The California State University
COUNCIL ON OCEAN AFFAIRS, SCIENCE & TECHNOLOGY (COAST)

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**CSU Researchers Awarded $865,884 in Research Funding to Assist State of California with Ocean and Coastal Compensatory Mitigation Science**

The California State University Council on Ocean Affairs, Science and Technology (COAST) has awarded $765,884 through its State Science Information Needs Program (SSINP) to three different CSU campuses to support research projects that will aid the state of California by advancing the science of ocean and coastal compensatory mitigation[1] and associated restoration. The California Ocean Protection Council (OPC) is providing an additional $100,000 to support the project led by Sean Anderson, PhD, at CSU Channel Islands (see below).

These awards will support four CSU faculty members and over 26 students at three different CSU campuses as well as collaborators at three institutions outside the CSU.

Sean Anderson, PhD, (CSU Channel Islands) and Richard Ambrose, PhD, (UCLA) will convene a series of expert working groups to develop guidance to assist state agencies in the development of scientifically-sound compensatory mitigation requirements. Specific guidance will be developed for communities of particular concern such as kelp and oyster beds, salt marshes, and sandy beaches. The project, entitled “Improved Mitigation Frameworks”, was awarded $300,350, including $200,350 from COAST and $100,000 from the OPC.

Jeremy Claisse, PhD, (Cal Poly Pomona) and Daniel Pondella, PhD, (Occidental College) will collect physical and biological information from 10 artificial reefs covering 34 acres off the Southern California coast. Some of these artificial reefs date back to the 1960s and have not been systematically monitored since their installation. This information will support the California Department of Fish and Wildlife in the development of an artificial reef management plan. The project, entitled “Assessing Current Biological and Physical Status of California’s Artificial Reefs with Comparisons to Natural Reefs to Improve Compensatory Mitigation Outcomes”, was awarded $345,255.

[1] Compensatory mitigation is the practice of requiring that the damages from certain activities be “compensated for” through actions that render environmental benefits. For example, installation of a desalination facility may cause environmental impacts that could be compensated for through restoration of a wetland.

Kerry Nickols, PhD, (CSUN), Mark Steele, PhD, (CSUN) and Will White, PhD, (Oregon State University) will use data from an artificial reef established to compensate for damages associated with the San Onofre Nuclear Generating Station to answer an important scientific question regarding whether artificial reefs attract fish from other areas or "produce" fish by virtue of providing additional habitat. The project, entitled "Understanding Production and Attraction on Artificial Reefs to Improve the Science of Mitigation", was awarded $220,279.

All research teams will consult with state of California agencies as they begin their projects so that the results are as useful as possible to the state. "The California Department of Fish and Wildlife (CDFW) is pleased that COAST has funded a suite of projects designed to fill critical data gaps and improve the state's understanding of the role of artificial reefs in marine mitigation programs," said CDFW Director Charlton H. Bonham. "We value and appreciate the ability to work with COAST to identify priority research needs and look forward to collaborating with the research projects as they proceed."

"OPC is working with our partner agencies to develop a consistent policy to guide coastal and ocean restoration and mitigation, said Mark Gold, PhD, Executive Director, OPC. "The projects being supported by COAST and OPC will substantially advance the state of the science related to compensatory mitigation, directly informing state policy."

Funding for the COAST SSINP comes from a one-time $3 million state appropriation to the CSU for research that supports the state of California's ocean and coastal science needs. The three projects described here result from the third and final competitive round of funding from this appropriation. In sum, COAST activities resulted in $3.2 million worth of new research in the CSU, involving 19 researchers and over 56 students from 8 CSU campuses. "I'm proud to say we've been excellent stewards of public funds, but more importantly, we have provided opportunities for CSU students to gain skills and experiences that will help them successfully join the ocean and coastal workforce," said Krista Kamer, PhD, COAST Director.

Project summaries can be found on COAST's website.

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**About the CSU and the Council on Ocean Affairs, Science & Technology**
The California State University is the largest system of four-year higher education in the country, with 23 campuses, nearly 56,000 faculty and staff members, and over 477,000 students. Created in 1960, the mission of the CSU is to provide high-quality, affordable education to meet the ever-changing needs of California. One in every 20 Americans holding a college degree is a graduate of the CSU and our alumni are four million strong.

The CSU Council on Ocean Affairs, Science & Technology (COAST) promotes research and education that advance our knowledge of marine and coastal systems. COAST has over 600 members from throughout the CSU working to inform solutions for ocean and coastal issues at multiple scales.