

Winter  
2007

# SOUTH SLOUGH News

The Newsletter of South Slough  
National Estuarine  
Research  
Reserve  
and the  
Friends of  
South Slough  
Reserve, Inc.



Charleston, Oregon

## South Slough Hosts Apprenticeships in Science and Engineering for 11<sup>th</sup> year

By Tom Gaskill

Since 1992, South Slough NERR has been the host site for one or more high school students each summer as a part of the Saturday Academy – Apprenticeships in Science and Engineering (ASE) program. For eight weeks from June through August, the students work with South Slough science and education staff to explore a field of research related to study of the estuary.

The apprentices learn new skills, develop research questions, conduct investigations, and ultimately present their work as an oral presentation and a research poster. ASE is a statewide program and therefore the opportunities offered by the Reserve have attracted students from the local area and other parts of Oregon.

In 2006, Zara Aurdahl and Geordi Chin of Marshfield High School were the South Slough ASE students. When Zara and Geordi arrived at the Reserve, both students had a keen interest in science with an orientation towards pharmacology. As they developed an understanding of South Slough's purpose and surveyed several science projects, they began to focus their interest on a specific proposal for their work.

The following key objectives were developed for their project:

- To become familiar with the

local species and to be able to recognize which plant species are native and non-native.

- To show the general abundance of *Zostera japonica*, a non-native eelgrass, in the Rhode's Dike Marsh area.

- To map the distribution of non-native upland plant species for future reference of eradication efforts and surveys.

- And, to determine whether or not shading *Zostera japonica* beds is a better method of control compared to chemical and physical removal.

Some of the observations recorded by the students included documenting that most non-native plant species thrive among the roadsides as the result of development for transportation. Disturbed soils near roadsides appear to be a likely location for non-native plants to dominate as it out competes the native vegetation that has been removed or cut down.

In one aspect of their study of non-



Zara and Geordi get muddy while studying a shading method for removing the invasive eelgrass *Zostera japonica*.

native eelgrass eradication, after 12 days of shading, *Zostera japonica* beds located in the intertidal mudflats had dramatically changed in density and color. This mechanical form of eradication appears to be an effective means of eradication for this invasive plant.

As the summer drew to a close, results of their work were presented for staff in an oral presentation and as a poster and in oral form at the ASE final symposium at Portland State University on August 19<sup>th</sup>.

The ASE program is an

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# RESEARCH AND STEWARDSHIP NEWS

## NEW RESEARCH AND MONITORING STAFF

By John Bragg

Estuarine Monitoring Assistant Adam DeMarzo began work on Oct. 12. Adam assists with South Slough Reserve's System Wide Monitoring Plan and other research when he is needed. Adam has been working as a contractor at the U.S. Environmental Protection Agency in Newport since 2003. "I was primarily responsible for implementing the field and laboratory aspects of various estuarine research projects," he said.

Adam graduated from the University of Oregon in 2003 with a bachelor's degree in science and a minor in biology. He attended classes at Oregon Institute of Marine Biology during the summer of 2002.

Adam enjoys his new co-workers at South Slough. "I am very fortunate to be working with such great people," he said.

"I'm also very fortunate to live and work on the south coast of Oregon; this is such a dynamic and unspoiled place!"

For relaxation, Adam enjoys running and mountain biking. "I've been running and mountain-biking competitively and for leisure since I was 14 years old; these two hobbies

still dominate my spare time. I also enjoy backpacking, campfires, live music, drumming, windsurfing, and skiing.

Estuarine Monitoring Coordinator Alicia Helms began work July 5. As South Slough's primary water quality specialist, Ali spends most of her time collecting water quality, nutrient and weather data for South Slough's System Wide Monitoring Plan (SWMP). The monitoring program operates continually to track changes in biological, meteorological, and



*Ali and Adam with the SWMP real-time data transmitter that sends water quality data to two satellite arrays and from these the data are beamed to a NASA and a NOAA station where it is then sent to the CDMO (Centralized Data Management Office) and posted on the internet. Check it out at <http://cdmo.baruch.sc.edu>.*

chemical conditions of South Slough's environment. Keeping the program operating requires a continual cycle of data retrieving, cleaning, calibrating, and deploying data recording instruments, collecting and processing water samples for nutrient and chlorophyll analyses, plus managing the flow of information from the data instruments to websites and databases where

researchers can make use of the information. The SWMP provides comparable data from estuarine research reserves throughout the nation.

