are now about the size of the tip of your pinky finger.

This past spring, young crabs were found in record numbers in the Coos estuary. Swarming around eelgrass beds and burying themselves in the mud of the estuary when threatened, these tiny creatures will undergo one more change in form on the way to becoming adults.

Crabs molt. The skeleton of a crab is located on the outside of the body and must be shed for the animal to grow. Each molt expands the size of the shell. This is sort of like getting new clothes every few months for my children, who seem to be growing at an incredible rate right now.

As crabs go, they molt about a dozen times in the first year of their lives. This process slows over the next several years to a few times a year. By the time Dungeness crab reach the ripe old age of four years, they may be large enough to catch.

So this winter, when you see that handsome crab, steaming fresh out of the pot, remember to give thanks – and show your estuary a little tender loving care!



*Young crab cluster in a muddy channel among eelgrass blades*

# FOSS NEWS

## PAPER GIVES WAY TO PROGRESS FOR THE SOUTH SLOUGH NEWS

By Deborah Rudd

For centuries organizations have relied on newspapers and newsletters to make their news and ideas public.

Twenty-first century technology is changing the way people get their news, though, and South Slough reserve is changing, too.

In fact, the next time you read the South Slough *Newsletter*, you will probably be reading it on your laptop, or else downloading your own paper copy from the Internet.

"Email, online information like web exchanges and wiki groups, and social networking sites like Facebook or Twitter, are changing how we get our information and spread news," said John Bragg, South Slough's newsletter co-editor.

"Switching to an electronic newsletter will give South Slough a more effective way to tell more people about the science we do here and to answer their questions about why they should care about estuaries."

Communicating electronically can ensure timeliness, too.

"The wildlife sighting or rare plant discovery that occurred yesterday afternoon can be on the Web page this morning," Bragg said.

Changing to an online newsletter will save money for the Friends of South Slough, who pay the newsletter's printing and distribution costs, and precious natural resources.

"From trees for paper to fuel for delivery, a paper newsletter costs

more and has a much greater carbon footprint to print, mail and distribute."

South Slough will still publish an abbreviated paper newsletter and quarterly calendar. It will be mailed to Friends of South Slough and a few others who specifically request a paper copy.

Changing the newsletter is only the latest step South Slough is taking to reduce its own 'carbon footprint'. The term refers to the total energy that is required to produce a product or service, in terms of producing greenhouse gases that contribute to global climate change.

Recently staff installed rooftop solar panels to generate electricity for the interpretive center. Staff also use a hybrid vehicle for official travel.

Staff installed tankless hot water heaters and reinsulated the Spruce Ranch guest house and energy-efficient radiant heating in the ECOS laboratory.

Next on the agenda is a solar-powered water pump in the interpretive center well, and installing low-voltage lights where feasible.

With no garbage service at the remote, Seven Devils Road site, South Slough staff recycle everything they can. Staff is also switching to on-line forms and reports, relying more on email, and using recycled office paper for informal documents.

**The Friends of South Slough thank these merchants for their generous support of South Slough volunteers during our 2009 holiday dinner and celebration.**

~ BAILEY'S HEALTH FOODS ~  
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# South Slough Winter ~ Spring 2010 Activity Calendar



## BUILD A BETTER BACKYARD !

### *DO YOU HAVE A ROLE TO PLAY IN RESTORING HABITAT ?*

COME AND LEARN HOW YOU CAN HELP WILDLIFE THROUGH SIMPLE ACTIONS IN YOUR VERY OWN BACKYARD. CREATE NESTING HABITAT, REMOVE UNWANTED INVADERS, PROVIDE FORAGE AND COVER FOR A VARIETY OF LOCAL WILDLIFE. THIS IS A FOUR-PART SERIES WITH A WORKSHOP EACH MONTH. LOOK FOR THE SYMBOL BELOW IN THE CALENDAR FOR DATES AND DETAILS.



## *Students Learn About the Coast From Classroom to the Field*

By Tom Gaskill

When “watershed” is simply a word on a page, we may find it difficult to imagine exactly what one is. But when we walk out the door and begin to look around, up to the ridgelines and down to the shore, searching for the closest body of flowing water, the idea of a watershed becomes much more real.

This fall, students at Sunset Middle School in Coos Bay, are doing just that. By taking what they are learning in the classroom out the door and into the field, Jamie Fereday’s seventh grade life science classes are discovering a whole new way to think about where they live. They are beginning to figure out their watershed address.

The class began by taking a survey to find out how much they already knew about watersheds, the water cycle, and non-native species that can take over important native habitats.

They discovered that they had plenty to learn.

Short field trips to natural areas near the school have helped the students to investigate and map the local watershed, while collecting and identifying plants of the coastal forest. The data they collect will help to them to restore habitat by removing non-native plants and encouraging the growth of the native vegetation.



*Sunset Middle School students use a watershed model to investigate connections between coastal environments.*

Throughout the year, these students will revisit their local watershed numerous times as they piece together their understanding of coastal ecosystems.

