

News Clips for the Channel Islands National Marine Sanctuary Advisory Council¹ November through January, 2014

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1. California Panel Approves First Shellfish Ranch in Federal Waters

By Louis Sahagan
Los Angeles Times
January 11, 2014

The California Coastal Commission has approved development of the first shellfish ranch in federal waters, a 100-acre underwater plot for cultivating and harvesting about 2.6 million pounds of Mediterranean mussels a year. "It's quite an achievement and I'm pretty happy about it," Philip Cruver, president and director of Catalina Sea Ranch, said about the commission's unanimous vote Wednesday. "But I always knew it would happen because of the demand."

Catalina Sea Ranch's business strategy is in line with the National Oceanic and Atmospheric Administration's aim to create jobs, provide highly nutritional food and improve the marine environment by putting more shellfish back in U.S. waters. Cruver's goal is to reduce the nation's \$10-billion seafood deficit by cultivating and promoting a brand of shellfish that would appeal to the growing green market of environmentally conscious consumers seeking to eat locally produced seafood. He also hopes to satisfy China's growing market for frozen mussels. Ranching water-siphoning mussels, oysters and scallops would help clean seawater as they filter microscopic plankton from the ocean to feed themselves, Cruver said.

Cruver says shellfish cultivated in the open ocean would produce higher growth rates, better yields and heavier crop production than inshore farms. That is because upwelling waters at the ranch site about 9.5 miles offshore of Long Beach would provide a constant food supply with no tidal down time. In addition, the shellfish would mature in deep water and swift currents, avoiding infestation by parasites found in shallow bays and estuaries. Then, too, the Southern California Bight is free of hurricanes, which have hammered the shellfish industry in recent years in the Gulf of Mexico and along the Eastern Seaboard. Of particular concern to environmentalists and commission scientists were potential effects on fisheries and habitat resulting from marine debris, ship strikes and entanglement of whales, dolphins, porpoises, sea turtles and sea birds. However, commission scientists determined that that the project appeared flexible enough to adapt to contingencies.

¹ *Articles shared specifically mention the sanctuary and/or are related to issues of known interest to the sanctuary advisory council. Any external opinions expressed within these articles do not reflect the views of sanctuary staff or NOAA, and sharing these stories does not indicate staff endorsement of views contained therein.*

Catalina Sea Ranch plans to build 40 longlines -- each 689 feet long and 100 feet apart -- for seeding beyond the 3-nautical-mile boundary of California state waters. Coast Guard-approved buoys equipped with battery-powered lights will be used to suspend the longlines 30 feet beneath the surface, well out of the way of commercial and recreational boaters. The company's office and harvesting vessel is the 110-ton trawler Captain Jack, which is berthed at dock space leased at the Southern California Marine Institute in the Port of Los Angeles. The institute's seawater filtration system will be used for a shellfish nursery, already under construction.

Company scientists will regularly conduct state-required tests of site waters for purity and bacteria, Cruver said. Tissue analysis of shellfish for chemicals and toxic metals will also be conducted before any are sold for human consumption, he said. "Under ideal circumstances," Cruver said, "we would plant in March or April and expect a first harvest of about 200,000 pounds of mussels by the end of the year." In the meantime, the company is developing a selective breeding program in collaboration with scientists at the USC and Cal State Long Beach. It is also working with researchers at the UC Davis' Bodega Marine Laboratory on a project to cultivate California rock scallops as a high-value crop for offshore shellfish aquaculture.

<http://www.latimes.com/science/sciencenow/la-sci-sn-shellfish-ranch-approved-20140111,0,2891620.story#ixzz2qPV3Jy9x>

2. EPA Imposes New Rules for Fracking Off S. California Coast

By Alicia Chang and Jason Dearen
Associated Press

LOS ANGELES — Oil and gas companies that are fracking off the Southern California coast must report chemicals discharged into the ocean under a new rule released Thursday by federal environmental regulators. The U.S. Environmental Protection Agency published the requirement in the federal register, and will become effective March 1.

