College of Natural Sciences
Marine Science Institute

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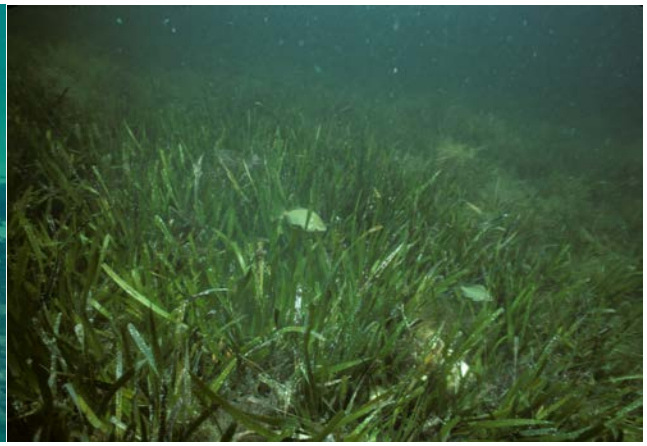
Postdoctoral Research Opportunity: Coastwide Mapping of Seagrasses in Texas

Institution: University of Texas at Austin, Department of Marine Science
Location: Port Aransas, Texas (Travel to UT-Austin main campus 1-2 times/yr)
Advisor: Kenneth H. Dunton
Earliest Start Date: October 2025
Position Duration: Two years (with possible extension)
Annual Salary: $70,000+ (depending on qualifications)

The University of Texas at Austin's Department of Marine Science and the Marine Science Institute invite applications for a postdoctoral position in Dr. Ken Dunton's Coastal Ecology Lab to conduct a coast-wide survey of seagrass distribution on the Texas Gulf coast.

Research Focus: The State of Texas is committed to the conservation of an estimated 90,000 hectares of seagrass meadows that provide habitat for a variety of estuarine dependent species. A targeted mapping survey has not been conducted for 20 years, despite reports of significant losses. This study (funded by the Texas General Land Office) requires the acquisition of high-resolution modern satellite imagery and application of deep convolutional neural networks (DCNN) to update existing maps of seagrass distribution. This project will combine mapping (Tier 1) with existing seagrass rapid assessment (Tier 2) data from the Texas Seagrass Monitoring Program,. The successful candidate is expected to produce high-resolution seagrass distribution maps and conduct extensive field sampling (with assistance of personnel from the Dunton lab) to ground-truth the imagery for calibration and validation. The mapping effort extends over 500 km of coastline and incorporates five species of seagrasses. Field studies are often conducted under a variety of ever-changing weather and sea conditions in remote coastal estuarine environments.

Main Responsibilities

- Acquire and orthorectify satellite imagery (separate budget is provided)
- Collaborate and coordinate with state, non-profit, and federal agency partners and academic colleagues in developing the methodology for high resolution mapping
- Produce high-resolution maps of seagrass distribution in Texas coastal waters
- Conduct change analysis from historical seagrass mapping surveys
- Coordinate ground-truthing fieldwork to validate maps, assess data accuracy, and precision
- Prepare manuscripts for publication in peer-reviewed journals
- Present research results at professional conferences and project meetings
- Mentor and collaborate with students

Required Qualifications

- PhD in computational science, marine science, biology, geoscience, or related field
- Relevant peer-reviewed publications in coastal ecosystems using high spatial resolution satellite imagery
- Excellent written and oral communication skills
- Strong programming experience (e.g., R, Python)
- Familiarity with machine learning algorithms (e.g., DCNN, XGBoost, SVM, Neural Networks)
- Familiarity with GIS software (e.g., ArcGIS, QGIS)
- Experience with modern image classification techniques to produce thematic maps from satellite imagery and other supporting data layers
- Experience with high-performance computer clusters (e.g., TAMU-HPRC, UT-TACC, NVIDIA Data Center)

Other Desired Qualifications:

- The successful candidate is expected to work closely with a cohesive research team in the Coastal Ecology Lab that includes two post docs, 4-6 graduate students, two research associates, and several technicians.
- Background in estuarine science, seagrass ecology, and submerged aquatic vegetation
- Experience with image analysis
- Demonstrated ability to conduct fieldwork in remote and challenging environments
- A positive work ethic and passion for science!

How to Apply

Please submit the following materials **as a single PDF**:

- A cover letter describing your interest and previous experience
- Curriculum vitae (CV)
- Contact information for three academic references (at least one should be from a former or current supervisor)

Please submit application materials to Dr. Dunton (ken.dunton@utexas.edu). Please write the subject line as UTMSI-Tier 1 Post Doc Applicant: [your name]