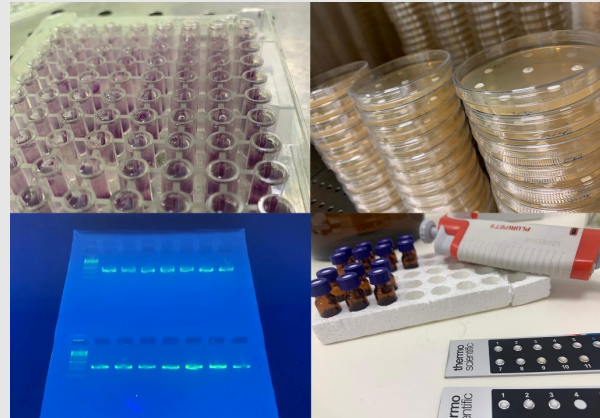




Sicily Marine Centre Functional Areas



**Biology, Ecology and
Management of Fisheries
resources (BEMFish)**

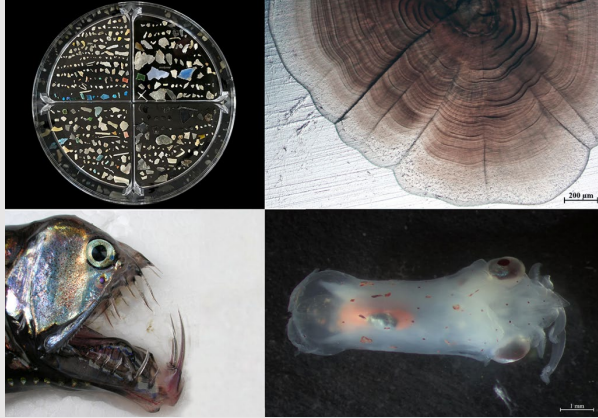


**Microbial Ecology and
Marine Biotechnology
(MicroBiotEco)**



**Biodiversity and Fisheries
(BioFish)**

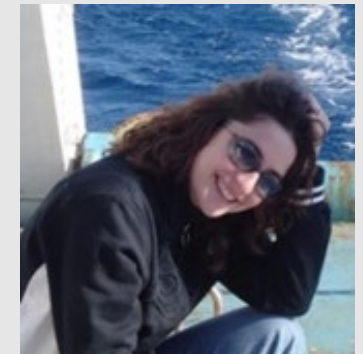
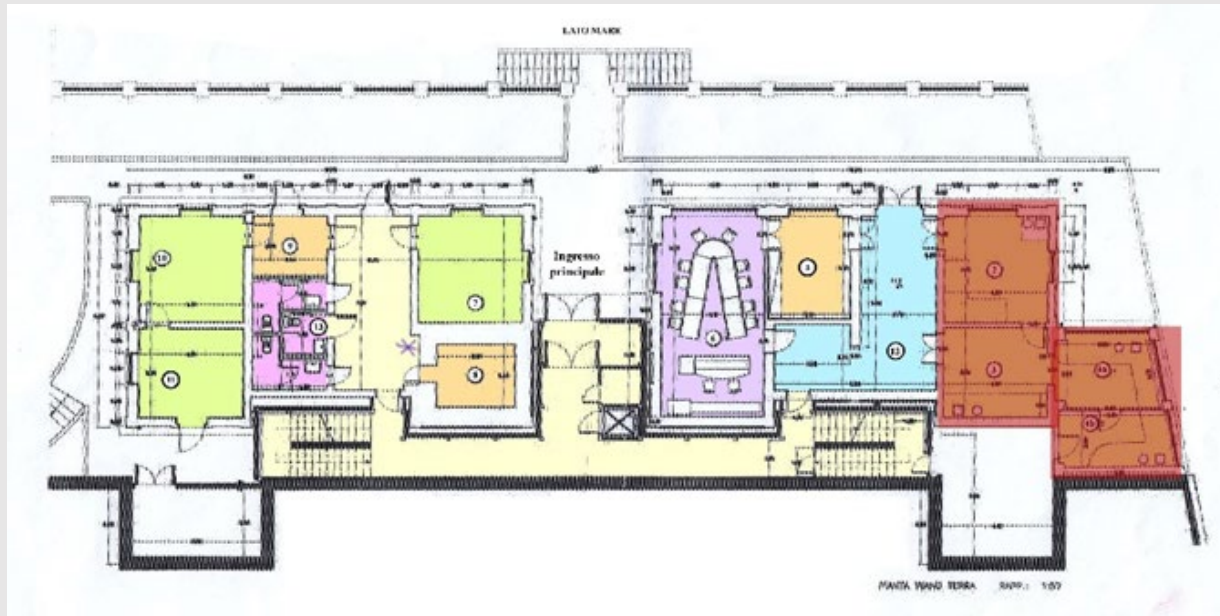
Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)



Biology, ecology and management of fisheries resources functional area hosts interdisciplinary researches, from studies on natural populations to the structure and functioning of the marine ecosystems. These researches mainly aim at biodiversity and natural habitats conservation and at promoting the sustainable use of marine resources.

