

# August 1996

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## Sea Grant Program Leader Sets Up Shop at HMSC

Jay Rasmussen, the new Sea Grant Program Leader, has settled into his new office in the west wing of the main building and is in the process of familiarizing himself with his new responsibilities. Jay is no stranger to Newport, however, as he has been the director of the Oregon Coastal Zone Management Association (OCZMA) for 16 years. He is no stranger to Sea Grant either, having served on the Sea Grant Advisory Board for six years. He has enjoyed working with the marine agents and specialists and appreciates their major contributions to the residents of Oregon.

The job of the Program Leader, who works directly under Bob Malouf, Oregon Sea Grant Director, is to set the direction for the Extension Sea Grant programs. This is a time of great change for Extension Sea Grant, with many agents nearing retirement, lots of natural resource issues and changes in society itself. National Sea Grant sets the major themes and areas of emphasis, which are then filtered through Oregon's unique situation. The State of Oregon matches the federal Sea Grant funds and then the money is distributed through a rigorous grant process. Different coastal locations in Oregon also have different needs, different issues to face, different expectations of their marine agent and different areas of expertise for each agent. All of these different levels, needs and expectations need to be meshed harmoniously.

Jay earned his B.A. and M.A. in History at Utah State University and was a Ph.D. candidate at the University of Cincinnati when he was drafted into the Army. Later he taught at Upper Iowa College and then moved to Lincoln County in 1973. He taught in public schools here before joining OCZMA in 1978. His wife, Linda, is a media specialist for the Toledo elementary schools. His son Eric graduated from OSU in 1995 and his daughter Kristin is a junior at Toledo High. Jay enjoys raising tropical fish (see his office aquarium), gardening, and photography. He has also served on the Board of the Oregon Coast Aquarium for a number of years and is current Chairman.

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Unlike the movie of similar name, the bridges of Lincoln County are being studied because of the bats who "hang out" there at night. John Hayes and Mike Adam are working on a new study funded by the US Forest Service and the Bureau of Land Management (BLM) to look at the use of bridges as night roosts for bats. They are looking at which types of bridges are used by the bats and the types of habitat around the bridges. To save money on road closures in US Forest lands, the easiest way is to pull out the bridges; however, before that is done, we need to know the impact this will have on bats.

Bats forage at night and then stop to rest for a while in warm places close to their forage areas. Bridges absorb heat during the day and then radiate it slowly at night, making an ideal spot for a rest stop. All the bridges being studied are in the coastal forest, from Beaver down to Coos Bay and in the Siuslaw National Forest and the Eugene District of BLM.

John is looking for an easy way to assess bat populations and if that could be determined by counting the bats under bridges, it would simplify this assessment greatly. Before they can assume that, the bats must be counted at different hours of the night and different times of the year.

The study is broken into three methods. The first is just to sit under bridges all night and count bats at different hours. The second is to collect bat guano on plastic sheets placed under the bridges to determine how the

amount of guano relates to the number of bats. It might even be possible to count bats by using these "guano traps" instead of having to do surveillance. The last is to actually catch and identify the types of bats using the bridges. There are eleven species of bats on the coast, the largest weighing only about an ounce (30 grams), all of them insectivores.

There are several other studies also underway. Graduate student Dave Waldien is doing a radio telemetry study of long-eared bats in the Cascades. He glues a half-gram radio onto the back of these bats to find their day roosts and night time activity patterns. He is studying them in mixed landscapes, from old growth to commercial forests. What structures do the bats use, to what extent do the managed forests provide those structures, and what is the relationship between day roost sites and night time foraging areas?

Research assistant Dave Larson is comparing bat activity in riparian buffer strips, using a bat detector. A bat detector converts the bat's high frequency sounds into audible-to-our-ears frequencies and records it on tape. It is then possible to count the number of bats. Dave is comparing the activity in clear-cut areas, in the buffer strips and in uncut forests to determine the impact of clear-cut areas on the population.

*[Please see related article on John Hayes and his canopy crane project.]*

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Tournament organizer Glen Gioseffi (NMFS Enforcement) reported the results of the Tournament, held July 25 at the Olalla Valley Golf Course. Due to a lack of publicity, not lack of talent, only 14 individuals participated.

