

Heceta Head Coastal Conference

“Oregon’s Ocean: Linking the Science to Policy”

Florence Events Center - October 28, 2006

SUMMARY OF PRESENTATIONS

Master of Ceremonies: Dr. George H. Keller, Vice-Provost Emeritus, Oregon State University

Panel I: “Wave Energy Power: Why Oregon Looks So Good”

Dr. Annette von Jouanne, Professor, Electrical Engineering and Computer Science, OSU

“The Technology”

Dr. von Jouanne introduced “The Promise of Wave Power” at this Conference a year ago, extolling the huge potential presented by the last great untapped energy resource of the world. “If 0.2% of the ocean’s untapped energy could be harnessed, it could provide power sufficient for the entire world,” she said. After more than ten years of assessing the wave energy resource off the Oregon coast, researchers report some of the richest ocean wave extraction sites in the world. Further, the seasonal variation for wave power is a good match for the Northwest load demand.

Showing slides on how a magnet linear generator is built into a buoy and converts the motion of waves to electrical energy, von Jouanne said: “Inside the permanent magnet linear generator, we have a magnet shaft that has high density magnets that is stationary. That will be anchored to the seafloor. Surrounding that shaft we have a buoy, which has a coil wound on the inside. By Faraday’s Law, when a coil slices through a magnetic field, voltage is induced, so we’re directly converting the linear motion of the waves to electrical energy.”

Von Jouanne described the advantages for making Oregon the center of the nation’s wave energy research and development. One is the dependable source, since wave energy depends upon consistent winds such as found off our coast. Another is the advanced research facilities together with the direct-drive—without hydraulic fluid—technology found at OSU.

Justin Klure, Senior Policy Analyst, Oregon State Department of Energy

“The Regulatory Context”

Justin Klure is working closely with those developing the technology at OSU to make a successful transition from the lab to the ocean. Klure pointed out that this clean, renewable energy source has great potential because it provides a higher energy density than, say wind power. Further, it has the twofold advantages of availability and predictability. He said wave energy is about where wind power was 15 years ago.

Klure stated that there are many regulatory issues to be addressed and resolved, complicated by the fact that all the technological and installation problems are new, and involve many agencies. In working to get wave energy on line, his Department is keeping the following in mind:

- Create a nurturing environment where all interested parties participate;
- With the faculty and labs at Oregon State, and the Hatfield Marine Science Center at hand establish Oregon as a world class research center;
- Establish renewable energy goals which will diversity Oregon’s energy portfolio;
- Through this effort, grow and diversify the local economy.

Terry Thompson, Fisherman and Lincoln County Commissioner

“Potential Environmental and Ocean User Impacts”

Terry Thompson speaks from his experience as a fisherman, as a former State representative, as an elected official, and as a member of OPAC. He believes that establishing a wave energy park is good—beneficial. However, his message is to see that the fishing industry has a “place at the table,” involved every step of the way.

Thompson stated that getting the involvement of fishermen, and reaching a consensus among them, is difficult due to the nature of the industry. At Newport, there are some 300 vessels with each skipper having independent decisions about when and how to fish, and where to go, ranging throughout the Pacific Ocean.

The fishing interest is to keep what is fishable...to not lose a fishing industry while adding a new industry. Therefore, Thompson contends, sites must be found with minimal impact on fishing. And this leads to more and better mapping of the ocean floor—a task for which the fisherman can provide valuable assistance. Therefore, the goal, he says, is to advance the potential of a wave energy park while utilizing all available information and input.

Panel II: “A National Marine Sanctuary for the Oregon Coast?”

William J. Douros, Director, West Coast Region, National Marine Sanctuary Program, NOAA

“What is a National Marine Sanctuary “

William Douros began his presentation with an overview of the federal legislation for establishing marine sanctuaries, as administered by the National Oceanic and Atmospheric Administration. Of the 14 sanctuaries around the country, five are in the West Coast Region.

Douros defined sanctuaries as: “Areas of the marine environment which have special conservation, recreational, ecological, historical, cultural, archaeological, or esthetic qualities.” In managing such areas, consideration is given to the protection of multiple marine habitats, regulations that target broad threats (e.g., discharge), and preservation of compatible human uses and ocean services.

Douros went on to say that the regulated activities include: discharging into sanctuary waters; alteration of the sea bed; disturbing marine mammals, sea turtles, and birds; and removing historical resources such as oil and gas production. And, of most interest to the fishing industry, none of the West Coast sites have fishing regulations.

