MINISTERIO
DE CIENCIA, INNOVACIÓN
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CSIC
CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS

CEAB
Centre d'Estudis Avançats de Blanes

CENTRO DE ESTUDIOS AVANZADOS DE BLANES (CEAB)

Research technician in remote sensing and coastal vegetated ecosystems

Description of the project

The DYNCOAST project focuses on the dynamics of coastal vegetated ecosystems and their societal implications along the Catalan coast. These ecosystems—including seagrass meadows, salt marshes, and sand dunes—provide key ecosystem services such as coastal protection, habitat provision and carbon storage, but face degradation due to climate and human pressures.

The project addresses the urgent need to understand how ecosystem dynamism affects resilience and service delivery in a context of global change, where rising sea levels, extreme events, and development pressures converge. Using interdisciplinary approaches across ecology, remote sensing, and social sciences, DYNCOAST aims to:

1. Identify hotspots of dynamism in coastal vegetated habitats through time-series analysis (aerial images, satellite data, UAVs).
2. Assess how vegetation contributes to sediment retention and coastal protection.
3. Evaluate the links between ecosystem dynamics, ecosystem service provision, and public perception.
4. Explore how ocean literacy, local knowledge, and adaptive governance contribute to societal adaptation to dynamic and changing coastal environments.

DYNCOAST offers a unique opportunity to contribute to cutting-edge research on dynamic coastal systems and the socio-ecological solutions required for their sustainable management.

Main tasks of the selected candidate

We are looking for a passionate candidate keen on both computer-based and field-based work, with a strong background in spatial analysis, ecology and marine sciences. The selected candidate will contribute to the DYNCOAST project by performing the following tasks:

- **Identify hotspots of dynamism** in coastal vegetated habitats (dunes, salt marshes, and seagrass meadows) using historical aerial imagery (e.g. ICGC), CORINE datasets, and satellite time series (e.g. Sentinel, Landsat), preferably in **R**, **Google Earth Engine**, or **QGIS**.
- **Participate in field campaigns** to extract **sediment cores** in seagrass meadows and process samples in the lab to estimate **carbon storage** across habitats with contrasting dynamism.
- Assess **sediment retention capacity of coastal habitats**:
    - For dunes and marshes, using existing UAV-derived topography or **LIDAR** datasets.
    - For seagrass meadows, using **sensor data** (waves and currents) and **buried plates** and **bars** to measure **bed level**.
- **Model the role of vegetation in coastal protection**, with validation from in-situ current and wave sensor data.
- **Analyse and interpret results**, write technical reports and contribute to scientific publications in collaboration with the project team.

C/ ACCÉS A LA CALA
ST. FRANCESC, 14
17300 BLANES, GIRONA,
ESPAÑA
TEL.: 972 33 61 01

correoelectrónico@ceab.csic.es

Professional profile

Essential

- Degree in Marine Sciences, Biology, Environmental Sciences, Geography or a related discipline.
- Working proficiency in English (spoken and written).
- Experience or training in remote sensing, GIS and modelling of ecological data.
- Interest in field-based research and capacity to participate in field campaigns.
- Motivation to contribute to scientific writing and publications.

Desirable

- Proficiency in R, Google Earth Engine or similar platforms for spatial analysis.
- Experience or training in photogrammetry, LIDAR or point cloud data.
- Familiarity with coastal hydrodynamics and time series analysis (e.g., waves, currents).
- Experience or training in numerical modelling software (e.g., Delft3D, XBEACH, Telemac).
- Interest in pursuing a scientific career or a future PhD.

Conditions offered

- Flexible working hours to promote a healthy work-life balance.
- Supportive work environment that encourages continuous learning and skill development across diverse disciplines.
- Integration into a dynamic, multidisciplinary scientific team.
- Competitive salary between €27,000 and €32,000 gross annually, based on qualifications, experience, and contract type, in line with CSIC salary scales.
- Initial full-time 12-month contract, with the option for renewal subject to funding availability and mutual interest.
- The workplace is located at the Centre d'Estudis Avançats de Blanes (CEAB), CSIC, in Blanes, Spain.

How to apply?

Send your **CV** and a **cover/motivation letter** (maximum 2 pages) detailing your interest, suitability, and how you meet the specified requirements to **jpages@ceab.csic.es** with the SUBJECT: "DYNCOAST + Candidate's Name and First Surname".

Application deadline: 5th August 2025

Estimated starting date: 1st October 2025