After graduating from the University of Oregon's Institute of Marine Biology, Ali worked at Southwestern Oregon Community

College assisting the science labs. She also worked as a research assistant for the Aquatic Ecology lab at Washington State University, Vancouver, where she studied burrowing shrimp. Ali earned a bachelors degree in biology from the University of New Mexico, and a master's degree in Marine Biology from University of Oregon. Ali studied abroad in Australia for a year. Here favorite place was Wineglass Bay in Tasmania.

She lives with her boyfriend, Jason, and their three big dogs: Augie, Lily, and Sadie. The thing she enjoys most about working at South Slough is being greeted by the harbor seals and curious kayakers in the field. She's less enthusiastic, though, when she thinks about the year's worth of backlogged data files that have been waiting for her. She needs to bring that information up to date. She enjoys photography, cooking, especially desserts, hiking, yoga, knitting, pottery, and euchre.

### Newsletter Credits

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#### Board of Directors:

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Archives/Historian	Jeannine Filsinger
Ex-officio	Mike Graybill
Board Member	Jeannine Huffman
Board Member	Jody Hamel
Board Member	Myrna Rose
Board Member	David Lunde

# EDUCATION NEWS

## ESTUARYLIVE AT SOUTH SLOUGH SHARES A TALE OF TWO ESTUARIES!

By Tom Gaskill



*Commercial salmon fisherman Paul Merz had assistance from Madison Elementary students Brooke Bogardas and Regan Tucker.*

When 262 classes are all signed up for a field trip to South Slough on the same day at the same time, what would you do? Run!? Hide?! Or perhaps once you recovered from the initial shock, you would gather together the best possible team of educators, scientists, and helpers and put together a show that will keep them coming back for more. Well that is what we did and it worked!

This year's EstuaryLive program was the biggest success yet for the National Estuarine Research Reserves with over 25,000 confirmed viewers. The live broadcasts originated in New York, New Jersey, Oregon and Washington featuring estuaries and the abundant life that thrives in these productive ecosystems formed where rivers meet the ocean. Each program was developed by staff from either a National Estuarine Research Reserve or a National Estuary Program. And the final results were spectacular as students and classes from all over the country sent questions to presenters who responded live, on camera along the

shores of the estuary.

Here in Oregon, the South Slough broadcast focused on comparing and contrasting Coos Bay and Tillamook Bay, two estuaries separated by over 150 miles of coastline. The Tillamook Estuaries Partnership and the South Slough National Estuarine Research Reserve collaborated in the planning, development, marketing, and delivery of the 65 minute Oregon segment. Themes for the day included an historic perspective on Oregon coast culture, the stories of salmon, crab, and eelgrass, and finally stewardship as a way to personally connect to the estuary. Highlights included a wonderful demonstration of basket weaving with eelgrass and a three-pronged leester fish spear by Nan MacDonald and Don Ivy of the Coquille Indian Tribe. Biologists Ayesha Gray and Tom Rumreich highlighted the complex relationship salmon have with the estuary and the science that is being used to further our understanding and support management of these important fish. Evonne Mochon-Collura of the Oregon Coast Aquarium traveled from Newport, Oregon to share a diverse array of interesting crabs found in Oregon waters. Throughout the broadcast, Derek Sowers, a former Tillamook Estuaries Partnership scientist, shared watershed restoration efforts and background on the Tillamook Bay estuary. Viewers were also treated to segments on recreational crabbing and the rich and diverse life of the eelgrass meadows. As the program closed, presenters gathered around a beautiful display of crab, salmon, clams and basketry to try to answer a few more questions in the last minutes of the live broadcast.