Sanctuaries are managed with partnerships among multiple agencies at the local, state, and federal level—as well as with stakeholders---resulting in Sanctuary Advisory Councils.

In designating a sanctuary, Douros explained that states maintain authority in state waters (three miles off shore), with states directly involved in the designating process. Since Oregon has a great interest in wave energy, Douros declared that such installations are not incompatible with a sanctuary.

Dr. Patty Burke, Manager, Marine Resources Program, Oregon Department of Fish & Wildlife

Appearing on behalf of **Mike Carrier**, Governor Kulongoski’s Natural Resources Policy Director

“The Governor’s Proposal”

Dr. Burke, substituting for Mike Carrier who was called out of state and could not attend, presented the Governor’s goal for Oregon’s ocean, namely: To secure the long-term health and stewardship of Oregon’s ocean ecosystems, resources, and ocean-related economy. The process will require new state-federal partnerships and must be consistent with the findings of the two national ocean commissions on the need for a regional, ecosystem-based approach.

The three West Coast Governors recently agreed to work together on a regional approach to ocean health. The three states anticipate collaboration on the planning, management and governance of ocean policy by a) sharing lessons learned; b) expanding scientific and educational efforts; c) coordinating management strategies; and d) engaging the federal government.

The Governors have already sent a joint message supporting the moratorium on offshore oil and gas development. Further, they call upon the President and Congress to provide sufficient funding to address non-point source

pollution. They also support a regional research plan, seeking assistance for projects such as ocean observations and sea floor and habitat mapping.

Here in the state, the Governor has asked the Ocean Policy Advisory Council (OPAC) to implement its 2002 recommendation to establish a limited system of marine reserves. Further, he has asked OPAC for advice on designating a National Marine Sanctuary off the Oregon coast. OPAC is expected to provide a “status report” to the Governor by the end of the year.

Scott McMullen, Chair, Ocean Policy Advisory Council, and Oregon Fisherman’s Cable Committee
“Feedback from OPAC’s Scoping Process”

Scott McMullen opened his remarks by reviewing the Governor’s request for OPAC to provide information concerning an Oregon Coast National Marine Sanctuary to and from coastal residents, local governments, coastal tribes, the fishing community, and other ocean users. Further, to advise appropriate areas for sanctuaries, if any.

In their study, McMullen said they have heard such things as sanctuaries will bring research money to Oregon, that oil and gas development will be stopped, and dredging and shipping issues must be studied. Most sanctuaries start small with modest staff, and as they mature, additional staff is hired. On the other hand, there is a federal moratorium on new sanctuaries due to funding limitations.

He said that conservation groups support the Governor’s principles of ocean stewardship as they believe in ecosystem-based management. For this reason, they are more interested in marine reserves than national marine sanctuaries.

Of most importance to McMullen is the potential loss of fishing with any new state or federal regulations. Already, there are restricted conservation areas which make fishing off-limits—areas that fluctuate according to circumstances and the time of year. Other areas are also closed to bottom trawling. Speaking on behalf of the Cable Committee, McMullen said that cable owners need predictability and manageability since sanctuaries create an expensive and unpredictable environment for them.

Luncheon Keynote Address

Laura Cantral, The Meridian Institute, Washington D.C.

“The Joint Ocean Commission Initiative: Progress and Prospects for a National Ocean Policy”

To capitalize on the momentum generated by the work of the Pew Oceans Commission and the U.S. Commission on Ocean Policy, in 2004, Commissioners formed the Joint Ocean Commission Initiative. The Joint Initiative is a collaborative, bipartisan effort to accelerate the pace of change that results in meaningful ocean policy reform.

As principal staff, Laura Cantral stated: “The health of our oceans is critically important –important because it is about life itself, important because it is about our spirit, and about our future. Problems are exacerbated by the fact that our system of ocean governance is broken. What we have is a dysfunctional, out-of-date, and inadequate system of ocean and coastal governance at the national level.”

In a “report card” issued by the Initiative, an A- was given to the initial response in 2004 by the President, Congress, and the Governors regarding the two Commission reports. Last year, the promising ocean governance efforts underway in a number of regions and states scored a B-. And a C+ was given the broad bipartisan support garnered for a Senate bill to reauthorize the Magnuson-Stevens Fishery Conservation & Management Act. All other subjects received a less than passing grade: the national ocean governance reform; research/science/education; international leadership; and new funding for ocean programs.