The move comes after a series of stories by The Associated Press last year revealed at least a dozen offshore frack jobs in the Santa Barbara Channel, and more than 200 in nearshore waters overseen by the state of California.

Hydraulic fracturing, which involves pumping huge amounts of sand, water and chemicals deep underground to release oil, was conducted with no separate environmental analysis of the fracking chemicals on the sea surroundings, and little or no oversight.

"This requirement was added in response to recent concerns regarding the potential effects of discharges of fluids used for offshore hydraulic fracturing operations," the EPA said in its notice.

The oil industry has insisted that fracking, which has been around for decades, does not harm the environment.

While attention has been focused on fracking on land close to communities, little is known about the practice in the ocean, which uses far less fracking fluids.

Well permits and emails obtained through the Freedom of Information Act show fracking has quietly occurred off Southern California since the late 1990s with mixed success.

After the AP stories were published, the California Coastal Commission launched an investigation. A group of state lawmakers also called on the federal government to look into the practice.

The largest offshore frack was completed in January 2010 by Venoco Inc., which targeted the Monterey Shale, home to one of the nation's largest deposits of shale oil.

"It did not produce the results we expected," Venoco spokeswoman Lisa Rivas said in an email Thursday.

Rivas said the company does not have plans to frack in the future.

The new EPA rule applies only to new drilling jobs on nearly two dozen grandfathered-in platforms in federal waters off the Santa Barbara coast, site of a 1969 oil platform blowout that spilled more than 3 million gallons of crude oil, ruined miles of beaches and killed thousands of birds and other wildlife.

That spill led to a prohibition on new offshore platforms in federal waters off California, but companies used fracking and other techniques in an attempt to stimulate new production from old existing wells.

Separately, state oil regulators have drafted rules requiring companies to test groundwater and alert landowners before fracking or other well stimulation. Companies would also have to disclose the chemicals used and acquire permits before a job. Those rules go into full effect in 2015.

The California Independent Petroleum Association and Independent Oil Producers' Agency did not respond to messages for comment. The Western States Petroleum Association said none of its members use hydraulic fracturing technology in offshore federal waters.

Environmentalists said the new federal rule was a step in the right direction, but they still want the government to ban the practice altogether.

"The EPA's rule will provide some information about the toxic fracking chemicals dumped into our ocean, but it relies on oil companies to be honest and transparent in their self-reporting," said Miyoko Sakashita, senior attorney at the Center for Biological Diversity.

<http://blogs.kqed.org/newsfix/2014/01/09/epa-imposes-new-fracking-rules-for-california-coast>

3. NOAA announces recipients of Sea to Shining Sea Excellence in Interpretation and Education Award

Santa Barbara Independent
November 12, 2013

Jennifer Stock, education and outreach coordinator at Cordell Bank National Marine Sanctuary, and the team that coordinated the 2013 Ocean for Life program at Channel Islands National Marine Sanctuary are recipients of NOAA's Office of National Marine Sanctuaries first annual Sea to Shining Sea Excellence in Interpretation and Education Award.

The award recognizes outstanding achievement in the fields of interpretation and environmental education by national marine sanctuary employees, contractors and volunteers. Nominees for the Sea to

Shining Sea award are judged for their creativity and success in enhancing the public's understanding of the National Marine Sanctuary System and the resources it protects.

"National marine sanctuaries are living classrooms where people can see, touch and learn about the nation's spectacular marine life and rich maritime history," said Daniel J. Basta, director. "To that end, we rely on our interpreters and educators to help the public understand the role of the ocean, coasts, and atmosphere in the global ecosystem and to instill an ocean ethic that will touch the hearts and minds of the public."

Stock received the individual award for her leadership and inspired vision in working with the Oakland Museum of California to design a major exhibit highlighting the importance of California's marine and coastal resources with particular emphasis on Cordell Bank National Marine Sanctuary.