These activities are supported through a project developed by South Slough and several partners including the Oregon Institute of Marine Biology, the Oregon Coast Aquarium, and the Hatfield Marine Science Center.

Earlier this year, South Slough received a \$100,000 grant from NOAA to improve the quality of coastal education in and out of classrooms in Oregon. Funding through the BWET (Bay Watershed Education and Training) program will help teachers select and use the best available curriculum to teach about Oregon’s coastal

ecosystems.

The project is called the Oregon Coast Education Initiative. A leadership team of teachers, informal science educators, and advisors will help with the selection and testing of lessons and development of field studies. The lessons will be field tested at two teacher training workshops next summer before being made available for use in classrooms.

Coastal education takes place in classrooms, labs, nature centers, museums, aquaria, and perhaps most importantly outdoors. For these students at Sunset Middle School, the door to coastal education just opened a little wider.

# South Slough Winter ~ Spring 2010 Activity Calendar

## FEBRUARY

**February 6**  
**South Slough Birding** **8 - 10 am**  
 Search the Reserve for winged wildlife. An interpreter will provide binoculars and spotting scopes. (\$1/birder)

**February 13**  
**Tide of the Toddlers ~ Wild Things** **10 - 11 am**  
 Bring your wee ones, 1 - 5 years old. Sing a song, read a story, make a craft and discover the natural world. (\$1/toddler)

**Whales An Unforgettable Journey** **2 - 3 pm**  
 View these mammals of the deep on our big screen. Popcorn provided. (free)



**February 20**  
**Explore Your Estuary Hike** **9 am - 12 pm**  
 Fun for families or individuals! Check out an Explorer pack and receive a copy of our new guide to learn about South Slough from forest to shore. (\$5/individual, \$10/family)

**Friends of South Slough Annual Meeting** **1 - 4 pm**  
 Hear live music from Jim Hockenull and listen to guest speaker Dawn Rasmussen of Pathfinder Writing and Career Services. Vote for Board nominees and learn plans for 2010! (free)

**February 26**  
**Fit Friday Hike** **8:30 - 10 am**  
 Each hike will range from 2 - 4 miles along various portions of the Reserve. Please wear layers, sturdy hiking pants, thick socks and hiking shoes or sneakers. Bring water, snack, etc. in a backpack. (free)

**February 27**  
**Build a Birdhouse** **9:30 am - 12 pm**  
 This is the first workshop in our Build a Better Backyard series. Before the swallows begin to nest, come build a birdhouse to encourage them to live in your backyard! We'll provide the supplies and tools. Work on your own or bring a partner. Please **pre-register** so we have enough kits for everyone! (\$10/birdhouse)



**The Life of Birds - Volume 4** **1 - 3 pm**  
 Learn how birds find partners and care for their eggs in this exciting installment. We'll use the big screen and provide popcorn. (free)

## MARCH

**March 6**  
**Birds on the Estuary** **8 - 10 am**  
 Explore the shores of our estuary in search of winged wildlife. An interpreter will provide binoculars and spotting scopes. **Meet at the Charleston Visitors Center.** (\$1/birder)

**Cheryl Lindmeier Art Opening** **1 - 3 pm**  
 Experience Cheryl's weaving of natural artifacts into soft sculpture. Will you be able to identify where these objects were found? (free)

**March 12**  
**Fit Friday Hike** **8:30 - 10 am**  
 Each hike will range from 2 - 4 miles along various portions of the Reserve. Please wear layers, sturdy hiking pants, thick socks and hiking shoes or sneakers. Bring water, snack, etc. in a backpack. (free)



**March 13**  
**The Silent Invasion** **1 - 2 pm**  
 View this special presentation by Oregon Field Guide to learn more about the aliens invading Oregon! Big Screen and popcorn provided. (free)

**March 19 Interpretive Center closed for State Furlough**

**March 20**  
**Removing Invaders from your Backyard** **9 am - 12 pm**  
 This is the second in our Build a Better Backyard series. Learn to identify organisms waiting to invade or living in your backyard. Learn techniques to avoid establishment of invasives and how to remove invasive species from your backyard. (\$5/participant)



**Tide of the Toddlers ~ Rabbits** **10 - 11 am**  
 Bring your wee ones, 1 - 5 years old. Sing a song, read a story, make a craft and discover the natural world. (\$1/toddler)

**March 26**  
**Capturing Nature in Still and Moving Pictures** **10 am - 3 pm**  
 Broaden your perspective and create better images of wildlife and nature in this class. For Beginners we can supply cameras for the first 5 participants to use. Intermediate photographers please bring your own camera. Bring a lunch and water bottle. Dress for the weather (\$5/person)

**March 27**  
**Paddle the Estuary** **9 am - 2 pm**  
 Explore South Slough on a trail that flows with the tide. Provide your own kayak or canoe (no inflatables or pedals), paddles, PFDs, water and lunch. Feet and legs may get wet and muddy at launch points. A driver and shuttle will be provided. **Registration required.** 3 boat minimum/8 boat maximum. (\$15/boat)

*South Slough National Estuarine Research Reserve's mission is to improve the understanding and stewardship of Pacific Northwest estuaries and coastal watersheds.*

