AND CONNECTING OUR COMMUNITIES THROUGH
INFORMING, ENRICHING
LOCAL INVESTMENTS IN
PRINCE WILLIAM SOUND SCIENCE CENTER
CORDOVA, ALASKA
1989 - 2009
20 Years of Community Based Science
PEOPLE, SCIENCE AND EDUCATION

the Breakwater

Spring 2009

300 Breakwater Avenue
P.O. Box 705 Cordova, AK 99574

Science Center celebrates its 20th anniversary

Twenty years ago, a small group of Cordova residents had a dream to establish an independent, community-based research and education center. It was just short of a month after the *Exxon Valdez* oil spill that the incorporation papers were signed on April 22, 1989 establishing the Prince William Sound Science Center.

The Center's founders had actually spent the year prior to the Exxon Valdez' grounding planning for a community based science center. "It was immediately obvious there would be a huge increase in spill related science," said R.J. Kopchak, founding President of the Center who recently joined the staff as Development Director. "We were positioned to be a part of that effort. Incorporating the center was the easy part; the challenge was in gaining the respect and recognition needed to become a successful research facility."

In two decades, the Science Center has raised almost $40 million for its education and research programs focused on better understanding the complex ecosystems of Prince William Sound, the Copper River and the northern Gulf of Alaska. More than half of those revenues, $21 million, were spent locally through salaries to its staff and for services like vessel charters, equipment maintenance and utilities.

"The Science Center has always seen economic diversification as an important byproduct of its work," said Nancy Bird, President. "In the immediate aftermath of the 1989 oil spill, there was a lot of uncertainty about the fate of the fishing industry. It was a good pairing to establish a science center that could both provide better information for managers and the public to use in maintaining the productivity and sustainable use of the region's resources, and also offer the community some economic diversification."

James Thorne and Shelton Gay get ready to deploy a CTD, an instrument used to measure the conductivity, temperature and depth. (Photo by D. Janka)

"Our success is due to strong community support and incredibly dedicated staff and Board members," said Bird. "Without the early and continuing support from the city, we'd be hard-pressed to be here. But, it's really the people in the organization who define it and we're fortunate to have attracted knowledgeable and committed individuals to join our staff and Board. We've also had a good mix of longevity and "new blood" among both groups."

High school students join researcher Tom Kline as he looks for plankton after taking a water sample from the Science Center's deck on a sunny spring day. (Photo by A. Marquette)

Finance Director Penelope (Penny) Oswalt earns her 20-year service award this month as she was one of the first two staff hired in late April 1989. She chose to work for the Science Center because she wanted to make a difference in Cordova after the oil spill. "It was a unique opportunity to start the Center from the water up," Oswalt says, "and to begin critical research in Prince William Sound, provide data for user groups, jobs for Cordovans and bring new families to the community to diversify the economic base."

"It was often said in 1989 that it was so difficult to assess the damage of the spill because baseline research had not been done. I'm proud to have worked for PWSSC for twenty years. I was able to raise my family in Cordova at a job that was intellectually stimulating, satisfying and with great friends."

Please come celebrate our 20th Birthday!!!

Open House

Thursday
April 23rd
2-6 p.m.
At the Science Center

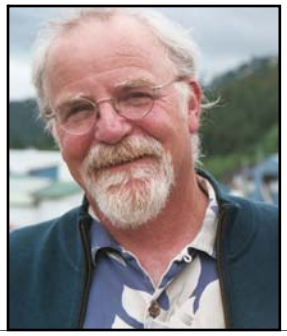
The PWSSC mission is to:

- Contribute to the comprehensive description, sustained monitoring and ecological understanding of Prince William Sound, the Copper River and Gulf of Alaska;
- Promote the goal of maintaining long-term, self-regulating biodiversity, productivity and sustainable use of renewable resources;
- Educate and inform the youth and the general public about the critical interdependence of the biology and regional economies of Alaska

Please note: a full-color edition of this newsletter is posted at our website at pwssc.org.

Staff News at the Prince William Sound Science Center

WELCOME! We are glad to have you join us!



R.J. Kopchak
Development Director
The Prince William Sound Science Center is pleased to announce that R.J. Kopchak joined its staff as Development Director in January 2009. He has been a resident of Cordova for 35 years and was one of the five incorporators of the PWSSC, as well as the first Board chairman and president. R.J. will focus on facilities and program expansion opportunities for the Science Center.

Reach R.J. at rjkopchak@pwssc.org or 424-5800 x235

Mark Halverson
Physical Oceanographer
Mark joined the PWSSC in January of this year. His primary responsibility will be to maintain OSRI funded moorings in Hinchinbrook Entrance and Montague Strait. Mark is putting his finishing touches on his Ph.D. at the University of British Columbia, where he utilized ship-of-opportunity observations to study the Fraser River plume in the Strait of Georgia.

