West Coast Region
Sanctuaries Soundscape Ecology Summer 2024 Internship

Location: remote

Supervising Mentor: Lindsey Reeves

Who We Are
The National Marine Sanctuary Foundation supports projects across the National Marine Sanctuary System, a network of nationally significant protected areas in our ocean, coasts, and Great Lakes. This system is comprised of 14 individual sites and spans more than 620,000 square miles across the waters of the United States, from the South Pacific to the North Atlantic. Sanctuaries provide habitat for endangered, threatened, and rare species; preserve historic shipwrecks; and protect sacred cultural seascapes. They are frontiers for education and research, serving as outdoor classrooms for students of all ages to enjoy tide pools and trails of sunken vessels. They are living laboratories for scientists to understand and better protect marine environments. And they offer opportunities for visitors to dive through kelp forests, surf along scenic coastlines, and observe extraordinary sea life, from otters to orcas. The National Marine Sanctuary Foundation is a leading voice for these U.S. protected waters. We work in partnership with communities and the National Oceanic and Atmospheric Administration (NOAA) to support on-the-water conservation projects, education and public outreach, and research to help conserve our waters, for the good of the world and everything in it.

Fish are critical members of oceanic food webs, regulate global climate through carbon transport, and are a primary protein source for a billion people. Historically, fish are studied using net-tow and diving methods, which are invasive, laborious, financially expensive, and time-limited. Passive acoustic monitoring (PAM) of fish is a noninvasive, relatively inexpensive method to produce long timeseries to study soniferous (singing) fish. Some fish sing together in “chorus,” for hours at a time in order to attract a mate and reproduce. Different species of fish produce unique choruses, which can be distinguished from each other and from the soundscape. Therefore, fish choruses can be used to identify spawning season and location, and what is considered essential habitat for their reproduction. The West Coast National Marine Sanctuaries host a cacophony of fish choruses. Fish chorusing is important to study within the sanctuaries as understanding reproductive behavior and identifying essential fish habitat is crucial in the context of protecting endangered and threatened fish species. We have preliminary data showing where and when fish are chorusing within Monterey Bay National Marine
Sanctuary (MBNMS), the proposed Chumash Heritage National Marine Sanctuary (CHNMS), and Channel Islands National Marine Sanctuary (CINMS). This summer intern will explore fish chorusing within these three sanctuaries by scanning ongoing archival acoustic data for known and unknown fish calls and chorus, as well as how we can integrate our growing understanding of fish presence with larger marine soundscape elements of interest (otters, vessels, temperature, etc.) pertinent to California sanctuaries.

The National Marine Sanctuary Foundation is committed to a culture of inclusion, equity, and belonging. We honor experiences, perspectives, and unique identities, and welcome the contributions that you can bring to the dedicated team. With a diverse team of employees and interns, we can grow and learn better together and achieve our mission to protect the health of the ocean, coasts and Great Lakes for current and future generations.

What You’ll Do

• Log fish chorusing for a series of three recordings at a shallow listening station in the proposed CHNMS. As time allows, scan archival data from MBNMS and CINMS to log fish chorus.
• Support management of existing projects by producing visualizations of time series for fish chorusing at California sanctuaries.
• Work with Ella Kim and other researchers to submit fish presence data products to the appropriate data portals (e.g., West Coast Ocean Alliance data portal).
• Attend and participate in regular meetings with partners, in addition to weekly progress meetings with the research leads and supervisor.

Who You Are

• Proficient writing, analytical, and figure creation skills.
• Ability to perform assigned tasks and produce deliverables within the 10-week time frame.
• Demonstrated initiative and ability to work both independently and as part of a team.
• Attention to detail and highly organized.
• Familiarity with a range of software, including Microsoft Word, Excel, PowerPoint. Experience with programming in R/MATLAB would be helpful, but not required prior to internship start.
• Demonstrated interest in environmental or marine sciences; biostatistics skills is a plus.
Time Commitment and Stipend Amount
Intern is expected to work 30 hours per week and will receive a monthly stipend of $1,800. The time frame of the internship is June/July - September 2024, with the option to extend.

How to Apply
Please submit a short cover letter and resume to lreeves@marinesanctuary.org.