Longest drive - Keith Matteson (ODFW)

Shortest drive - Matt Fowler (NOAA)

Closest to the pin - Keith Matteson

Most lost balls - Mitch Vance (EPA)

Most hits for the money - Team of Georges Paradis (EPA), Mitch Vance, and Ron Greene (NOAA)

First place - tie between team of Bob Dziak (NOAA), Matt Fowler and Mark Schatzman and team of Ray Conser (NMFS-NW), Eric Schindler (ODFW), Keith Matteson and Phil Hannah (ODFW)

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### **John Hayes Uses New Tool in Bat Studies**

COPE researcher John Hayes has been accepted as one of the scientists who may use the new canopy crane. The Wind River Canopy Crane is a unique research facility designed to provide scientists with access to the entire three-dimensional space of forest canopies for a broad range of research. The second of its kind in the world (the first was in Panama), the crane provides a key means of enhancing our understanding of how forests work.

To date, research on the structure and function of whole forest ecosystems has been limited by the practical difficulties of accessing treetops as much as 300 feet above the forest floor. The crane, however, can repeatedly, safely and quickly carry scientists to almost any point in a 2.3 hectare arc of forest from ground level to 74 meters high.

The crane is located in the Thorton T. Munger Research Natural Area of the Gifford Pinchot National Forest in Skamania County, Washington approximately 65 miles northeast of Portland. At 1100 feet elevation, the site exemplifies the old-growth Douglas-fir and western hemlock forests which originally covered much of western Washington's Cascade range.

Many of the questions that will be asked are fundamental in nature. For example, knowing what species are where (and why) in the very rich and previously remote world of the canopy will allow us to develop efficient, effective management strategies. As important, the knowledge of canopy "architecture" and processes in natural forests will be used in designing managed forest standings which produce both wood and wildlife habitat.

John is doing two projects. In a methodological study, he is checking to see how accurately the bat detector picks up bats at different elevations. The detector is usually used on the ground and may not pick up high-flying bats. In a second study, he is looking at how structural variation in the stand affects bats. Does activity in an even canopy (such as in a managed forest) differ from activity in a forest with varied heights of trees? This is an exciting tool, enabling us to study the forest in three dimensions instead of only two.

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### **New Cooperative Disease Program Begins**

Through the auspices of the Cooperative Institute for Marine Resources Studies (CIMRS), researchers from NMFS Northwest and OSU will be studying natural and human factors in estuaries that influence disease prevalence in juvenile salmon. This multi-year project will involve Paul Reno, Bob Olson and graduate student Kyoung Chul Park of the OSU Fish Disease Lab and Mary Arkoosh, Anna Kagley and Ethan Clemons of the NMFS Environmental Conservation Division.

The project will compare disease rates of hatchery chinook at the time of release with hatchery-reared and wild smolts captured in estuaries on their way to the ocean. Researchers will collect smolts in a number of estuaries, including the Alsea, the Trask, the Coos and the Coquille, and in the hatcheries feeding into those estuaries. In this first year of the two-year project, the research design will be worked out, the specific estuaries and hatcheries chosen as sample sites and preliminary sampling carried out. In the second year more extensive collecting and immunological work will take place.

They will compare disease rates at different hatcheries (low disease ones and high disease ones) for bacterial kidney disease (BKD), *Nanophytes* (a parasite), *Ceratomyxa shasta* (an internal parasite), and infectious hematopoietic necrosis virus (IHN). Because hatchery fish are marked with a fin clip, collectors will be able to tell them from wild fish. They will check for dieoff and changed disease rates in the hatchery fish as they reach the estuaries.

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### **New Faces In Town**

**Kyoung Chul Park** is Paul Reno's newest graduate student at the HMSC. Kyoung is working on infectious pancreatic necrosis for his M.S. in Microbiology. Hailing from Seoul, South Korea, he completed his master's work at Inha University in Incheon in biological oceanography. He became very interested in fish disease, heard of OSU's outstanding reputation in that area and came over. He brings his wife, Kim Kyoung Sook, and two young daughters, ages 2 and 4. When asked if the U.S. was different from what he expected, he replied that Corvallis and Newport, at least, were much calmer and less violent than the media had led him to believe. Kyoung is looking for a tennis partner and someone to teach him golf. What he likes most about golf is being in that beautiful green and peaceful setting!