Reach Mark at mhalverson@pwssc.org or 424-5800 x239

Jennifer Todd
Field Biologist and Lab Technician
Jennifer joined our staff in March and will be working with Dr. Tom Kline & Dr. Rob Campbell. She was born in Alaska, graduated from California State University, Sacramento with a B.S. in Biological Sciences and plans to pursue a career in Wildlife Medicine. She moved to Cordova, Alaska from Sacramento where she was working with the California Dept. of Fish & Game.

Reach Jennifer at jtodd@pwssc.org or 424-5800 x230

You can read more of RJ, Mark, and Jennifer's bios on our website, www.pwssc.org, under the "About PWSSC" tab/Staff

SAFE TRAVELS… We're going to miss you!

Neil Dawson, Avian Biologist, departed the PWSSC in mid-March after 18 months with us. His highlights include banding at Hartney Bay and Egg Island and winter seabird surveys in the Sound. Neil and his girlfriend will be working with Birdlife Belarus (between Poland and the Ukraine) for the summer before heading to India.

Jennifer Larsen, Executive Assistant, is due to depart the Science Center in late April. After being in Cordova for a year, she and her husband are leaving due to a Coast Guard transfer to Seattle. They are also expecting their first child in early September and couldn't be happier! Their love of Alaska will someday bring them back. Jenn plans on going back to her veterinary roots as a Registered Veterinary Technician.

Laurel McFadden, Field Biologist & Lab Technician, headed to Fairbanks in February to do field work with biogeochemist Katey Walter on methane release in the Arctic permafrost. She will also be working at a field station for 2 months on the northern Seward Peninsula. Laurel will be moving back to Norway in May to continue her ongoing seabird research.

Port Gravina Listening Line for Acoustic-tagged Fish

By Mary Anne Bishop, Ph. D.

In fall 2008 the Prince William Sound Science Center and the University of South Alabama Dauphin Island Sea Lab teamed up with the Pacific Ocean Shelf Tracking Project (POST) to deploy the first, large-scale acoustic array in Prince William Sound. Our partner POST is a non-profit organization that has been facilitating the development and coordination of a large-scale acoustic telemetry network along the entire length of the West Coast of North America.

The Science Center's array, located in Port Gravina, is only the second array of its kind in Alaska. The array consists primarily of deep-water acoustic receivers and will have an estimated life of 5-7 years. The array is augmented by a series of shallow-water receivers around rock pinnacles. We selected Port Gravina as the study site because it is a biological "hotspot" in northeast Prince William Sound. In spring the area is an important spawning ground for Pacific herring and in summer large numbers of salmon sharks forage there.

Initially we are studying lingcod movements and residency. Lingcod is found only along the Pacific Coast of North America and is a species of critical concern because of the combined factors of low annual productivity, long reproductive life span, an association with the nearshore zone and susceptibility to overfishing because of their high site fidelity.

In October 2008, personnel from Alabama's Dauphin Island Sea Lab and the PWS Science Center implanted 14 lingcod with individually-coded transmitters. This spring up to 30 more lingcod will be tagged. Transmitters are programmed to last approximately 2.5 years. Additional funding that made this project possible was provided by Prince William Sound Oil Spill Recovery Institute and the Rasmuson Foundation.

Scott Pegau lowers an acoustic receiver during the deployment at Port Gravina.

Below, Rob Campbell, S. Pegau, Mary Anne Bishop and Brad Reynolds stop for a picture before starting the deployments. Photo courtesy of Julie Reynolds..

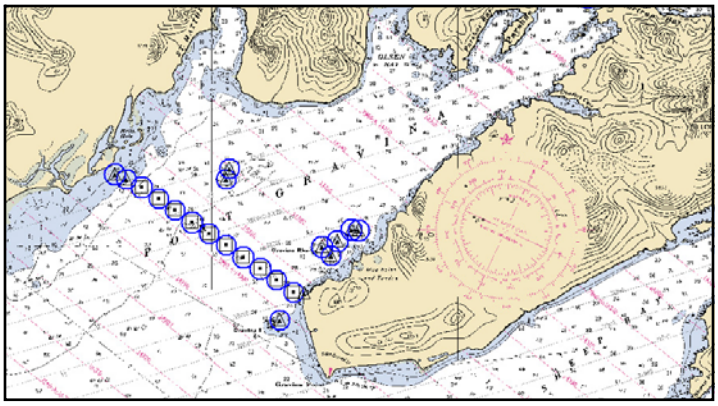


Figure 1. Location of the Science Center's acoustic array and supplemental receivers in Port Gravina, Prince William Sound.

Thanks and Welcome!

Welcome to our new members of the Science Center! Your generous donations are greatly appreciated, as they support our research and education programs and allow us to continue to inform the public about the environment in which we live.... the Prince William Sound, Copper River Delta, and northern Gulf of Alaska.