The Ocean for Life team was recognized for its work organizing and hosting a two-week marine science and cultural exchange program at Channel Islands National Marine Sanctuary that draws inspiration from the tragic events of Sept. 11, 2001. The program brings together students of diverse backgrounds from North America and the Middle East to explore marine science and conservation, while fostering new cross-cultural relationships.

The Sea to Shining Sea Awards will be presented at the National Association for Interpretation (NAI) annual workshop in Reno, Nev., November 6-9, in conjunction with the U.S. Forest Service's Gifford Pinchot Award, the U.S. Fish & Wildlife Service's Sense of Wonder Award, the National Park Service's Freeman Tilden Award, the U.S. Army Corps of Engineers' Hiram M. Chittenden Award, and NAI's Master Front-Line Interpreter and Master Interpretive Manager awards.

NOAA's Office of National Marine Sanctuaries serves as trustee for a system of 14 marine protected areas, encompassing more than 170,000 square miles of America's ocean and Great Lakes waters. Through active research, management, and public engagement, national marine sanctuaries sustain healthy environments that are the foundation for thriving communities and stable economies.
<http://www.independent.com/news/2013/nov/13/noaa-announces-recipient-sea-shining-sea-excellen/>

4. Students Explore Sea Organisms

By Lauren Foreman
November 22, 2013

Students in Riccardo Magni's AP environmental science class at Pioneer Valley High School formed grids of twine inside square-shaped bases of PVC pipe last week. The students would later use the measuring tools called quadrats to collect and monitor organisms from the sea.

"In AP environmental science, one of the goals is to give the kids field experience," Magni said. "It can't get any better than this."

Jessie Altstatt, program coordinator with Channel Islands National Marine Sanctuaries, led the group of 24 students who worked yards away from the shoreline at Shell Beach. She said Pioneer Valley is one of about 12 Central Coast schools the marine sanctuary has partnered with in a LIMPETS Long-term Monitoring Program and Experiential Training for Students. The program, funded through a settlement from a 1997 oil spill, allows students to input and access scientific data throughout the state.

The mid-November field trip also allowed students the opportunity to document evidence of sea star wasting detected in intertidal monitoring this summer. Altstatt warned students to look for sea stars and document any evidence of wasting such as lesions or decay. They are one group of organisms in a list of

several that students searched for. A field guide included whelks, chitons, sunburst anemone and giant green sea anemone.

Magni said the research could have lasting effects on students who are exploring career fields.

“Any kind of fieldwork causes you to integrate what you learned in textbooks,” Magni said. “This is absolutely critical.”

Educators added that the research aligns with both Common Core State Standards that embed science into informational text in English language arts and a new set of science standards intended to promote crosscutting curriculum and hands-on activities in science known as Next Generation Science Standards.

“It absolutely aligns with Common Core,” Magni said.

Jenn Sportsman, a science teacher at Righetti who also accompanied students Thursday, Nov. 14, said the work aligned perfectly with Next Generation standards.

Next Generation

The State Board of Education approved the standards for grades kindergarten through fifth and ninth through 12th in September and adopted the new science model for middle grade learning progressions Nov. 6. Bama Medley, a teacher on special assignment in the Santa Maria- Bonita School District, was part of an 80-person team that helped review the science standards in 2011. She said this week that high schools will have an option between integrated or content-specific teaching approaches, but the new standards will mean better building on prior learning for all grade levels included.

The students who prepared tools for scientific research last Thursday did not talk about the shift in science standards or use terms like crosscutting, but they identified elements of their preferred learning styles that experts have touted as defining characterizations of the new standards. Tori Valdez, a junior who is considering a career in marine biology, said she is more of a hands-on learner.

“I think that’s when you really learn something,” she said.

Jessica Cruz, another junior, said the field trip will help unite content about pollution that they are currently learning with a unit about the ocean they had recently finished.

“It’s hands-on, so we get to see for ourselves,” she said. “It’s not like we’re reading a book about it.”

Next Generation Standards align content requirements with performance expectations that students will carry out in order to prove understanding. Galisky said that performance could be a feature of testing, but assessment changes will follow development of instructional materials in a slow rollout of the standards. He said he thinks once the standards are implemented, they will open up more opportunities for independent research and for applying science.