**Roland Well** comes to the HMSC from the opposite side of the world. Roland is a visiting post-doc from Germany, working with John Lupton. He received his Ph.D. from the University of Bremen in Physics, studying the same  $^3\text{He}$  traces in the Atlantic as Lupton studies in the Pacific. He is originally from Freiberg, a city in the Black Forest, and the coastal forest reminds him very much of home. He also brought along his wife, Helga, and two daughters, Hannah (2) and Mariam (4). He enjoys volleyball, road biking, camping and would like to do more kayaking. Roland will be here through June of 1997. (*cont'd*)

**Beth Babcock** is a fisheries doctoral student working as a summer intern for the NMFS Northwest group. She is working on a bioeconomic model of the trawl fishery and how landing limits influence target species for fishermen. Ellen Pikitch is Beth's major professor at University of Washington and she is working with Dan Erickson here as well. Originally from Michigan, Beth earned her B.S. in Biology at University of California, Berkeley, and worked for a while as a fishery observer. She enjoys road biking, backpacking, reading and contra dancing. The latter she learned at Friday Harbor, where it is the current rage. She will be here until September 1.

**Jay Gardner** is a senior at Catlin Gabel School in Portland, doing a summer internship with Bruce Mate. He is working on lab organization, video archiving and the marine mammal stranding network. He also hopes to analyze some gray whale field data, comparing their tracking records with sea surface temperature records. He went on the Baja whale trip with Bruce in 1994 and again in February 1996. Although he is not certain of what field he will pursue in college, he is thinking about marine biology. Jay likes to fly fish, hike, snorkel, play tennis and sketch. He will be with us through August.

**Matt Fowler** is taking Julia Getsiv's place as one of the NOAA computer technicians. He works with Chris Fox on the T-phase project, analyzing SOSUS and "Haruphone" data for seismic, volcanic and whale activity. This job appealed to him because it combined three of his interests: remote sensing, oceanography and computers. Matt comes to us from Humboldt State University in northern California where he received his B.S. in oceanography and computer information systems. Although he went to school in northern California, he is the fifth generation to be raised in Los Angeles. For fun, Matt enjoys mountain biking, rafting, Frisbee, softball and playing pool.

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## **Bill and Theta Hastie Move On**

Bill Hastie and his wife Theta have been an aquatic education team since their arrival at the HMSC. Since 1991 Bill has been the Program Leader for Aquatic Education at ODFW in Newport and Theta has been a marine educator working for Vicki Osis. This summer Theta is in charge of the aquatic day camps offered by the HMSC.

Bill is moving to Olympia, Washington, where he will be the Upland Water Quality Education Specialist for the University of Washington. He is part of a team of six water quality specialists scattered around Puget Sound, two of which are marine and four freshwater. Instead of working for a regulatory agency, Bill will be in watershed education. He begins the middle of August, after attending the National Association of Marine

Educators conference in New Hampshire. Theta plans to continue working in outdoor informal education, perhaps taking classes at Evergreen College.

When asked how he thinks his field has changed during his tenure here, Bill said that people are beginning to realize that education is cheaper than remediation. More state and federal agencies are doing educational work because they need to get the public on their side and aware of the impact of their actions on the environment. Bill also feels that the need for continuing education is becoming very obvious and that formal education from K-12 is not enough. The trend toward doing real scientific work by students is also a great step forward, and he used Vicki's Coastal Monitoring grant as an example of students and the public doing hands-on science.

Lastly, Bill wanted to add that he will miss this beautiful place, the worthwhile work, but most of all the wonderful people he has met at the HMSC and the coast. He laughingly emphasized that he is not leaving Oregon Territory, only the state of Oregon.

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## **Update on Kelp Survey**

Jim Golden of Oregon Department of Fish and Wildlife (ODFW) reports that the continuing kelp survey being conducted off Port Orford is showing some surprising results. The ODFW team is measuring kelp blade length, bulb diameter and sori (reproductive body) count. In addition, they are doing transects, videotaping the bottom and doing quadrats with the video at specific locations. GPS gives them a starting point and they use a compass and 80-meter tape to establish the quadrat.

There has been a very strong recruitment of barnacles, which may cause a problem for the kelp. Instead of being able to secure their holdfasts to the rock, they secure them to barnacles which can break off. When they do another survey in September, researchers will be able to tell if the young kelp, currently too small to be seen above the surface, have been able to take hold. The barnacle "boom" was first noticed along the southern Oregon coast in larval collectors set out by the Oregon Institute of Marine Biology (OIMB). Many of the barnacles seem to be loosely attached. There is also a lack of coral-like algae in its usual habitat and this may be related to the boom in barnacles.

Another factor in this ecosystem is the sea urchin. Sea urchins are herbivores and eat kelp. Gabriela Montano Moctezuma, a doctoral student of Hiram Li, is working with ODFW to study the sea urchins. She is using floy dart tags to mark individual urchins to monitor their movements and also doing quadrat sampling of numbers of urchins, shell diameter and gonad condition. She hopes to relate these variables to the degree of food availability (algal cover). She has found the gonads to be in very poor condition this year. Her overarching goal is to understand the differences between harvested and nonharvested areas to determine the efficacy of establishing refuges for urchins.