Howard & Jean Baumann—Salem, Oregon

Betty Bang, Phil King, & Peter—Anchorage, Alaska

Carol A. Woody & Joel Reynolds—Anchorage, Alaska

News from the Oil Spill Recovery Institute

W. Scott Pegau, Research Program Manager

The Oil Spill Recovery Institute (OSRI) continues to work with the Alaska Ocean Observing System to prepare for a model validation exercise this summer. This exercise is similar to the experiment conducted in the summer of 2004 to test the oceanographic circulation models. More information on this summer's experiment can be found at www.aoos.org/fieldexp/index.html and results from the previous experiment can be found in the publications section of the OSRI website (www.pws-osri.org).

One exciting new addition to this summer's work is the addition of two autonomous underwater vehicles (AUVs). OSRI recently agreed to provide the majority of funding necessary to bring both a glider and powered type AUV to Prince William Sound to provide additional measurements of temperature and salinity during the summer experiment. This also provides an opportunity to examine how AUVs operate and how they may be used to provide information during an oil spill.

California Polytechnic will be contracted to bring a Slocum glider, which is a 1.8 meter long torpedo-shaped, winged vehicle built by Webb Research Corporation (WRC) of East Falmouth, Massachusetts. It maneuvers through the ocean at a forward speed of 30-40 cm/s in a saw tooth gliding trajectory by changing its buoyancy.

Figure 1. Glider being deployed by Cal Poly personnel.

The vehicle (Fig. 1) measures temperature, salinity, chlorophyll, and turbidity. The primary vehicle navigation system is an on-board GPS receiver, with backup positioning and communications provided by an Argos transmitter. Two-way communication with the vehicle is maintained by RF modem or global satellite phone service via Iridium. Because it glides rather than uses a propeller, it is capable of longer periods at sea before needing the batteries recharged. The operating range is about 500 km diving to a maximum depth of 200 meters.

The second AUV to be deployed is the REMUS-100 AUV, which is a propeller driven platform with a length of 160 cm, 19 cm in diameter, with a weight of 37 kg (Fig. 2). Four 26 V/10 Ah Lithium-ion batteries power the vehicle for maximum mission distances of greater than 80 km at about three knots. In addition to the batteries, the mid-section of REMUS houses the compass, heading sensors, yaw rate sensor and the PC-104 control computer.

Figure 2. REMUS being deployed.

The vehicle measures current velocities, temperature, salinity, chlorophyll and turbidity. It has additional sections that allow for more measurements if desired. The vehicle's current meter data is also used to adjust the vehicle path for currents and to calculate its position in real time while navigating. Although the REMUS has many ways of navigation, the primary mode of navigation will be using the onboard compass with repeated surface GPS fixes approximately every 3 km. With this surfacing interval, the mean horizontal positional error is approximately one percent.

Both vehicles will be deployed in the central portion of Prince William Sound as part of the model validation experiment. The dates of that experiment are July 19 to August 3. Please keep an eye out for these vehicles or stop by the Science Center just before or after the experiment to get a closer look at the vehicles.

Questions about this project?

Contact Scott at 424-5800 ext 222 or e-mail him at wspegau@pwssc.org

Mount Eccles Sixth Grade Students Design and Build ROVs

By Allen Marquette

Getting kids excited about marine science and technology can be a challenge but not with the students at Mount Eccles Elementary School. Mr. Bednarz's sixth grade students are building ROV's in a program that gets kids excited about marine science and technology. Alice Dou-Wang, an education specialist for the Science Center explained that an ROV is a remotely operated vehicle operated by a wired or wireless control box on either land or from a ship.

Sixth grade students have been building ROV's in their classroom this school year as part of the Science Center's Discovery Room program. Recently, students were able to test the design and operation of their ROV's at the Bob Korn Memorial Swimming Pool in Cordova, Alaska.

Lindsay Butters and Alice Dou-Wang from the PWSSC education program as well as a host of volunteers and parents helped students get their ROV's ready to compete with each other in what was being called the first annual ROV Olympics. Students were excitedly readying their craft for tests that were designed to see how maneuverable each ROV was as different tasks were carried out on the surface or bottom of the swimming pool.

Students described their ROV's by the shape they took when completed. One was called the elephant because it had a hook in the front and center for picking up a ring at the bottom of the pool. Another was referred to as the rocking chair. Students were timed as they performed a variety of tasks with their ROV's, including getting their water craft to go through a submerged hula-hoop in the deep end of the pool, retrieve a hoop on the bottom of the pool using an improvised hook and to push a floating ball to the opposite end of the swimming pool.

This innovative technology program is funded by the Environmental Protection Agency and the PWS Oil Spill Recovery Institute as part of the Cordova Clean Oceans Project. The Project includes a marine debris clean-up activity and a community outreach and Ocean Technology Project, which actively encourages sixth grade students to become skilled in the use of robotic technology and its potential application in ocean exploration and oil spill response.

Dylan Cheshier and Steven Swartzbart with ROV 2. Photo by Allen Marquette.

Lindsay Hammer and Devena Whitcomb navigate their ROV in the Bob Korn Memorial pool in Cordova. Photo by Allen Marquette.

