Hatfield Marine Science Center Newsletter

June 2001: Pam Rogers, Editor

June 2001 HMSC Newsletter

Table of Contents

Ocean Scientists to Study Unexplored Marine Habitat

Bob Embley and Waldo Wakefield are pleased to announce that their Ocean Exploration project and cruise to Astoria Canyon, entitled "Ocean Exploration

off the West Coast of the U.S. --A Voyage of Discovery to Unexplored Marine Habitats in the Northeast Pacific - Completing the Lewis and Clark Legacy," has been funded by NOAA's Ocean Exploration Office (for some background on OE please see:http://oceanpanel.nos.noaa.gov/welcome.html.

In late June, a team led by OAA scientists Waldo Wakefield and Ric Brodeur, of the NMFS Northwest Fisheries Science Center, and Bob Embley, of the Pacific Marine Environmental Laboratory (VENTS), will begin to map the Astoria Canyon, located ten miles west of the mouth of the Columbia River, and document its physical and biological systems. Scientists believe that this remote, virtually unexplored, submarine ecosystem provides a rich biological haven for vast numbers of fish and unusual invertebrates, like gorgonian corals. Its landmasses of precipitous volcanic forms, tectonic activity, and millions of years of undisturbed, accumulated organic material may also make the area a source of methane seeps.

During 2001, they will devote all of their Exploration efforts to Astoria Canyon. The Cobb/Brown Bear seamount area will be reserved for exploration efforts in 2002 (funding for 2002 is yet to be determined). Their Exploration program will take advantage of the already planned ship time and logistics for *R/V Ronald H. Brown* and ROPOS ROV by complementing an interdisciplinary project on Heceta Bank, Oregon. Heceta Bank is the site of a funded on-going NOAA NURP program (West Coast and Polar Regions Undersea Research Center project for Wakefield, Embley, Tissot, and Yoklavich) to conduct an interdisciplinary and comprehensive study of the habitats of the Bank, using state-of-the-art survey strategies, instrumentation, and data analysis. This year's effort on Heceta Bank is year two of a two-year project.

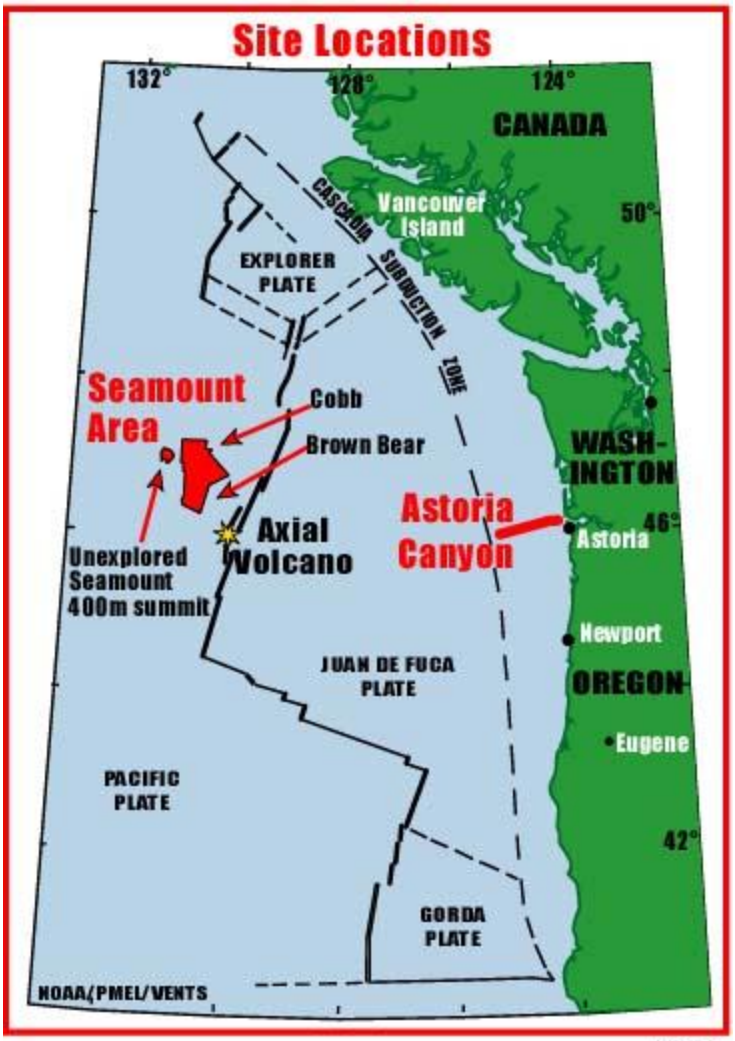


Fig. 1

The following is a brief summary of some of our objectives, and of the logistics involved in the 2001 Exploration