Cantral declared that there is hope. Important achievements are being made at the regional and state level, she said. The Joint Initiative also commends the efforts of the Administration to address ocean policy and believes there is a real opportunity to build bipartisan coalitions to address this crisis our oceans are facing. She cited the President’s recent designation of the Northwest Hawaiian Islands as a National Monument.

Earlier this year, the Joint Initiative received a request for input from a bipartisan group of ten Senators. On June 13, that report was delivered, *From Sea to Shining Sea*, outlining those top priorities, which can be summarized as follow:

- Reforming ocean governance at the national level.

- Support for regional approaches to ocean governance.
- Acceding to the U.N. Convention on the Law of the Sea.
- Reforming fisheries management.
- Enhancing capacity for science, research and education.
- Providing adequate funding for ocean science and management programs.

Cantral closed by saying there is a real opportunity to build bipartisan coalitions of leadership to address this crisis our oceans are facing. States like Oregon, its neighbors to the north and south are demonstrating that leadership.

Panel III: “Looking Ahead: Marine Reserves for the Oregon Coast?”

Dr. Mark Hixon, Professor, Department of Zoology, OSU

“Marine Reserves: Theory and Practice”

Dr. Hixon described marine reserves as areas of the ocean protected legally and permanently from all extractive activities (e.g., fishing) and potentially damaging activities (e.g., oil drilling).

“There are two major types of marine reserves: those designed to conserve biodiversity (the variety of sea life), and those designed to sustain fisheries. Natural science can assist in the design of both kinds of reserves, as well as develop and test predictions regarding the benefits of reserves. Predictions regarding habitat protection and ecological reference sites are self-evident,” Hixon stated. .

Hixon described tests made to predict results inside reserves for both biodiversity and fisheries reserves, which showed increased organism biomass (weight), density (abundance per unit area), and body size. For biodiversity reserves only, results showed increased species diversity (the variety of species).

Many peer-reviewed studies around the world have confirmed all these predictions, which for fisheries provide a kind of fish population insurance. Predictions outside reserves focus on increasing catch for fisheries via two mechanisms: seeding (abundant and large fish inside reserves spawning and dispersing larvae that replenish fished areas) and spillover (abundant fish inside reserves swimming to surrounding fished areas).

Hixon closed by saying that to date, there are relatively few data regarding seeding, but reasonable data confirming spillover. Therefore, the scientific basis for establishing reserves to conserve biodiversity or to provide population insurance for fisheries is compelling, whereas fishery benefits outside reserves are still largely theoretical.

John Ugoretz, Nearshore Ecosystem Coordinator, California Dept. of Fish and Game’s Marine Region

“California’s Recent Marine Reserve Planning Experience”

With political efforts at work to develop regional approaches to ocean policy, John Ugoretz provided a lesson from California’s experience in establishing Marine Protection Areas (MPA). These marine managed areas are designed to take care of living resources...with no-take in marine reserves, limited recreation in marine parks, and limited commercial and recreational uses in conservation areas.

One lesson learned from California’s experience is the extended time frame it takes for establishing MPAs. Ugoretz used as an example the effort started in 1998 for waters around the Channel Islands. It took a Marine Reserve Working Group five years to come up with a plan for twelve new MPA’s, involving extensive public involvement.

A new approach—the Marine Life Protection Act—was enacted in 1999 in an effort to get a broader base of support and a review of the existing MPAs. This process, known as the MLPA Initiative, is expected to result in a significant increase in the amount of MPA area.

This year the California Marine Life Protection Act has been funded with \$10 million which will establish 29 MPA's with a staff of 45 positions. The program is also supported by private foundation grants and in-kind contributions from state resource agencies.

Dr. James W. Good, Professor Emeritus, Sea Grant and Oceanic and Atmospheric Sciences, OSU

“OPAC’s Marine Reserve Planning Process”

In June 2005, Governor Kulongoski directed OPAC, Dr. Good explained, to implement the earlier (2002) recommendation that Oregon should “establish a limited system of marine reserves in order to test and evaluate their effectiveness in

meeting marine resource conservation objectives.”