Discovery Room educators from the Prince William Sound Science Center are facilitating two sessions each month for the 25 students in Mr. Bednarz's sixth grade class including a one-hour long class and a two-hour long lab period. Students began the school year by learning about many different kinds of technologies and equipment used in ocean research and exploration, including diving bells, diving suits, gliders and remotely operated vehicles.

During lab periods, students built diving bells using plastic bottles, aquarium pumps and air tubing. Simple gliders were made from recycled floor linoleum. These simple machines were used to explore such principles as lift and drag, density and buoyancy. The activities helped prepare students for their final project: the creation of a machine that is capable of cleaning spilled oil from the surface of the water.

After exploring several examples of ROV designs, students were given lengths of PVC pipe, PVC connectors and creative license to design an ROV that can ultimately be used to capture or contain oil. The students began by making their ROV frames from PVC; next they attached motors with propellers for propulsion and other parts such as buoyant foam, weights for ballast, removable arms and netting.

Dou-Wang explained that the ROV project and its related activities would be an ongoing program for Mount Eccles sixth grade students in coming years. The PWSSC education program staff would also like to thank the following people and organizations for their help in making the ROV Olympics of 2009 a big success: Extra special thanks goes to Scott Pegau of the PWS Science Center for his assistance with the ROV motors, switches and wiring; Science Center staffers Alice Dou-Wang, Lindsay Butters, Allen Marquette, Kate Alexander, Rob Campbell and Brad Reynolds, the projects "seal" who helped out in the water during the ROV Olympics; NOSB students Shannon Lindow, Craig Bailer and Keegan Irving, and the Bob Korn Memorial Pool Staff, especially Megan Mullins.

Check out our camps and community boating trips!

Enjoying a nice day of kayaking. Photo by PWSSC.

Community Kayak Day

Date: May 30 or June 6, 2009

During kayak day you will explore the intertidal and open water zones of Orca Inlet, led by experienced kayak guides from Cordova Coastal Outfitters and environmental educators from the Science Center. Need to borrow a kayak? Don't worry-Cordova Coastal Outfitters will be able to help you out!

Students in the Oceanography of PWS program enjoy a sunny day of kayaking. Photo by L. Butters/PWSSC.

Oceanography of Prince William Sound

Dates: June 22-July 1, 2009

Oceanography of Prince William Sound is an adventurous, ten-day field course that includes a three-day guided kayak expedition. The course is based out of Cordova, Alaska and includes travel to and from Whittier on the Alaska State Marine Highway. The Oceanography course combines technical skills and hands-on, experiential learning opportunities in an active study of physical and biological oceanography. Participants will explore the beautiful Prince William Sound and gain experience in the fields of physical science and marine ecology. Four undergraduate credits are available through the University of Alaska, Prince William Sound Community College.

Day Campers explore the mud flats (and the flies!) at Hartney Bay. Photo by PWSSC.

From the Forest to the Sea Day Camp

Dates: June 8-12, 2009

Science Day Camp is a great time to be active and have fun in the outdoors-and learn about the amazing landscape that surrounds Cordova. Each day is filled with hands-on activities, games and adventures. During your week at camp we'll hike through the rainforest, observe glaciers up close, canoe through the wetlands of the Copper River Delta and explore Orca Inlet. By the end of the week you'll be able to see for yourself that from the forest to the sea...it's all connected.

Navigating Alaganik Slough on the Copper River Delta. Photo by PWSSC.

Community Canoe Day

Date: August 8, 2009

Fun for the whole family! Join experienced guides from the Science Center and the Forest Service for a paddle through one of the waterways of the beautiful Copper River Delta. You will learn about the function and importance of wetlands and may even get to view some wetland inhabitants up close!

Science Camp I students take part in face painting. Photo by PWSSC.

Science Camp I—Ages 10-12

Dates: June 15-19, 2009

Science Camp II—Ages 12-15

Dates: July 20-25, 2009

Science Camps engage campers in active exploration of the ecosystems of the Prince William Sound and Copper River Delta. Each day is filled with fund adventures and hands-on activities that help campers understand how from the forest to the sea...it's all connected. Outdoor adventures include hiking, kayaking, canoeing, river rafting and glacier trekking. Nights will be spent at our field camp on the Delta and will be filled with evening camp activities, delicious meals, crafts and games.

DON'T MISS OUT
ON THESE FUN-FILLED
AND REWARDING ADVENTURES!

HERE'S HOW TO REGISTER...

You can **download** the Summer Program registration form directly from our website at pwssc.org/education/education.shtml. Bring in or mail in the completed form.

OR

Stop by the Science Center
and pick up a registration form from the front office or Lindsay.

QUESTIONS???
Contact Lindsay Butters at
424-5800 ext 231 or lbutters@pwssc.org

JOIN US THIS SUMMER!