The functional area includes three dedicated rooms with instruments and equipment:

- 1) Microscopy and Plastics Room (Lab 2)
- 2) Ichthyology and Fisheries Room (Lab 3 e 4a)
- 3) Trophic Ecology Room (Lab 4b)



Manager: **Marilena Sanfilippo**
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Extension #751

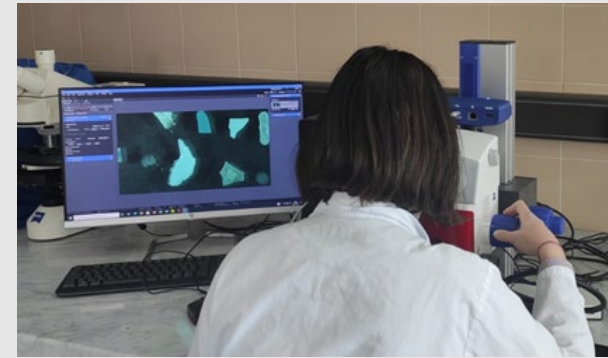
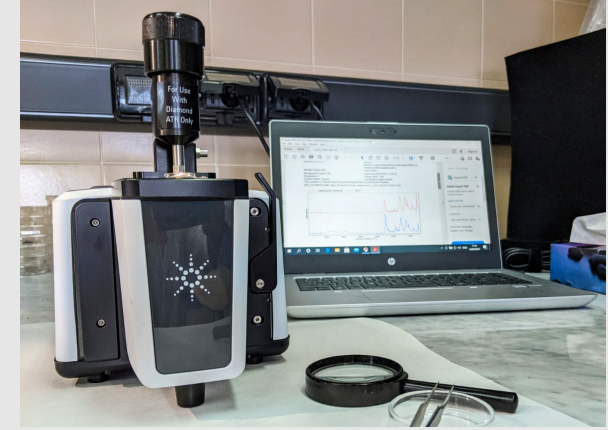
Messina – Villa Pace
Ground floor Block B1

Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)

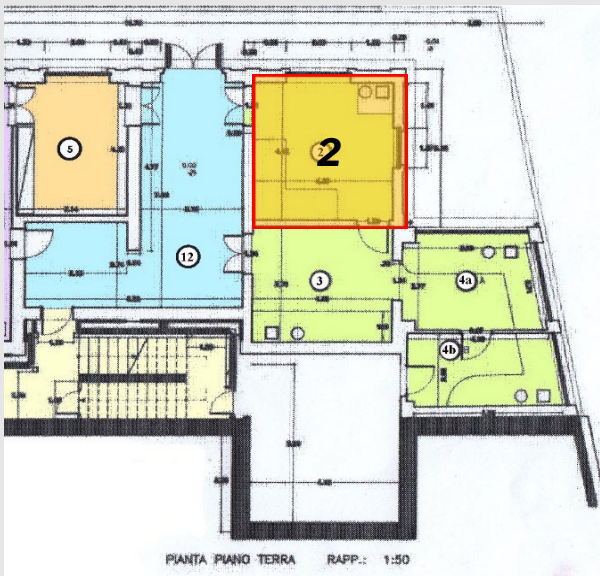


Microscopy

Microscopy Room is dedicated to the study of Marine Litter from different compartments of the marine environment, with the aim of assessing its impact with particular attention to the transfer of microplastics from the environment (water, sediments) to marine organisms (ingestion). The room is equipped with different types of microscopes and a Fourier Transform Infrared Spectrometer (FT-IR). The instruments are used to study microplastics from different environmental matrices (water, sediments) and biota), from basic morphometric characterisation to chemical identification of the main polymers.