GEOPHYSICAL MAPPING STUDY (MAY 2001, VESSEL TBA)

They will conduct a detailed sidescan survey of the upper portion of the canyon from the shelf break down to about 2,000 m depth. Currently, a deep-water multibeam bathymetric survey exists for Astoria Canyon (Chris Goldfinger, Oregon State University), providing an excellent overview of the canyon morphology, and a baseline for more detailed studies. However, deep-towed sidescan will provide the high-resolution imagery necessary to identify rock outcrops, possible methane seeps, unusual features such as submarine sediment slides, and other potential targets. This program will utilize a chartered deep-towed sidescan / bathymetric mapping system and vessel. A cruise of approximately 12 days in May will be sufficient to cover the areas of interest

(7 days on station plus transit and mob days).

ROPOS ROV EXPLORATION OF ASTORIA CANYON (JUNE 26 - JULY 3, ABOARD *RONALD BROWN*)

The ROPOS ROV portion of the Astoria Canyon cruise will be supported by the NOAA research vessel *Ronald H. Brown*, staged from Victoria, BC, Canada in late June with the cruise ending in Astoria, Oregon. Astoria's historical connection with the Lewis and Clark expedition makes it an ideal site for ending this leg in the *Ronald H. Brown's* cruise track. Astoria Canyon is located one half day's steam from Victoria, so that dives can begin the evening of the day of departure, and continue until the last day of the cruise. The ROV dives will be 12 to 18 hours in length. Allowing for the rough terrain and sample collections (biological, chemical, and geological), they estimate that about 15 - 20 transects can be made of the canyon walls and floor. These explorations will cover approximately 40 km along the upper part of the canyon over a range of depths from 200 to 2,000 meters (650 - 6,560 feet). Portions of a subset of the total number of transects will be conducted following the protocols that were developed for habitat-based quantitative studies of fishes and invertebrates with ROPOS on Heceta Bank. This will permit a direct comparison between the Astoria and Heceta areas, and also contribute to the development of a growing database of habitat-specific abundance measurements for fishes and invertebrates along the NW coast.

WATER COLUMN STUDIES (JUNE 26 - JULY 3, ABOARD *RONALD BROWN*)

In order to monitor the oceanographic conditions during the time of the field program, they will conduct reconnaissance CTD casts, including optical and chemical sensors. Data from these casts will define the distribution of dissolved and particulate materials (nutrients, organic matter). To translate these distributions into transport through the canyon, they will deploy two moorings with sensors to monitor current flow, particulate matter concentrations, and nutrient concentrations. These measurements will be used to quantify the oceanographic conditions under which biologically important material is transported and concentrated within the canyon.

They will also conduct acoustic transects across the canyon using a towed Simrad EK500 echosounder (38 and 120 kHz) to search for aggregations of fish and zooplankton. The micronekton size fraction of the acoustics survey will be groundtruthed with an Isaacs-Kidd midwater trawl towed from the *Ronald H. Brown*. In addition, the Exploration project will take advantage of an ongoing study of the pelagic fishes in the ocean waters overlying the Canyon: a chartered