2009 PWSSC Summer Programs Schedule

Session	Date	Age	Cost	# Participants	Activities
Community Kayak Day: Orca Inlet	May 30 or June 6	All ages	$10	Equipment dependent	Kayaking, tidepooling
Tidepooling for Tots	June 1, 2-4 pm (June 2 if rain)	2-6 yrs. with parent/ guardian	Free!	No Limit!	Tidepooling, ocean crafts
Science Day Camp*	June 8-12	8-11 yrs.	$175	18	Hiking, boat ride, canoeing, glacier viewing
Science Camp I	June 15-19	10-12 yrs.	$350	12	Kayaking, hiking, rafting
Oceanography of Prince William Sound	June 22 - July 1	Grades 11 and up	$995 + $25 for academic credit (optional)	10	Kayaking expedition, hiking, camping
Science Camp II	July 20-25	12-15 yrs.	$425	12	Kayaking, hiking, glacier trekking, rafting
Watershed Stewardship Program**	July 22-31	Grades 9-12	Please contact Lindsay for information	10	Hiking, river rafting
Community Canoe Day*: Alaganik Slough	August 8	All ages	$10	Equipment dependent	Canoeing

* Run in partnership with the **U.S. Forest Service/Cordova Ranger District**

Run in partnership with **Wrangell Institute for Science & the Environment and the **Copper River Watershed Project**

Copper River Watershed Stewardship Program

The Copper River Watershed Project, Wrangell Institute for Science and Environment (WISE) and the Prince William Sound Science Center have joined forces to implement the 2009 Copper River Stewardship Program. Ten students from throughout the Copper River watershed will be recruited to participate in this 10-day adventure through their watershed. The goal of this project is to engage future leaders of the region in an active exploration of their surroundings to learn about the history, ecology and future challenges facing the watershed and the wild salmon upon which they and their communities depend.

Funds to support this valuable program **are still needed!**

Students at Miles Lake on the Copper River. Photo courtesy of WISE..

Join as a **Copper River Ambassador** by sponsoring a student or providing a partial scholarship (from $1,500 to $25).
For further information on this program, contact Lindsay at lbutters@pwssc.org.

Disco Room News

By Alice Dou-Wang

Discovery Room is a busy place this year. For students in third through fifth grades, this year's projects combine classroom sessions with monthly monitoring field trips for hands-on learning. Third and fourth graders are learning about salmon and taking monthly field trips to monitor salmon habitat at Eyak Lake. In partnership with the Copper River Watershed Project, students have been collecting data on stormwater input and storm drain debris, measuring water quality, and making general habitat observations. Students are also protecting salmon habitat by picking up trash along Lake Avenue that might otherwise be washed into Lake Eyak. *Continued on page 11*

Third graders help to protect salmon habitat.

Team Visceral Mass Wins Ocean Quiz Bowl

By Lindsay Butters

Two teams of Cordova High School students competed in the 2009 Tsunami Bowl held in Seward February 5-8, 2009. Fifteen teams from around Alaska participated in the Tsunami Bowl, the regional competition of the National Ocean Sciences Bowl (NOSB). This year's regional competition consisted of two components: the usual round-robin style quiz bowl and a research project based on Ocean Acidification which included both a research paper and a 20 minute oral presentation.

Cordova's Team Visceral Mass won First Place in the quiz bowl, and took Third Place overall once their research project scores were factored in. The team has competed together once before; team members Drew Lindow (senior), Trae Lohse (senior) and Ian Americus (junior) have been participating in NOSB since 2007, and Grafton Schikora (senior) and Craig Bailer (sophomore) joined for the 2008 Tsunami Bowl.

Team Visceral Mass was dubbed the "team to watch out for" after last year's Tsunami Bowl when they lost their grip on the first place seat by one question-actually, one *syllable*, allowing Juneau-Douglas team Naughty Nautilli to sneak ahead for the win. The Cordova team ended up taking home a bronze medal, but finished the 2008 bowl with the best record overall. With this near-win in their minds as they began preparing for the 2009 competition, Visceral Mass studied extra hard this year, focusing on all areas of ocean sciences including biology, physical oceanography, chemistry, geology, geography, technology and social sciences.

Their win in Seward this year was no less dramatic as they faced the Naughty Nautilli a second time in the Championship Match, again entering undefeated after 10 matches. The teams were tied after the first quiz round, then Juneau Douglas took a small lead after the team challenge questions. Visceral Mass regained the lead in the second quiz round, when, with an advantage of one point, the moderator ran out of questions with 18 seconds remaining in the match. The audience and coaches held their breath while the officials conferred over the rule book, and ultimately ruled that the match ended with the last question and Cordova was the winner. Finally, after three years, a team outscored Juneau-Douglas in the quiz bowl!

New Fish on the Dock *team members Christina Morrisett, Keegan Irving, Shannon Lindow and James Allen getting prepared for their first Ocean Science Bowl competition.*

Visceral Mass *team members Craig Bailer, Grafton Schikora, Trae Lohse, and Drew Lindow at a practice session in Cordova held prior to the competition in Seward. Not pictured is Ian Americus.*

Cordova also fielded a second team that attended the Tsunami Bowl, the New Fish on the Dock. The New Fish were a mixture of veterans and students new to NOSB: Darin Gilman (junior) and Keegan Irving (junior) got their feet wet last year when they finished eleventh out of fifteen teams. Rookies Shannon Lindow (sophomore), Christina Morrisett (sophomore), James Allen (freshman) and Jessica Smyke (sophomore) rounded out the team which finished in Fifth Place at the 2009 competition, an outstanding finish considering the four teams ahead of them were composed of seniors and veterans to the game.