So how does the program get from the shores of the estuary to viewers all over the world? A satellite truck and professional camera crew come to the site the night before the broadcast. In the morning, once they have laid out the 800 feet of cable necessary to transfer the video signal to the truck, they work with off-camera cable handlers and the presenters to determine the course of the on-camera movement. A satellite dish sends the signal from the shoreline to a very powerful, very fast encoding computer where the program streams out over the internet to any viewer with a high speed connection and the right kind of software. Registered classes can then send in questions over a form on a webpage. Questions get relayed by helpers from a computer to the program host and then the presenters are given an opportunity to share their knowledge.



*The satellite truck and control room help bring ELive to your classroom.*

You can view the program yourself by visiting [www.estuaries.gov](http://www.estuaries.gov) and choosing the EstuaryLive on-demand. We are hopeful that the program will continue and that next year we will be back on-line to take classes from all over the globe on a trip to the shores of South Slough with barely a foot print left in the mud. Of course, without the amazing team that made this happen, we may have to turn tail and find the nearest clam burrow the next time 262 classes start heading for South Slough.

# MISCELLANEOUS

## HELP WANTED

By Katia Sowers

Come and join the dedicated group of people who share your interest in the community resource that is the South Slough Reserve. There are many ways you can become involved with the Reserve's work. You can join our team of dedicated volunteers who help with everything from staffing our interpretive center, to monitoring water quality, running educational programs, and more. You can attend workshops, lectures, interpretive walks, or special events to increase your own level of understanding of coastal environmental issues. You can stop in at our interpretive center to view the watershed and estuary exhibits and pick up pamphlets on topics of concern to you or ask to be added to our newsletter mailing list.

The strength of the Reserve really stems from its connections to the community. You can be a part of what we do.

Volunteers are needed in the following areas:

**School Programs** – With so many schools signed up for the busy spring season, we are looking for volunteers who can help with the following fun programs:

- **Hike Leader** – Lead visiting groups of students along the 3 mile-long Hidden Creek Trail. Provide interpretation of the surroundings along the way. Training provided.

- **Education Program Aide** – Assist the South Slough Education Program Specialist, Joy Tally, in development and delivery of educational activities. Including our weekend informal interpretive programs such as Tide of the Toddlers and Estuary Explorers.

**Interpretive Paddle Tours** – Assist the Education Program Specialist in delivery of paddle tours on South Slough year round. Provide interpretation of the surroundings and assistance as a safety boater. Help with loading of boats and placement of shuttle vehicle. Must be able to provide your own kayak or canoe, paddle, and life jacket. Safety training provided.

**Program Publicity Assistant** – Assist in creation and/or distribution of fliers for the Reserve's monthly offerings of exciting guest lecturers, workshops, and interpretive programs. Post fliers at locations within Bandon, Coos Bay, North Bend, Charleston, and Coquille.

**Interpretive Center Greeter** – Serve as greeter for "through the door" visitors, provide interpretation of the exhibits, show and explain trail maps, and answer questions about the Reserve. Answer the phone and provide staff support as needed. Training provided.

**Public Outreach Assistant** – Help Reserve staff in hosting South Slough information table displays at many of the region's interesting festival events. Assist with table and exhibit set up and break down. Provide interpretive information about exhibits. Talk with festival attendees about what and where the Reserve is and its mission. Training provided.

**Trail Building and Maintenance** – Assist Reserve staff in creating and maintaining our trails. Get a great work out while keeping our trails in top form! Equipment provided.

**Landscaping** – Help beautify the areas surrounding the Interpretive Center with your green thumb! Pruning, planting, and playing in the dirt are encouraged!

The benefits of volunteering in any of these capacities are numerous. To name a few:

- Opportunities to learn more about estuaries, the Reserve, and the south coast area;
- Hands-on learning of new work skills for building your resume;
- Participate in special volunteer/staff events;
- A chance to make the Oregon coast come alive for others and to re-open your own eyes to where you live;
- Meeting people with similar interests and sharing your knowledge with them;
- And, of course, FUN!!