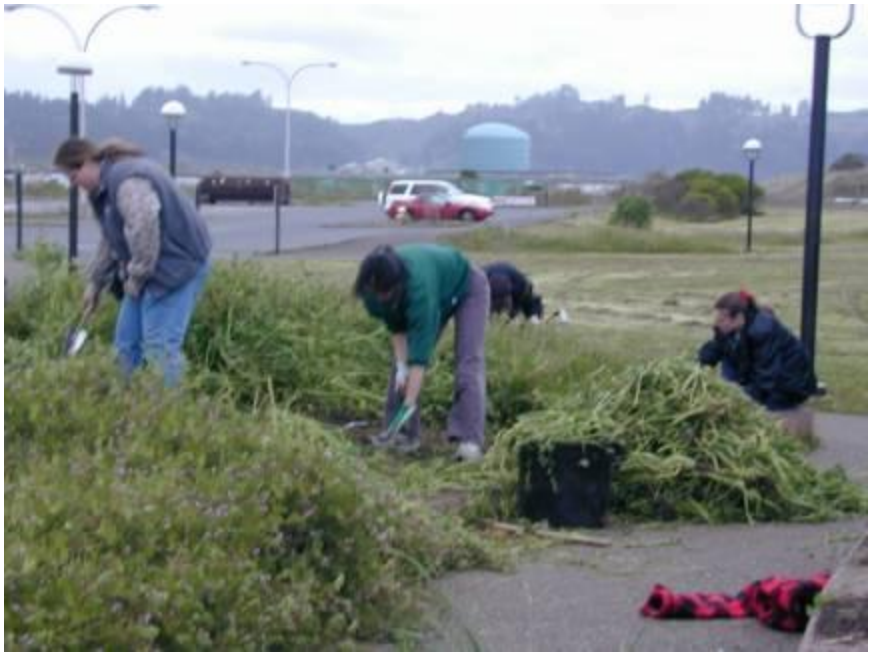
commercial fishing vessel, the *F/V Sea Eagle*, will conduct sampling with a midwater trawl to provide additional groundtruthing of the nekton size fraction.

EDUCATION AND OUTREACH

They consider the outreach component an essential and critical part of the Exploration expedition. Since 1998, the PMEL NeMO program has had a successful outreach/education program in collaboration with the education department of the Hatfield Marine Science Center and a World Wide Web site maintained by PMEL and Oregon State University. This existing outreach/educational infrastructure will be extended to include the Astoria Canyon Exploration. They envision several public museums and aquaria as partners in the outreach effort, potentially the Oregon Museum of Science and Technology, Oregon Coast Aquarium, Hatfield Marine Science Center Visitor Center, and Los Angeles County Museum. In addition, there will be a berth for a teacher and a student.

There is an added value as far as outreach and education provided through the linkage between the proposed Exploration project, and the funded and on-going project on Heceta Bank which immediately follows the Exploration of Astoria Canyon. Coordination between these two projects will, in the context of the Ocean Exploration Program, provide an opportunity to compare and contrast the biological, geological, chemical and physical oceanographic characteristics of these two major submarine provinces in the Pacific Northwest. Last year, there was an effort to involve in the Heceta Bank Project a number of constituents, including educators, commercial fishermen, and representatives from conservation organizations.

With its obvious tie to the earlier exploration by Meriwether Lewis and William Clark and the Corps of Discovery, at the westernmost extent of their historic crossing of the United States, this exploration offers an exciting public and educational outreach opportunity.



Master Gardeners clearing out the "nautilus beds" in front of the Visitor Center

Master Gardeners Improve Landscaping

The garden beds at the public entrance to the Visitor Center will be getting a new look soon thanks to a cooperative effort with volunteers from the 2001 OSU Extension Service Master Gardeners class. About 12 Master Gardeners are working to clean up the beds, amend the soil, fix the irrigation system and plant new material in 3 of the 4 beds.

Several volunteers from the group helped rid the beds of invasive species (i.e., weeds) at the Earth Day work party in April. John Lesiak, a Master Gardener who works for Spiro Landscaping, repaired the irrigation system. Three groups of Master Gardeners have chosen a specific bed to design and plant.

A collecting trip to Stonefield Beach near Yachats in early June will result in driftwood and rocks to "hardscape" one bed. The whale jawbones that are currently lying out front will be moved into one bed. Donated plant material will be collected and planted. If you have any native plants or cuttings you would like to contribute, please call Jon Luke at 867-0357.

The garden beds have received little attention since the remodel of the Visitor Center in 1995 due to lack of available personnel. This renovation, which will focus on low maintenance landscaping, will greatly improve the appearance of the Visitor Center entrance and provide a more pleasant welcome to visitors.