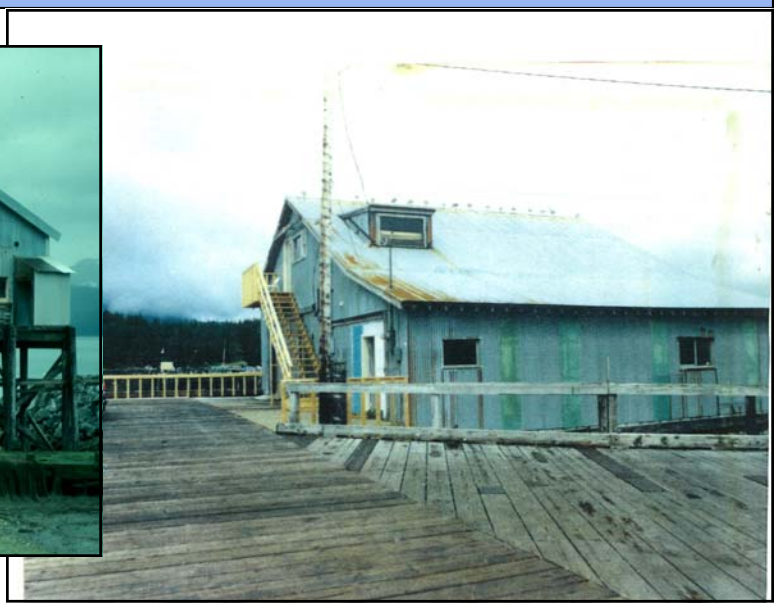
Both of Cordova's teams owe their high ranks at the Tsunami Bowl to their own commitment to attending evening practices twice a week starting in October right up until the week of the competition. Coach Lindsay Butters is impressed by the students' interest and willingness to spend their time at the Science Center studying the diverse fields of ocean science. In addition to conducting research related to Ocean Acidification and its impacts on Cordova's resources and economy, the students interacted with several guests who gave presentations on a variety of marine and technology topics. Butters would like to thank all those who helped with NOSB practices including Scott Pegau, Alice Dou-Wang, Rob Campbell and Torie Baker. Thanks also to the parents for supporting their students' participation in NOSB, particularly those who traveled to Seward for the competition.

The Science Center is already looking forward to next year and continuing to grow Cordova's National Ocean Sciences Bowl program. We hope that this year's team members will return, bringing with them some fresh new faces. And to Visceral Mass' graduating seniors, Drew, Trae and Grafton, it has been fun working with you over the last three years and best wishes for all your future endeavors!

– – – –

Cordova's NOSB teams are supported by community donations and the Oil Spill Recovery Institute. The Alaska Tsunami Bowl is sponsored by the University of Alaska Fairbanks School of Fisheries and Ocean Sciences, and the Alaska SeaGrant Marine Advisory Program.

20th Anniversary of the PWSSC... Then and Now



THEN... In 1989, the City of Cordova offered the PWSSC a vacant waterfront building to begin its operations. Originally build in 1963 for fish processing, it has served as the city harbormaster's office, a bunkhouse, an electronics shop, and even a boat warehouse. Although the PWSSC was in planning stages before the 1989 Exxon Valdez oil spill, that event catalyzed its founding. The City of Cordova and Alaska's legislature were early financial supporters. Finance Director Penelope Oswalt was there at the very beginning, as one of two initial paid staff and founding Board President R.J. Kopchak recently returned to the staff, now serving as Development Director.

NOW... The Prince William Sound Science Center has experienced many changes over the years. Thanks to grants primarily from the State of Alaska, the city-owned building was remodeled to accommodate offices and a lab facility. There is a sun-filled atrium when you enter the front door where you can purchase retail items or hold a meeting. As a non-profit organization, we now house 15 full-time staff members, 5 part-time staff members, and 3 seasonal staff members. Plans are underway to build an addition on land nearby to accommodate visiting scientists, equipment storage and our growing staff and programs.

Winter Work in Prince William Sound: Reasons Not to Hibernate

By Neil Dawson

I love the onset of winter in Cordova. After the fishing fleet has returned, most people have vacated town and much of the land is blanketed in snow, our field season begins. In the past 2 winters I've been lucky enough to perform over 2,000km of surveys in Prince William Sound as part of a seabird study funded by the Exxon Valdez Oil Spill Trustee Council.

The vast majority of marine science is focused on events of summer – plankton blooms, spawning fish and breeding seabirds. Yet the cold winter, when food may be scarce and conditions extreme, has the potential to regulate populations of our wildlife. Scientists make many assumptions about this time of year without getting out there, and this is where many of the unanswered questions remain.

