

ROV Data Integration Fellow

Since 1999, CDFW has monitored MPAs using remotely operated vehicles (ROV) which has resulted in surveys throughout California's nearshore ocean waters, including collaborative MPA baseline monitoring projects. More recently, in 2014, CDFW initiated a three-year statewide visual survey of rocky habitats within and outside of MPAs. Data from these surveys will be useful in monitoring effects of MPA implementation and can also contribute to determining select MPAs and metrics across the state to assess network performance. Survey data can also provide density and size estimates which could be used in MPA integrated stock assessments. Recent advances in habitat mapping off the California coast may also provide an opportunity to integrate ROV survey data into MPA integrated stock assessments by providing spatially explicit estimates of fish and invertebrate abundance over rocky habitats. These observations derived from georeferenced video and still photography imagery have created a rich and spatially specific dataset from which many analyses could be performed and novel approaches to integrating these data into existing management structures could be developed.

The University of California, Davis and California Department of Fish and Wildlife seek an experienced Post-Doctoral Researcher to create innovative approaches and analyses in support of MPA network management in California. Specifically the Post Doc will be asked to lead the development of data-processing algorithms to integrate both high resolution bathymetry maps and visual survey data for species association with various rocky habitats; predictive spatial models for managed species using ROV and other visual survey data at local, regional, and broader scales using high resolution bathymetry mapping data and other available spatially explicit data; discrete recommendations for a sample design for MPA monitoring in the habitats covered by the ROV work that is highly efficient and will allow the performance evaluation of the MPA network in these habitats at meeting the goals of the Marine Life Protection Act; and data products that will integrate into commonly used stock assessments models used on the west coast.

We seek a creative individual with a PhD in Ecology and Evolutionary Biology, Fisheries Science, Marine Science, or a related field and research expertise in at least one of MPAs, ecosystem-based management, monitoring and adaptive management, population dynamics, and spatial ecology. The individual will need to be interested and have the ability to effectively work in interdisciplinary teams on cross-cutting issues. The work of the Postdoctoral Researcher will require proficiency in programming language such as R and Python, significant experience with GIS, data visualization, programming, data management/protocol, video post processing and data manipulation, coding, metadata, and relational databases. Given the focus and goals of the project and of the groups involved, we seek a person with experience and/or interest in both advancing scientific frontiers and addressing real-world challenges in sustainable ocean resource management.

The Postdoc will be part of a specific faculty sponsor(s)' lab at UC Davis and hosted at the California Department of Fish and Wildlife office in Eureka. The Postdoc will be working collaboratively with both UC Davis faculty and the CDFW staff scientist that leads ROV work. This multi-faceted mentoring approach will provide opportunities for the Postdoc to develop innovative scientific applied approaches that will directly affect marine resource management decisions in California. In addition to frequent communication with faculty via remote meetings, the position includes a travel stipend that will support significant time at the UC Davis campus to ensure close integration with the UC Davis faculty and community.