2001 Scholarship and Award Winners Announced

Recipients of the numerous scholarships and research awards at the HMSC have been announced for 2001. All of last year's recipients will join with this year's recipients at the annual Mamie Markham Symposium on Monday, June 4, in the Guin Library Seminar Room.

Curtis and Isabella Holt Marine Education Award - Panida Pongviratchai (Jae Park)

Anja Robinson Fellowship - Ford Evans (Chris Langdon)

Walter Jones Fisheries Development Award - Somjintana Tunkawachara

(Jae Park)

William Wick Marine Fisheries Award - Somjintana Tunkawachara (Jae Park), Kurt Karageorge (Barbara Shields), and Ted Hart (Selina Heppell)

Mamie Markham Research Awards

Umur Onal (Chris Langdon) - Artificial microparticulate diets

Jacek Jaczynski (Jae Park) - Models for lipid oxidation

Jaime Gomez-Gutiérrez (Bill Peterson) - Euphausiid eggs

Blaine Griffen (Chris Langdon) - Feeding rates of mud shrimp

Malinda Sutor (Tim Cowles) - Vertical distributions of phytoplankton

Myeong Rak Choi (Jae Park) - High quality fish gels

Sena Wheeler (Michael Morrissey) - Omega-3 fatty acid profile of albacore

Matt Bracken (Bruce Menge) - Variation in mussel nitrogen excretion

Todd Miller (Ric Brodeur) - Stable isotope research in upwelling

Wiancko Family Internship/Outreach Award - Vicki Osis

Book Reviews - Canadiana

This month, Library staff members agreed to read Canadian novels. Although a great novel is in some sense its own country, we hoped that contemporary fiction might give us some insight into our neighbors to the north. One resource we used in exploring current Canadian literature is the Giller Prize and its shortlists. The Giller Prize is the Canadian

equivalent of England's Booker Prize or the U.S. Pulitzer Prize or National Book Award. The website is a convenient look at the best in recent (since 1994) Canadian novels and short stories: http://www.thegillerprize.org/welcome.html .

Janet is reading:

Moving Water by Joan Skogan (1998)

Rose Backman is in mid-life and some would say at slack tide. But, whether the tide is going in or out is unknown and perhaps doesn't matter. This story describes Rose's wanderings on the waters of the world, her ambiguous marriage to a Pacific Coast fisherman, and her search for a place to be. Ms Skogan's sense of landscape and her feel for life on the water are genuine, and at times border on the poetic. The story left me with feelings of sorrow and wistfulness. It's a wonderful addition to the growing literature about life on the Northwest Coast of this continent.

Susan is reading:

What's Bred in the Bone by Robertson Davies (1985)

Francis Cornish, noted critic, collector and patron of the arts, has died. His banker nephew commissions his biography, but there are problems. For one thing, large sums of money keep popping up, some from Swiss bank accounts. Uncle Francis was financially comfortable, but this much money raises suspicions. Where did he get it? And what is the significance of his drawings "in the style of the Old Masters?" Could he have been a forger? Davies is a superb writer, although he has an eccentric streak worthy of Dickens that won't appeal to every reader. He regards his

country with a warm heart and an ironic eye. Robertson Davies wasn't just a great Canadian writer: he was a continental treasure. This book is one of his best. Read it.

Judy is reading:

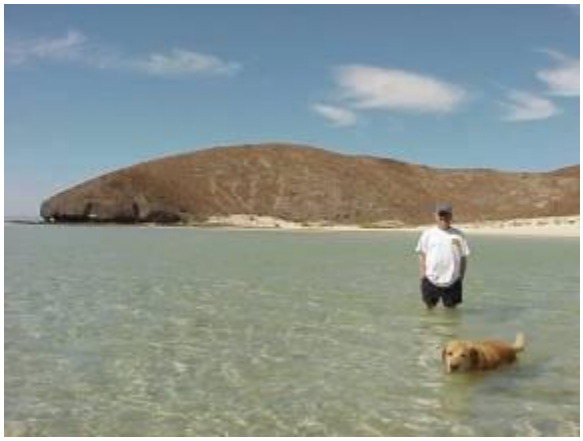
A Student of Weather by Elizabeth Hay (2000)

This book made the short-list for the 2000 Giller Prize. The author's rich style pulled me into the story, and the dark, strange, not so moral behavior of the main character, Norma Joyce, kept me reading. She is described as a girl who is "out of season," one who had hairy armpits at the age of eight. She is referred to as "foliage in the wrong place," and her story grows very dark before it finds the light. It's a tale of two sisters from Saskatchewan who "fall down the same well" when they fall in love with the same man.