Ground Floor Lab 2



Bookable instruments Lab 2:

- FT-IR Agilent Cary 630
- Zeiss Discovery V8 Stereo Microscope with Axiocam 208 colour camera and Zen Blue Software
- Zeiss Discovery V8 KMAT Stereo Microscope with Axiocam 305 colour camera and Zen Blue Software
- Zeiss Stemi 2000 stereo microscope, equipped with fibre optics
- Zeiss Stemi 2000/C stereo microscope (field)

Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)



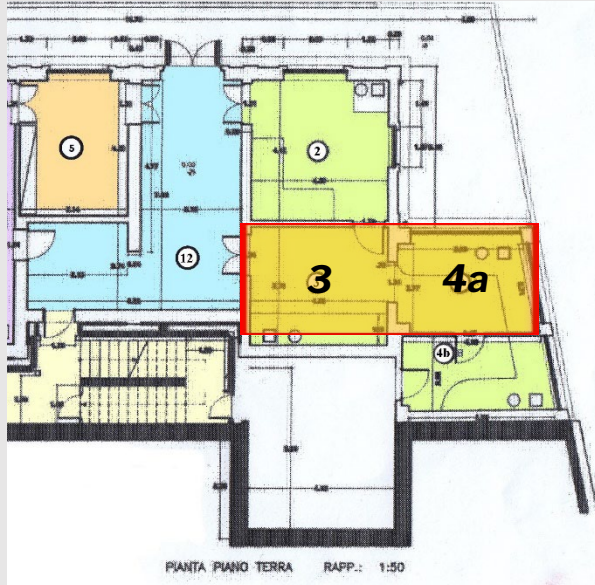
Ichthyology and Fisheries

The Ichthyology and Fisheries Room is dedicated to biology and ecology of fish species, cephalopods, and crustaceans of coastal and deep-sea environments: from taxonomy to age estimations, management and sustainable exploitation of resources. The room is equipped with the main instruments (cut-off machine, polishing machine, optical and stereomicroscopes, precision balances) necessary to process the species: morphological and weight analyses, analysis of otoliths and fish vertebrae, isolation, and analysis of stomach contents.

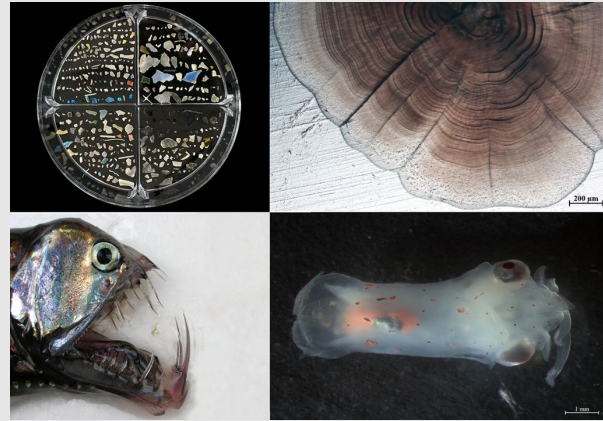
Bookable instruments *Lab 3 and Lab 4a*:

- Zeiss Axioscop2 Plus optical microscope with Axiocam 305 colour
- Zeiss Stemi 508 stereo microscope with Axiocam 305 color
- Nikon inverted microscope with LED illumination
- Zeiss Stemi SV11 stereo microscope with fibre optics
- Remet LS2 cleaning polisher
- Isomet LSS Buehler 11-1280-250 cut-off machine
- Steel counter/dissecting sink with grinder
- Technical precision balance (20 kg) BEL Italia BL30K
- Analytical precision balance (200 g) BEL Italia M214Ai
- Digital precision balance (2-3Kg) BEL Italia LG3102i
- Filtration apparatus with Millipore pump + three PVC filtration flasks

Ground Floor Lab 3 e Lab 4a



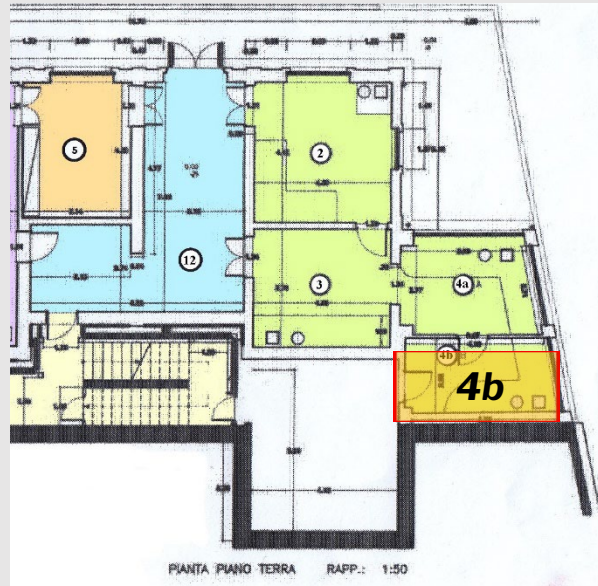
Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)