To become involved or for more information, please call Katia Sowers at 888-5558 ext. 27 or email [katia.sowers@state.or.us](mailto:katia.sowers@state.or.us).



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*ASE 11th year continued from page 1*

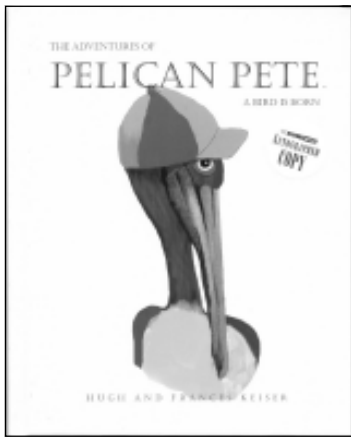
excellent example of the unique nature of South Slough National Estuarine Research Reserve, and the integration of research, education, and stewardship. Some of the students participating in ASE at South Slough have gone on to choose careers in science, science education, and medical fields, while others have discovered that science was an interest for them rather than a lifelong pursuit. Either way, these bright and motivated young people get a fantastic first hand experience learning about how science expands our understanding of the estuary and how difficult it really is to wash that estuary mud out of your clothes.

# FOSS NEWS

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## BOOKSTORE UPDATE

Dear Friends,



The Bookstore is growing and expanding and will continue to do so as space is provided with the remodel of the exhibits. We have acquired a new series of books for children about a pelican named Pete. They are highly recommended by all kinds of educational groups and are very cute. Plush toys are available to go with the books. We have also received some new smaller items...suitable for stocking stuffers, etc. Lovely gift items from a company called Ancient Graffiti are a must see...if you have a friend or family member with a penchant for frogs, dragonflies or turtles, you will want to check out these lovely home decorator items. There are napkin rings, wall hooks, vases, etc. Several of us who work at the Reserve, purchased some of these items the same day they arrived. We also have new books for birders and are getting in new books on edible plants.

We hope you will stop by and support the Reserve by supporting the FOSS Bookstore. Happy Holidays to you all!

Sincerely yours,

Jeannine Huffman and David Lunde  
Bookstore Managers

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## FOND FAREWELL

*By Katia Sowers*

At the end of October, Terry Huffman decided to 'retire' as a Friends of South Slough volunteer after 5 years and over 750 hours of dedicated service! We will miss seeing him around the Interpretive Center on a regular basis.

From Terry's first days as a volunteer at the Interpretive Center front desk, he had an interest in the history of South Slough families. Terry took on the project of interviewing former residents and helping put names to the historical family photos hanging in the Interpretive Center. Terry was also a key player behind the reprinting of South Slough Adventures: Life on a Southern Oregon Estuary. This historical book was hard to find, let alone buy, a few years ago. Today, you can find it in all Coos County libraries and in local bookstores.

Terry made many valuable contributions while serving on the FOSS Board. The latest was serving as FOSS President for the past 2¾ years. As President, Terry helped the Department of State Lands engage in formal agreements with volunteer associations, such as FOSS. These agreements are nearing completion. Terry also helped to recruit new board members and was a central figure in coordinating the canoe raffle exhibit fundraiser two years ago. "The canoe fundraiser would not have been the success it was without Terry's participation," said Mike Graybill, Manager of South Slough Reserve. Terry said that he enjoyed working with Mike in restoring the donated canoe. They spent many hours sanding and refinishing the canoe so that it would be in a beautiful state to raffle it as a

fundraiser for the new Interpretive Center exhibits.

You can now find Terry volunteering for the Family Food Educators program through Oregon State University Extension. He has been trained as a nutritionist and will teach elementary school children how to improve their eating habits to prevent obesity. He may eventually teach canning and preserving classes as well.

Thank you Terry for all the generous time you've committed to South Slough Reserve and the community. We wish you all the best, Terry, as you move on to the next chapter of your life! We hope to see you often as a visitor.