The Prince William Sound herring population is still not recovering after that slump in 1993 and low winter survival of the juveniles may be a key factor, as their numbers are needed to bolster the spawning population at ages 3 and above. There are around 200,000 seabirds in PWS each winter and herring is on the menu for most of them. For these reasons, we are looking at the distribution of seabirds in winter, particularly in relation to herring and assessing the impact their predation may be having on the herring population. From another perspective, seabirds like the Marbled Murrelet need these fish to see the winter through and dwindling numbers of this mysterious species, despite successful breeding, indicate they too may be struggling in winter.

Yet working with seabirds in winter is not easy. They are not tied to breeding sites and few ever touch land. They also eat a greater variety of things – for some that means whatever swims or floats past their face. We really need to develop our understanding of seabird behavior in winter. In the not-so-distant future, tags will be able to tell us a great deal about a seabird's winter, but for now tags must be recovered, which is almost impossible because we don't know exactly where they breed. Satellite tags could overcome this, but they are very expensive and, currently, only suitable for large birds such as geese and albatross.

A group of seagulls seen at Montague Straits in December 2006.

A humpback whale seen during a winter whale survey in conjunction with the herring restoration research program. Photo courtesy of John Moran.

Getting into the field is always an enlightening and irreplaceable experience. So for now we hop on boats, observe and survey, using tools such as acoustic fish surveys to learn what is happening beneath the surface. All too many studies are conducted from desks and subsequently all too many researchers and students are lacking basic field skills. The oceans are extremely complex and though we love to generalize by nature, that makes for poor science. So we take our chances and get out to sea, often collaborating with other researchers to minimize costs. Of course, not everyone wants to hop on a boat in January, in Alaska, and I can understand that. The weather is not always ....erm ....friendly, and the water is not always ....erm ....liquid. The seas are not exactly crowded. But we're lucky to have a skipper in David Janka with an uncanny ability to side-step bad weather – 'the Janka shimmy' as my soccer analogy goes.

Because good weather and boat time are scarce, there is almost a duty to collect more data than we need and make that available for other researchers. So we record data on the numerous marine mammals and every detail on birds' locations and behavior, so they may be used for population estimates or future foraging studies. This we will make available to researchers through the North Pacific Pelagic Seabird Database. New coastal habitat data for PWS will become available in spring 2009 through the Shorezone Project and this could pave the way for many new studies. And further in the future, detailed information on sediments or tidal fronts in PWS could give existing data new possibilities.

During winter in Prince William Sound you never know what the next day will bring – a social gathering of orcas with a red sunrise backdrop, falling asleep listening to the breathing of humpback whales all around, a new hotspot for thousands of feeding seabirds, or just a big old snowstorm.....it's all very memorable.

WHALES... DID YOU KNOW???

Humpback whales hold the record for the longest migration among mammals • Sperm whales have the largest brain on the planet, which can weigh up to 20 pounds • The deep voice of the blue whale can travel up to 100 miles underwater • The blubber on whales that live in cold water can be up to 20 inches thick.

Somber anniversary marks 20 years since the *Exxon Valdez* oil spill disaster—Events & Resources

March 24, 2009 marked the 20th anniversary of the Exxon Valdez oil spill resulting in the largest oil spill in U.S. waters. At least 11 million gallons of North Slope crude oil was spilled and most of that fouled beaches from Prince William Sound to south of Kodiak Island, a distance of 470 miles.

A number of events commemorating the anniversary occurred over the past two months in Anchorage, Cordova and other spill-impacted communities. In February, the Alaska Forum on the Environment – an annual event held in Anchorage - included almost two days of workshops and presentations focused on the oil spill, research related to it and changes implemented to improve prevention and response capabilities. The Alaska Marine Symposium, held earlier in January, included a workshop highlighting the Pacific herring research program and ongoing efforts to understand why that critical fish population remains "not recovering" 20 years after the oil spill.

On the actual anniversary of the oil spill, five communities were linked via video-conference for an all-day event sponsored by the Prince William Sound Regional Citizens' Advisory Council. Partners in Prevention and Response included a variety of panel discussions on the legal issues, the changes in technology and organization by the oil industry, and presentations on the economic impacts of the herring fishery's demise and current oceanographic and marine research.

Staff from the PWS Science Center and Oil Spill Recovery Institute participated in these events and also hosted a separate evening affair in Cordova that included a showing of the new documentary, Black Wave, released by Macumba International, a Canadian film production company (www.blackwavethefilm.com).

The *Exxon Valdez* Oil Spill is a two-sided brochure compiled in 2009 by PWSSC and OSRI staff to highlight what happened, the immediate impacts, the current status of resources injured and improvements in operations and response since 1989. This brochure may be downloaded from our website and photocopying is encouraged! www.pwssc.org/education/FinalEVOSbrochure.pdf

A variety of materials are posted at the *Exxon Valdez* Oil Spill Trustee Council's website – www.evostc.state.ak.us - including a **20th Anniversary Report**, a short (12 min.) **video titled "*Exxon Valdez* Oil Spill – Have We Recovered?"**, and a **spill history** and retrospective titled "Mission without a Map" by Joe Hunt.