“This is going to be a new way of teaching for a lot of teachers throughout the state,” he said.

<http://www.timespressrecorder.com/articles/2013/11/26/news/news58.txt>

5. Marine Policy Students Take a (Hot) Seat at Mock Council Meeting

Bren School of Environmental Science & Management
November 15, 2013

(Ventura, Calif.) — In a novel class project, more than 25 Bren School master’s students in an Ocean and Coastal Policy & Management course got to experience what it’s like to be involved in a real-world policy making process. The students tested knowledge and skills they had acquired in the classroom in a

mock meeting, during which they assumed the roles of members of the Channel Islands National Marine Sanctuary (CINMS) Advisory Council (SAC).



Channel Islands National Marine Sanctuary Resource Protection Coordinator and class instructor Sean Hastings welcomes the students and the audience to get the mock meeting started.

The meeting, arranged by CINMS Resource Protection Coordinator Sean Hastings, who is teaching the policy course at Bren, took place on Nov. 15 before the actual SAC meeting, at the Channel Islands National Park's visitor center in Ventura. Hastings and several SAC council members were in the audience as the students responded to a real and timely proposal addressing wind-energy development in the Santa Barbara Channel, and made comments and asked questions after the students presented.

The students assumed the seat of actual SAC members and had to represent the member's perspectives on the proposal under consideration, which was presented by second-year MESM students Lucas Feinberg and Zach Jylkka, members of a Bren Master's Group Project that addresses wind energy in the channel. SAC members represent a range of stakeholders, from commercial fishermen and conservation groups to the Department of Defense, the local business community, the local tourism organization, the Chumash Indians, and more than a dozen others.

"I couldn't be more impressed with the students and their level of composure and preparedness and their ability to deliver and stay on message in a public setting, which was the main intention," Hastings said after the meeting.

"I've been emphasizing to the students in the course that if they pursue careers in ocean and coastal management, a big part of their work will be interacting with constituents and communities in policy forums," he added. "This exercise tested their ability to represent a variety of interests professionally and speak in public confidently and clearly, and helped them understand how these policy forums work. It was a great professional development opportunity."

To prepare for the interactive learning experience, students interviewed SAC members to understand their positions and those of the groups they represent. To the extent possible, Hastings and Bren PhD researcher and course teaching assistant, Lindsey Peavey, tried to have students represent council members whose views were opposite from their own.

The students clearly did their homework,” said sanctuary superintendent Chris Mobley.

“The best thing to me is that it was kind of a dress rehearsal for careers they might have one day, jobs they might actually do. This is a chance to try it out before it’s real, and if it does become real for them, they’ll have increased their chance of being successful.”

“They were given a short time to learn the agency or special-interest point of view they were representing,” said Channel Islands National Park Superintendent Russell Galipeau. “They were tested on how well did their homework, how much passion they bring, and how well can they think on their feet.”

“We are delighted to see graduate students engaging in marine policy discussions and learning to communicate stakeholder views”, said Mike Murray, Deputy Superintendent for Programs at Channel Islands National Marine Sanctuary prior to the event. “Our advisory council members work hard to help the sanctuary remain a healthy, valuable marine ecosystem. Their voices carry significant influence on a variety of important issues, and so it is great to work with the Bren School to help students learn about this community-based approach to marine conservation.”

Although the students were occupying the proverbial “hot seat,” it was a fairly cool day for them, not because the meeting wasn’t real, but because the proposal was just being brought to the attention of the SAC, and so specific action wasn’t under consideration.

“When a project is more in the conceptual stage and there are no real lines on a map, stakeholders tend to be less heated and speak in generalities about their concerns because they don’t have something they can really sink their teeth into,” said Mobley. “We had a previous council meeting on exactly this presentation, and it was a similar atmosphere because it was abstract. But if this were to evolve into a specific project in a specific place, then temperatures would rise among all players, because that’s when they would understand what’s at stake.”