# MISCELLANEOUS CONTINUED

## WEST COAST TIDE GATES SYMPOSIUM

### So what's the big flap about a pipe with a flap?

By John Bragg

At its simplest that's what a tide gate is – a pipe or a culvert, buried in a dike or beneath a roadbed, with a flap on one end of it. The flap acts as a one-way valve and it's opened or closed by the action of rising or falling water levels, usually as a result of a change in tide, but also, perhaps, because of a storm surge. On a flooding tide the rising water pushes the flap tightly against the pipe, stopping the flow of salty water that otherwise might pass through the pipe to inundate farmlands, cities or suburban lands protected behind the dikes and levees. When the tide ebbs the water level falls and eventually the flap opens, allowing fresh water that has accumulated beyond the levees to flow into the bay.

It sounds simple, but at the West Coast Symposium on the Effects of Tide Gates on Estuarine Habitats and Fishes – a three day conference on tide gates that attracted nearly 100 people to the South Slough National Estuarine Research Reserve Oct. 31-Nov. 2, 2006 – participants learned tide gates are anything but simple. Tide gates cause changes in the physical, chemical and biological characteristics of the waters, plants and animals that live or grow around them. The conference was the first national symposium on the design, use and improvement of tide gates.

Tide gates have been used for thousands of years to keep salty water out of areas where people want to live, work, farm or raise livestock. While tide gates may keep pastures warm and cozy for livestock, they pose problems for other animals, particularly fish such as salmon,

steelhead trout or other species that live in or migrate through estuaries.

While the symposium focused on the effects a tide gate has on its immediate environment, among the primary findings of the workshop was that more work is needed to identify goals and objectives for tide gate repair projects, replacements or removals. Well-designed biological assessments can be used to develop



*Workshop attendees get a close view of the sidehinge tide gate on Coalbank Slough.*

goals for tide gate replacement projects. Successful tide gate projects rely on biological assessments and work plans developed with the cooperation and awareness of neighboring land owners, and with a clear understanding of how a project will affect the community. That might mean looking far away from the immediate environment of a tide gate replacing project in order to understand how altered flow or inundation patterns might affect the landscape.

Tide gates may pose a dilemma for farmers and agricultural operators. On one hand, farmers depend on tide gates to keep their lands productive; yet eventually they

must address the consequences of tide gates when their lands begin to subside. When estuarine wetland soils are drained behind a tide gate and allowed to dry out, the soils become exposed to oxygen and begin to decompose. Nutrients are lost and the soil becomes compacted; often the compaction of the soil is made worse by the combined weight of heavy farming equipment and livestock. If the subsidence is severe it may produce a situation where the upper end of the tide gate is stranded above the bottom of the field, rendering it useless. In addition, monitoring and maintaining tide gates can be expensive.

In the Pacific Northwest, many of the problems associated with tide gates are related to the ability of salmon and other fish to pass through a tide gate successfully. Elsewhere along the West Coast problems being addressed through innovative tide gate management range from providing habitat for shorebirds, migratory waterfowl and wading birds in San Francisco Bay to improving trust and working relationships between agricultural land owners and tribes in Puget Sound, to restoring or protecting small salt marshes in the highly urbanized landscapes of New England.

Speakers represented the OR Dept. of Fish and Wildlife, WA Dept. of Fish and Wildlife, NOAA Restoration Centers in Portland, Seattle and Gulf of Maine, NOAA Fisheries, Seattle, Coos Watershed Association, the Sauk and Swinomish Indian Tribes, South Slough Reserve, a Nehalem, OR-based tide gate manufacturer, and private habitat restoration consultants. The symposium was developed through the Reserve's Coastal Training Program.

During 2006 South Slough volunteers have....