Prince William Sound Regional Citizens' Advisory Council has updated a publication titled ***Then and Now*** highlighting the many changes in spill prevention and response operations since 1989. Also available from PWSRCAC is a 30-minute video titled ***Then and Now***. Also, PWSRCAC released an oral history book with excerpts of over 60 interviews with a wide variety of individuals involved in the oil spill and its aftermath. ***The Spill: Personal Stories from the Exxon Valdez Disaster*** was compiled by Sharon Bushell and Stan Jones. See www.pwsrcac.org for any of these materials.

ShoreZone is a coastal habitat mapping program that is a dramatic improvement from 20 years ago - www.CoastalAndOceans.com. It makes available aerial video and still imagery combined with a mapping system that includes 6,000 kilometers of Prince William Sound. The images are spatially-referenced and Alaska data can be downloaded at www.alaskafisheries.noaa.gov/maps . The system is designed to be used as a tool for science, education, management and environmental hazard planning.

Additional websites and links related to the EVOS are posted at the PWSSC education website,

---

DISCOVERY ROOM news .... *Continued from page 7*

Fifth graders are learning all about marine pollution, from the sources and effects of oil pollution, to the fate of plastic debris that washes into the ocean from land. Their monthly field trips are conducted in partnership with the Prince William Soundkeeper, bringing students to the harbor to monitor water quality and pollution. Fifth grade classes will also be involved in a marine debris clean-up project in April.

Sixth graders are learning about ocean technology, from the history of ocean exploration and the physics of underwater design to different types of oil spill response equipment. To apply this knowledge, they are designing and building their own oil spill response Remotely Operated Vehicles (ROVs). Working in teams, students are building their creative frame designs out of PVC pipe and adding tool attachments, motors, flotation, and ballast.

In February the students practiced operating their ROVs through a series of timed tasks in the swimming pool. In March, the students will have the opportunity to amend their designs with the final goal being to use the ROVs to collect or contain oil. The project will culminate in a challenge to clean up a mock oil spill in Cordova's harbor in an event open to the public on April 24.

Students in all Discovery Room projects are not only learning about important concepts and broad applications of science. By seeing and doing science in their local environment, they are learning how to apply their knowledge so they can become part of the solution for protecting Cordova's natural resources.

Questions? Contact Alice at 424-5800 x237

Become a valued member of PWSSC!

Name _____

Address _____

_____

City _____ State _____ Zip _____

E-mail _____

NOTE our NEW membership dues!

All members receive 10% discount on sale items.

- ❑ $10-Student ... decal, newsletter subscription,
- ❑ $25-Individual... basics + Eyak poster by artist Paula Payne!
- ❑ $50-Family... basics + poster and t-shirt or mug
- ❑ $100-Chinook... basics + poster & choice of CRN apron, t-shirt or mug
- ❑ $250-Eagle... basics + poster, t-shirt, and 1 other retail item
- ❑ $500-Grizzly... basics + poster, t-shirt, and 2 other retail items
- ❑ $1,000- Orca... basics + poster, t-shirt, and 3 other retail items

If you'd like your retail items shipped, please mark as such and specify what size/color you prefer for t-shirts.

Thank you for your support!

The Prince William Sound Science Center is a 501(c)3 corporation. Your contribution is tax deductible.

The Board & Staff of the
Prince William Sound Science Center
invite you to join

Honorary Host Senator Lisa Murkowski

at the

10th Annual Copper River Nouveau!

June 12-13, 2009

Dinner tickets are on sale now - $125 per person. Early reservations recommended, as seats fill up fast!

A guest celebrity chef will be serving a 5-course gourmet dinner! Fine wines, lively entertainment, silent and live auctions, and decadent desserts will complete your dining experience!

Corporate and Individual Sponsorships Welcomed!

Volunteers, arts or fresh fish donors are asked to contact Signe Fritsch
sfritsch@pwssc.org or 424-5800 ext 232

Event details at www.pwssc.org/nouveau/nouveau.html

All proceeds benefit the research and education programs at the PWSSC

COPPER RIVER NOUVEAU
CORDOVA, ALASKA
WILD COPPER RIVER SALMON
CELEBRATING SCIENCE
PRINCE WILLIAM SOUND SCIENCE CENTER

AND CONNECTING OUR COMMUNITIES THROUGH
INFORMING, ENRICHING
LOCAL INVESTMENTS IN
PEOPLE, SCIENCE AND EDUCATION

PRINCE WILLIAM SOUND SCIENCE CENTER
CORDOVA, ALASKA

1989 - 2009
20 Years of Community Based Science

P.O. Box 705—Cordova, AK 99574

Phone: 907-424-5800 Email: pwssc@pwssc.org

VISIT OUR WEB SITE:
WWW.PWSSC.ORG

STD
Non-Profit
U.S. Postage Paid
Cordova, AK
Permit No. 21