Good went on to say that because of other priorities, particularly providing advice to the Governor on his National Marine Sanctuary proposal, OPAC only recently began work on marine reserves. In June 2006, a core Marine Reserve Working Group (MRWG) was established and more members at large will be added soon.

OPAC has also requested that its scientific and technical advisory committee (STAC) provide it with assistance in gathering and evaluating information for reserve planning. OPAC intends to use the 2002 recommendation as an initial guide in designing a planning process, but will also draw on “lessons learned” elsewhere in reserve planning.

Good said no specific areas were recommended for reserves in 2002, nor were recommendations made regarding use of marine reserves for fishery management. However, the recommendation did state that “before designating any specific marine reserves, there is a need to acquire additional information, and conduct additional study, analysis, and deliberation through an open, public process.”

Finally, OPAC recommends the use of reserves as ecological reference areas and to test the effectiveness of reserves to maintain and restore ecological integrity. The next task for the MRWG is to draft a planning process and develop a timeline and budget. However, Good noted, no funding has been identified to begin the marine reserve planning process.

Workshop: Discussion Groups

At tables of eight, with a Discussion Leader at each table, attendees had the opportunity to provide feedback on the following questions.

1. **Wave Energy:** How and on what scale should Oregon move forward with proposals for research and commercialization on ocean wave energy conversion?
2. **National Sanctuary:** How would you advise the Governor on his proposal for an Oregon Coast National Marine Sanctuary?
3. **Marine Reserves:** If Oregon were to establish Marine Reserves in state waters, what criteria would you suggest be used for their design and location?

The results are posted on the Conference Web site.

Panel IV: “Filling the Gaps: Scientific Research Priorities for Oregon’s Ocean”

Dr. Jack Barth, Professor, College of Oceanic and Atmospheric Sciences, OSU

“Physical Processes and Characteristics”

Jack Barth described his work in collecting and analyzing data of the physical processes upon the ocean’s ecology and biology. He pointed out that our coastline and ocean are spectacular—unique in the nation and world-wide—and there are seasonal cycles of upwelling and downwelling, with seasonal variability year-to-year, and decade-to-decade.

Barth’s research shows how winds drive ocean currents, transporting organisms into constantly changing environments. For example, chlorophyll patterns show how organisms adjust to seasonal change, and how temperature—warmer in the winter, and colder in the summer—causes upwelling with accompanying nutrient movement.

He cited two extreme years: whereas in 2005 there was a delayed upwelling, just the opposite occurred in 2006 in which twice as much upwelling, due to high winds, occurred early in the year.

Barth works with the development of ever more sophisticated methods of ocean observation. Largely performed by boat in the past, today’s technology provides improved data gained by using sophisticated unmanned devices. One recent example is an automatic underwater vehicle glider equipped with a GPS system capable of

communicating to shore by cell phone!

In conclusion, Barth said this information gathering device will track how wind drives the currents, how the currents move the nutrients, how the nutrients change the ecosystems, and how it all changes from year to year. Such information is made available for use by all parties working on ocean policy.

Dr. Selena S. Heppell, Assistant Professor, Department of Fisheries & Wildlife, OSU

“Marine Ecosystems”

Dr. Heppell’s presentation provided the parameters for a healthy ocean policy based on the research needs from a biological standpoint. Overall, there is much information available, she said, but it needs to be organized and brought together.

The overarching goal of all interested parties is for a healthy coastal resource: clean water, productive fisheries, recreational opportunities, and thriving coastal communities. To get there, Heppell outlined the problem with several questions and answers.

What do we need to know? --Identify and synthesize existing knowledge—we already know much, but it is from different perspectives.

What habitat is out there? --COAS has maps of the sea floor, and there are efforts underway for a more intensive mapping of the territorial sea floor; and utilization of the knowledge of fishermen.

What fish are where and when? --Variability occurs in response to changing conditions; how fish respond to structure, e.g., wave energy installations; acoustic tagging of fish is being used.

What are the most critical use areas and biological areas? --A need for research on fishing activity on the environment; on what makes fish and crab stocks resilient; and the importance of “old growth” fish.

Dr. Heppell concluded with a call for all parties to work together, identify common goals, share knowledge, and develop ways for collaborative research.

Dr. Susan Hanna, Professor of Marine Economics, Department of Fisheries & Wildlife, OSU

“The Human Dimension”

Dr. Hanna opened her remarks by observing that people depend on a wide range of Oregon’s ocean resources to produce commercial, recreational, and aesthetic value. People also affect the health of ocean resources through the management of their activities on the ocean and in the coastal zone.