Still, the students felt the pressure. “I was nervous,” said second-year MESM Sarah Sorensen, who made a motion at the end of the mock meeting, which she prepared for partially by interviewing “her” SAC member and attending a meeting of another environmental working group.

“I really enjoyed getting to sit at the table and see how it would go in real life,” she said. “It took everything we’ve been learning in class and showed us how it would be applied.”

The innovative learning exercise was the result of collaboration among Channel Islands National Marine Sanctuary and SAC members, California Sea Grant, and the Bren School. The application of the students’ learned skills fits perfectly with the Bren School philosophy, Hastings said, but also “parallels a major tenant of NOAA’s goal, which is to provide education and outreach on ocean and coastal policy issues. I saw the opportunity to reach both of our mandates and deepen our relationship between the sanctuary and the Bren School.”

Bren School alumna Kristi Birney (MESM 2006), marine conservation analyst at the Santa Barbara-based Environmental Defense Center, a nonprofit legal center, saw how the exercise fit into the Bren School’s emphasis on real-world application of academic knowledge.

“It was a great example of what the Bren School does best, which is teaching students practical skills, really getting them out into the community, having them talk to people who are working in the field they want to enter, learning what they do, and having to figure out how that happens – and then using that in an academic setting. To bring that around and turn it into a class exercise is what Bren is all about.

“The experience overflows with career development, because the students really had a chance to reach out to working professionals who they probably would not meet in a traditional classroom setting, especially people like commercial fishermen, a constituency that is not always visible in academia but that you may work with or for, addressing concerns they have,” Birney added. “When Sean suggested this [to the SAC], we were all supportive, because as community members, we recognize the importance of students having the experience of learning what we do.

6. New Marine Preserve for Central Coast?

By Matt Kettmann
Santa Barbara Independent
December 2, 2013

As the opposition to an extended life for the Diablo Canyon nuclear power facility continues to reverberate around San Luis Obispo County and beyond, the uproar is also prompting a more forward-looking plan from the Northern Chumash Tribal Council, which is leading the charge for a brand new national marine sanctuary off of the Central Coast. Connecting the gap between the already protected waters of Monterey Bay and the Channel Islands, the proposed Chumash Heritage National Marine Sanctuary would preserve the many ancient coastal villages and sacred sites that now sit underwater (due to sea waters having risen by 300 feet over the past 10,000 years) by stopping future offshore drilling, fracking, acoustic, and/or seismic testing. If successful, it would be the first archaeology-minded national preserve in the United States, which is currently home to 14 such sanctuaries from Hawaii to the East Coast.

“We want to stop oil drilling and seismic testing because of Diablo Canyon, and we want to save our sacred sites that are submerged in the ocean,” said tribal councilmember Fred Collins, who has enlisted the support of Sierra Club chapters and others in the campaign. “We want to create ‘thrivability,’” said Collins. “We don’t use the word sustainability because that’s the slow death of mother earth. Thrivability is where we want to go.” That also includes working with commercial and recreational fishermen, said Collins, who wants to enhance what they do, not regulate it.

The timing of the push is strategic, as the National Oceanic and Atmospheric Administration is in the process of finalizing the criteria to judge sanctuary nominations, a process that was last undertaken in 1990. “There are many communities across the nation who would like to have national marine sanctuary like the one being talked about off of San Luis Obispo,” said NOAA’s Lisa Wooninck, who received more than 19,000 comments on the proposed criteria over the summer and thinks there may be 10 or more new sanctuaries eventually proposed. The nomination criteria should be finalized by March 2014, which would allow NOAA to start evaluating proposed sanctuaries before deciding which are worthy of designation. And each sanctuary functions a bit differently, said Wooninck, explaining, “The protections focus on what is of national significance at that place.”

So even if the Chumash Heritage NMS meets the initial criteria, it still must compete against marine sites across the country. “We got the momentum going again now — we’ve got a local, national, and international presence going forward,” said Collins, who said this idea first came about during the 1990 nomination process and hopes it will also result in more research, educational opportunities, and even an interactive center down the road. “This is one of the most incredible areas in the world...and this will be the first indigenous marine sanctuary in the United States.”