Regional differences between the Canadian provinces are highlighted throughout the novel; natives of Saskatchewan are full of pride and "prairie reserve," and we're told they have "a talent for isolation." The rich and worldly province of Ontario contrasts sharply with poor Saskatchewan, yet the beauty of the prairie landscape is powerfully portrayed. The weather on the prairie is almost a character; perhaps it's a metaphor for life itself.

The book reflects postmodern trends in literature: its plot is not linear (the author uses flashbacks in the usual way, but is unique in her use of flash-forwards), its heroine is not noble (antihero), and the story

reflects elements of magic realism by incorporating dreams, localisms, and regional folklore. For example, if one lives in Saskatchewan one must "Never predict good weather." Perhaps this quip provides a window into the world view of Canada's prairie people. Maybe the weather is as unpredictable as the behavior of its people.



Michael and his dog Bill at Balandra Bay near La Paz

Michael Morrissey Reports on Sabbatical Work in Mexico

Michael Morrissey has spent February to June on a short sabbatical in La Paz, Mexico. He is doing his stay at CIBNOR which in Spanish translates to The Center for Biological Research in Northwest Mexico. It is one of the 27 research centers in Mexico funded by their National Science Foundation and Education Program and its focus is on aquaculture, marine biotechnology, fisheries and desert sciences. He reports that the science programs are first-rate and that the aquaculture program is outstanding, especially in bivalves and shrimp. He has had a chance to visit several experimental farms on the Pacific as well as the Gulf of California and reports that oysters grow to market size in half the time. "However, the real exciting research area are with the endogenous species such as Mano de Lion and Callo de Hacha which are spectacular bivalves with great eating qualities," he says. Michael reports that there already is U.S. investment in the area and that the next five years should bring some solid growth and production.

He has been giving guest lectures at CIBNOR, the University of Baja California Sur and the Food and Human Development Research Institute in Hermosillo, Mexico. He has also participated in some grant writing at the institute for different aquaculture projects. He feels that there are a lot of similarities between CIBNOR and COMES and that his visit will hopefully bring about some cooperative research in the future. Michael's family joined him in La Paz and the children entered the La Paz school system which was an education in itself. He reports that Sara (age 16) and Tomas (14) have more than held their own taking all their classes in Spanish and now don't hesitate to correct their Dad's Spanish every chance they get.

@Your Library

New Exhibit in the Library

Remember those days when you carefully constructed the erupting volcano for Science Fair? Or maybe, your older sister monitored teeth rot in glasses of Coca Cola for her project? Once again, the Library has on display some recent Science Fair entries. This year, the posters are from the Isaac

Newton Magnet School located in the Newport Middle School. This school within a school provides 6th - 8th grade students with a strong science curriculum that is enhanced with the fine arts. This winter, the students spent time at the HMSC studying with the instructors and talking with scientists. These projects reflect some of the work completed as part of the science camp experience.

Changes to the Library's Web Page

This is a heads-up for those of you who use our web request form - http://osulibrary.orst.edu/guin/reqitem.htm. We will be changing this page as the form is no longer needed. Instead, we suggest that you use the request button within Oasis records to get material from the Valley Library. We will be adding a link to another web form for requesting material that the OSU Libraries do not own. The change should happen in the middle of June. Let us know if you have any questions.

Personnel Notes

Kate Stafford defended her dissertation, *Blue whale vocalizations in the North Pacific: geographic, seasonal and diel variation*, on May 2. Bruce Mate and Chris Fox were her co-advisers in Interdisciplinary Oceanography. She got her M.S. in wildlife science in January, 1995, took almost 3 years off and worked and then started her Ph.D. in the fall in 1997. She has a National Research Council post-doc starting in the fall at the National Marine Mammal Lab in Seattle.