The Interpretive Center, located 4 miles south of Charleston on Seven Devils Road, is open Tuesday through Saturday from 10 am to 4:30 pm. Trails are open daily from dawn to dusk. For more information visit us at [www.wouthsloughestuary.org](http://www.wouthsloughestuary.org)

# South Slough Winter ~ Spring 2010 Activity Calendar

## APRIL

**April 3**  
**South Slough Birding** **8 - 10 am**  
 Search the Reserve for winged wildlife. An interpreter will provide binoculars and spotting scopes. (\$1/birder)

**Creative Writing in Nature** **1 - 4 pm**  
 Join Tyler Pedersen, author of *Nostalgia, Naturally*, as he shares his work and helps you to open your mind to writing in and about nature.



**April 9**  
**Fit Friday Hike** **8:30 - 10 am**  
 Each hike will range from 2 - 4 miles along various portions of the Reserve. Please wear layers, sturdy hiking pants, thick socks and hiking shoes or sneakers. Bring water, snack, etc. in a backpack. (free)

**April 10**  
**Tide of the Toddlers ~ Big Cedar** **10 - 11 am**  
 Bring your wee ones, 1 - 5 years old. Sing a song, read a story, make a craft and discover the natural world. Follow the signs to the Big Cedar trailhead. (\$1/toddler)



**Native Plantings in Your Backyard** **4 pm**  
 This is the third in our Build a Better Backyard series. Learn the benefits, ethics and techniques of using native plants in landscaping. Take home a native plant for your yard. (\$5/participant)

**April 16 Interpretive Center closed for State Furlough**

**April 17**  
**Paddle the Estuary** **9 am - 2 pm**  
 Explore South Slough on a trail that flows with the tide. Provide your own kayak or canoe (no inflatables or pedals), paddles, PFDs, water and lunch. Feet and legs may get wet and muddy at launch points. A driver and shuttle will be provided. **Registration required.** 3 boat minimum/8 boat maximum. (\$15/boat)

**April 24**  
**Spring Mushrooms** **8:30 am - 12 pm**  
 Join naturalist Chuck Holbert to learn how to identify choice spring mushrooms. Bring a knife and bag for collecting and a water bottle. (Free to current FOSS members or \$10/participant)

## MAY

**May 1**  
**International Migratory Bird Day Celebration** **8 am - 3 pm**

Join South Slough and other local organizations to learn about birds, both resident and migratory. Guided bird trips, children's activities and speakers. Bring a picnic lunch. **All activities begin at the Charleston Visitors Center.** (free)

**May 8**  
**Tide of the Toddlers ~ Migration** **10 - 11 am**  
 Bring your wee ones, 1 - 5 years old. Sing a song, read a story, make a craft and discover the natural world. (\$1/toddler)

**Explore Your Estuary Hike** **1 - 4 pm**  
 Fun for families or individuals! Check out an Explorer pack and receive a copy of our new guide to learn about South Slough from forest to shore. (\$5/individual \$10/family)

**May 14**  
**Fit Friday Hike** **8:30 - 10 am**  
 Each hike will range from 2 - 4 miles along various portions of the Reserve. Please wear sturdy hiking pants, thick socks and hiking shoes or sneakers. Bring water, snack, etc. in a backpack. (free)



**May 15**  
**Spring Wild Edibles** **8:30 am - 12 pm**  
 Join naturalist Chuck Holbert for a morning learning about all nature's pantry has to offer. Please dress for the weather and wear sturdy shoes. The class will spend time on the trails but will not be collecting. Bring a water bottle. (Free to current FOSS Members or \$10/person)

**May 22**  
**Folded Bark Basket Class** **9 am - 4 pm**  
 Join Weaver Nan McDonald to make a folded bark basket. This basket comes from Nan's ancestors who are from Canada. Local spruce roots, cedar and ash bark will be used to make the baskets. **Registration is required.** Class will start promptly at 9 am. Good hand dexterity and the ability to stand for a short time required. All materials are provided. Class is limited to 8 participants. (\$65/participant)

**Build a Bat Box** **1 - 4 pm**  
 This is the final workshop of our Build a Better Backyard series. Build a bat box for your backyard wildlife habitat. We'll provide the supplies and tools. Work on your own or bring a partner. Please **pre-register**, so we have enough kits for everyone! (\$10/bathouse)



**May 29**  
**Paddle the Estuary** **9 am - 2 pm**  
 Explore South Slough on a trail that flows with the tide. Provide your own kayak or canoe (no inflatables or pedals), paddles, PFDs, water and lunch. Feet and legs may get wet and muddy at launch points. A driver and shuttle will be provided. **Registration required.** 3 boat minimum/8 boat maximum. (\$15/boat)

All programs begin at the South Slough National Estuarine Research Reserve Interpretive Center unless otherwise noted.

**Please call (541) 888 - 5558 to pre-register and confirm all programs.** Programs may be cancelled due to low enrollment or hazardous weather.

Activity fees and donations cover materials and are used by the Friends of South Slough Reserve, Inc. in support of the Reserve.