<http://www.independent.com/news/2013/dec/02/new-marine-preserve-central-coast/>

7. Study Maps Human Impacts on Top Ocean Predators Along US West Coast

The Almagest
December 2, 2013

The California Current System along the U.S. west coast is among the richest ecosystems in the world, driven by nutrient input from coastal upwelling and supporting a great diversity of marine life. Like coastal regions in general, it is also heavily impacted by human activities. A new study led by scientists at the University of California, Santa Cruz, reveals areas along the west coast where human impacts are highest on marine predators such as whales, seals, seabirds, and turtles.

The study, published in *Nature Communications*, found that many of the high impact areas are within the boundaries of National Marine Sanctuaries. This means there are good opportunities for improving management strategies, according to first author Sara Maxwell, who led the study as a graduate student in ocean sciences at UC Santa Cruz and is now a postdoctoral scholar at Stanford University's Hopkins Marine Station.

"The sanctuaries are located close to the coast in areas where there are a lot of human activities and a lot of marine life, so it's not surprising that we see a lot of impacts there," Maxwell said, noting that oil spills were a big concern when the sanctuaries were established, and many do not limit activities such as fishing, although they are actively engaged in managing industries such as shipping.

"With the sanctuaries already in place, we have an opportunity to increase protections. The results of this study allow us to be more specific in where we focus management efforts so that we can minimize the economic impact on people," she said.

There are five National Marine Sanctuaries along the west coast, covering nearly 15,000 square miles. A proposed expansion of the Gulf of the Farallones and Cordell Bank National Marine Sanctuaries would extend protections north to Point Arena, a key area identified in the study.

Marine mammals and other predators are critical to the health of marine ecosystems. The study used tracking data for eight species of marine predators: blue whales, humpback whales, northern elephant seals, California sea lions, black-footed and Laysan albatrosses, sooty shearwaters, and leatherback sea turtles. These are among the 23 species whose movements have been tracked since 2000 as part of the Tagging of Pacific Predators (TOPP) program. The eight species included in the new study are ecologically important but are not commercially exploited, Maxwell said.

The TOPP studies showed that many marine predators travel thousands of miles every year, yet often concentrate within small-scale "hotspots" to breed or feed on fish and other prey. Many such hotspots are found within the California Current System.

Maxwell and her coauthors combined the TOPP tracking data with a database of human impacts in the California Current System that was developed by a group led by coauthor Benjamin Halpern at UC Santa Barbara. The relative impact on each species was determined for each of 24 stressors associated with human activities, such as fishing, shipping, climate change, and pollution. The analysis yielded maps showing where the greatest impacts on each species are likely to be.

"Areas where key habitats and human impacts overlap represent important areas for conservation efforts," Maxwell said. "In other cases, areas of high human activities are not key habitats for predators. As a result, we can maximize both conservation of marine predators and human uses that our coastal communities depend on."

The study suggests that protecting key habitat without considering human uses may result in missed opportunities for sustainable resource use. "Having this detailed spatial information will help us move toward a more sustainable

management approach,” said coauthor Elliott Hazen, a research biologist at UCSC and the NOAA Southwest Fisheries Science Center.

Providing information to support management and policy decisions was one of the goals of the TOPP program, which was conceived by coauthors Dan Costa at UC Santa Cruz, Steven Bograd at NOAA, and Barbara Block at Stanford. TOPP researchers used sophisticated tags with satellite- or light-based geolocation capabilities to track the movements of top predators throughout the Pacific Ocean.

“A major component of the TOPP program was to identify important conservation areas of the North Pacific Ocean. This paper is a significant step forward in increasing our awareness of the ‘blue Serengeti’ that lies just off the west coast of the U.S.,” Costa said.

<http://www.thealmagest.com/study-maps-human-impacts-top-ocean-predators-along-us-west-coast/5341>