*Coordinated the production of the newsletters*

Anterra

*Provided excellent visitor services*

Carol Weaver Ellen King

*Assisted with biomonitoring projects*

Kim Flanagan Chris Zilka Jeanne Cureton

*Staffed the Reserve booth for the Charleston Seafood Festival*

Nina Rudd Amanda Rudd Rich Hamel Terry Huffman  
Mary Ann Sherlock Norma Van Natta Paul Van Natta Valerie Cooley

*Kept the bookstore shelves full of fun, educational items*

Jeannine Huffman David Lunde

*Lent a hand during Summer Science Camp*

Amanda Rudd Nina Rudd

*Conducted marsh vegetation surveys*

Dennis Phillips Karen Sparks Chris Zilka

*Helped with the salmon habitat restoration project*

Chris Zilka Morgan Bell Louise Whitehead Emily Schultz  
Sam Bund Maggie Kirby

*Co-led canoe/kayak trips*

Louise Whitehead Valerie Cooley Dick Vigue Stephanie Danyi  
Amy Kocourek

*Built and maintained trails*

Jason Routenberg Zehue Wilcox Joe Larner Brandon Davis  
Patrick Peri Chris Seamon Zair Burris James Hill  
Brian McAndrew Duane Reed Danielle Ricketts

*Obtained Geographic Information System points to more accurately map our trails*

Griffith King

*Served as board members of the Friends of South Slough*

Terry Huffman Jeannine Huffman Myrna Rose Rich Hamel  
Jody Hamel John Quinlan Jeannine Filsinger Judy Romans  
Norma Van Natta Paul Van Natta David Lunde

*Guided kids through learning stations for the Estuary Study education programs*

Rodney B Sue Pappas Donna Cox Fred A  
Mimi Urmini Angie Holmes Theron Jardine Bill Kynsi  
Russell Jones Shaun Hardy Daniel Smith Kristi Mersino  
Kari Butler Natalie Martin Bob Karlewicz Ellie George  
Kymberlee Drake Renee Bewley Denise Sutphin Mary Williams  
Ken Dickey Wayne Durham Angie Pride Ann Petrie  
Paula Uht Tracy Kelley Dave Buche Sherry Hoyson  
Arvid H Nanette Ross Tracey Train Kate Adkins  
Amy Hardy Mari Kynsi Mary Parsagian Brian Watters

THANKS TO ALL OF YOU FOR GRACIOUSLY DONATING YOUR TIME AND EXPERTISE TO THE RESERVE!

## SOUTH SLOUGH EXHIBITS UNDER CONSTRUCTION!

By Tom Gaskill

South Slough has been working with Interpretive Exhibits Inc. of Salem, Oregon and One + Two Inc. of Portland, Oregon, our exhibit design firm to move the new exhibits for the Interpretive Center from concept to reality. The project will be completed early next year and will include an exciting collection of walk through, hands-on displays, informative exhibits, and opportunities to explore the estuary.

We are currently conducting test runs of the hands-on interactive components as we try to understand how these elements of the exhibits will become durable, interesting, and unique ways for visitors to engage in learning about the estuary. We have also been seeking the “best of the best” images to include as we try to represent the diverse habitats, plants, animals, people, landscapes, waterways, and phenomena that are a part of South Slough.

When finished, the new exhibits will invite visitors to engage South Slough’s varied environments as they learn about the estuary and our coast on a boardwalk made from recycled materials. Ocean influences, the people of the estuary, and changes in the landscape over the past 40 million years will all be explored through images, video, stories, voices and sounds. Mobile teaching stations will give students of all ages a way to go further and unlock the mysteries of the waters, forests, and tidal environments. And finally, a series of deck mounted panels will inform and encourage people to take a journey on the trails and waterways of the Reserve.

For those of you that made contributions to the exhibit fundraising effort, I want to offer our sincere gratitude for your part in making this project possible. The Friends of South Slough have been instrumental in making this project a reality and recently we received a donation of logs from the Coquille Tribe that will be used in some of the diorama elements. Stay tuned for more information about this exciting project.



South slough National Estuarine Research Reserve  
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97420  
Permit No. 309



*This Siltation Tumbler prototype will be featured on a mobile teaching station where visitors can learn about the intertidal environments of the estuary.*