Also involved in this cooperative project is Bruce Miller, a University of Oregon graduate student of Dr. Rick Emlet out of OIMB. Bruce is working half-time for ODFW as a boat operator and diver and half-time for Dr. Emlet, studying the larval ecology of echinoderms, specifically red and purple sea urchin recruitment. They have developed a method of aging newly settled urchins to determine date of settlement, so they can see how nearshore conditions affect them.

The purpose of the kelp survey is to study the effect of different variables on the kelp production. These variables are: 1) bottom type, 2) exposed versus protected areas, 3) harvested versus nonharvested areas. They are using several methodologies and combining a number of different research projects into this effort. As well as the underwater transects and videotaping, they are also using aerial surveys to estimate biomass. Other participants in the cooperative project include Oregon Coast Aquarium divers and members of the commercial fishing industry.

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## **Stafford Reports on Blue Whale Cruise**

Kate Stafford of NOAA VENTS served as chief biologist on the July Scripps cruise off the Santa Barbara Channel Islands. She went with John Hildebrand, who was recently at the HMSC on a sabbatical with NOAA. The purpose of the cruise was to study the impacts of loud manmade sounds of blue whales. They put up an array of sonabuys (disposable hydrophones used to track submarines) and recorded blue whale calls. Unlike a regular whale tracking expedition, the ship had to sit still and quiet in the water and let the whales move around them. The researchers did visual observations and correlated behavior to the calls. There were a number of different behaviors and there seemed to be a diurnal pattern.

Not very much is known about blue whales, their calls or their habits. We don't know where they mate or calve or even where they feed. It seems that different groups of blue whales have different dialects. For instance, the calls of blue whales found around Hawaii are different from calls of blue whales found around the West Coast. Blue whale calls are too low for the human ear to hear and must be speeded up on tape ten times to be audible. It is difficult to do visual identification of the individual blue whales, as they don't do the fluking activity of gray whales, nor come out of the water as much as humpbacks. It is possible to distinguish them by spots located in front of their small dorsal fin, but those are hard to see from any distance.

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## **What's Going On by the Bunkhouse?**

The first fruits of the drive to increase housing at the HMSC are almost ripe, with the installation of two three-bedroom, two-bath manufactured homes behind the bunkhouse. This new housing has been provided by money raised by the International Living Center campaign and by a loan from Student Housing.

The two units are designated for family housing of visiting scientists, instructors and students, as well as for individuals needing special assistance. The rental cost has not yet been determined and housing coordinator Maureen Collson is in the process of furnishing the units.

The units should be available for dedication and occupancy sometime in September. The siting of the units was chosen so as not to interfere with the overall International Living Center design and to blend inconspicuously into the rolling dunes and coastal landscaping. The temporary side entrance into the work area will be closed up and replanted when installation is complete.

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## **Doug Bateman Wins Prize**

Doug Bateman, fisheries technician for COPE, received the award for Best Presentation at the recent American Fisheries Society meeting. He was reporting on his study on reticulate sculpin nest densities and variables associated with it in pools and riffles. The reticulate sculpin is as abundant as salmonids in coastal forest streams, perhaps with even more biomass than the salmonids. They have the same water quality requirements and could serve as an indicator species for troubles that could affect salmonids. They have the advantage of being only a freshwater species, thus eliminating all the ocean-related variables affecting the salmonids. Not much is known about the sculpin and Doug's work is remedying the situation. Congratulations!

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## **Library Notice**

It's binding time again! If you cannot find a 94-95 journal on the shelves, it is most likely being bound. Please tell us what you need and we will request it for you at no cost. Thanks for your patience!

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### **Personnel Notes**

Congratulations to **Don Solem** and **Margaret Fleming** on their recent wedding! They met while working for LB&B in the EPA building.

**Nora Demers** has successfully defended her dissertation on the effects of acute stress on the innate defenses of salmonids. Her major professor was Chris Bayne in Zoology. She has financed her education by doing research work with Paul Reno and by serving as a teaching assistant for human anatomy, general biology and aquaculture. Nora enjoys teaching as well as research and is searching for a tenure track position in higher education, preferably along the West Coast. In the meantime, she and her husband Roy enjoy beachcombing, biking, reading and discovering free time!

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