These interactions, Hanna said, are the subject of social science. Throughout Oregon’s history people have depended on the ocean for food, transportation, and recreation. Now the context of Oregon’s coastal ocean is changing. Development pressure is rising in the coastal zone, commercial fisheries are contracting and recreational fisheries expanding, waterfronts are subject to new demands for space. Many interests compete for the use of ocean resources.

Hanna went on to say this conference discusses new ocean uses: wave energy, sanctuaries and reserves, and regional governance. All of these uses have in common the element of space, and these spatial elements identify important gaps in social science research. Social science research in the ocean has been mostly “backward looking,” focusing on impacts of actions taken. A key knowledge gap is in the spatial dimensions of human use.

Hanna concluded by saying there is a need for linking this gap to research needs in the nearshore and onshore, waterfronts, allocations, and management tools; that investment in these research areas will provide valuable information to decision makers in their strategic planning for Oregon’s ocean.

Conference Wrap-up

At the close of the day’s meeting, Dr. George H. Keller, master of ceremonies, gave a summation of the Conference. Here, somewhat abbreviated, are his thoughts;

“One word typifies from what I get from your comments, and that is “balance.” Don’t do anything to mess up all the other resources that we have.

“It is clear there is a very strong interest in wave energy. If we have a way to collect a new source of energy, we should do that. If this is it, let’s get on with it, but don’t damage the environment.

“Don’t mess up the fisheries. If you are going to set up a reserve, maybe it ought to be around one of these wave energy

parks—that sort of thing. But there are a lot of “ifs” and questions as to where you go with any of these programs. “I’m totally amazed, and I am so pleased, honestly, because of your concerns. We need to make that readily aware of our leaders in state, local government and on up the line. Because if you don’t live it, you don’t know it. As Terry said, ‘If you don’t go to sea, you don’t what swells are.’ It’s knowing what’s out there and what can happen because of our interactions in that environment.

“In earlier years, jetties were put up, before we really understood what we were doing, the problems that they caused. With wave energy, let’s start relatively small so we can see how in the environment the technology is really going to work before we plan a big park. We need to look up and down the coast to see what infrastructure is already in place before we start building something new.

“On the point of the governor’s proposal for sanctuaries, the point is, ‘Please, governor, don’t lock up the whole coast.’ Let’s look at special areas. Let’s look at reserves. Could we have a number of those, rather than outline and limit our whole coast and adjacent sea as well?

“The point, again, that was made by most of you was: ‘Let’s not try to do an entire Oregon margin. Let’s start in smaller pieces.’ “

Acknowledgements

The Conference is indebted to the fourteen speakers who took the time to travel to Florence and provide professional advice on these important issues. Further, we appreciate the work of James W. Good in arranging the program.

The organization and management of the Conference has been performed by the Board of Directors of Heceta Head Coastal Conference, Inc. The Board members are: Craig McMicken, Lea Patten, Terry Newell, and Ken Rystrom. They have been assisted by a committee of sixteen others.

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Conference Notes

Attendance 170 persons registered plus fourteen speakers and six guests, for a total attendance of 190. Of those registering, 103 were from Florence, 41 from coastal cities, 25 from the valley, and one out-of-state; half (85) attended last year’s Conference.

Feedback from Attendees About half (99) of those in attendance filled out questionnaires, showing:

- 83% rated the Conference good or excellent
- 87% approved the format of speaker panels, followed by questions from the audience
- 94% rated the cost (\$35) as reasonable or very reasonable
- 88% said they would likely attend the Conference next year.

(Note: The 3rd Annual Heceta Head Coastal Conference will be held October 27, 2007)

Heceta Head Coastal Conference, Inc.

The **Heceta Head Coastal Conference, Inc.** is a nonprofit corporation whose mission is to inform and educate the public of the need to ensure healthy, productive, and resilient marine ecosystems of the Pacific Ocean off the Oregon coast.

The Conference endeavors to bring together a diverse group of leaders, providing a balance of viewpoints, from the worlds of science, fishing, conservation, government, education, business, and philanthropy. The results of the Conference are widely distributed to promote an ocean policy that protects, maintains, and restores the health, integrity, resilience, and productivity of Oregon’s ocean.

For more information: <http://www.florencechamber.com/hhcc>

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