Trophic Ecology

The Trophic Ecology Room is an interdisciplinary area that works in synergy with the Microscopy and the Ichthyology and Fisheries rooms, where feeding strategies of pelagic species are studied. The available instruments provide logistical support to other investigations, from the chemical-physical characterisation of water to the extraction and treatment of microplastics from environmental matrices and biota, with chemical hood, filtration apparatus, freeze-dryer, scales, and various instruments for measuring chemical-physical parameters

Ground Floor Lab 4b

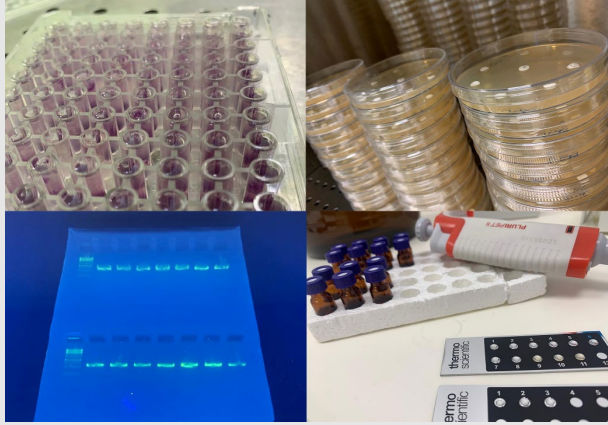


Bookable instruments Lab 4b:

- Chemical molecular fume hood Asal s.r.l. Carbo 900
- Corrosive substances filtration apparatus with diaphragm pump for hazardous substances with 3-position ramp and glass beakers
- Analytic balance (120-0,01 mg) Radwag
- Oxygen titrimetric system Titrette
- pH meter Hanna Instruments HI2002
- Heratherm OGH60 heater
- Zeiss Axioscop2 Plus optical microscope



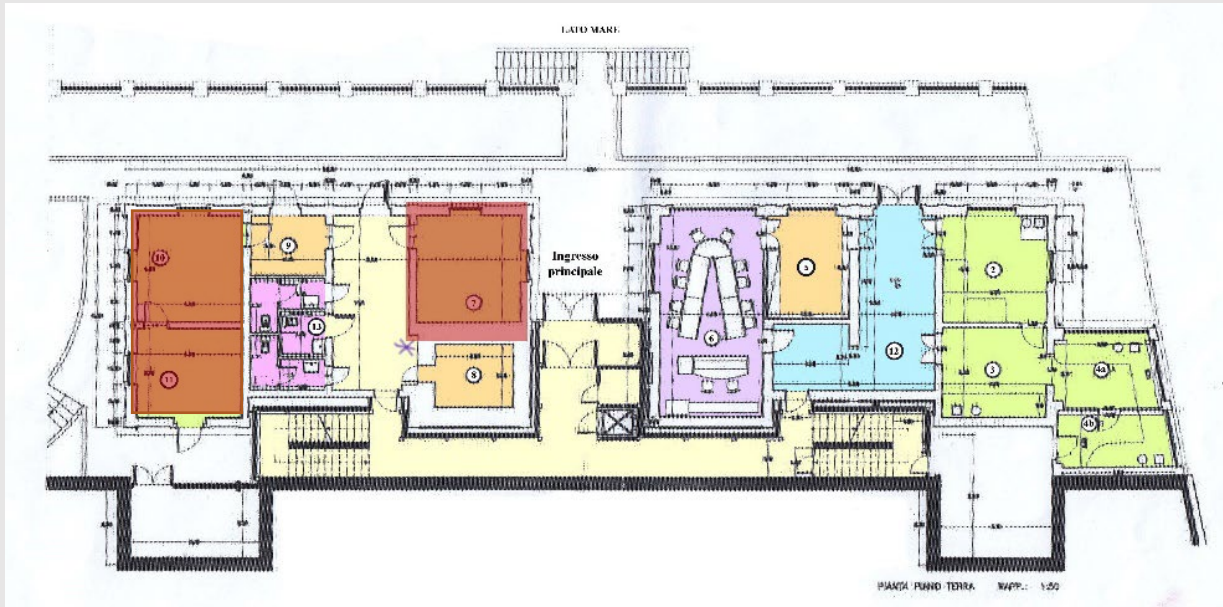
Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)



The functional area of Microbial Ecology and Marine Biotechnology is dedicated to study of microbial communities in the marine environment and to research biotechnological potential of marine resources.

Include three dedicated rooms with instruments and equipment :

- 1) Marine microbial ecology Room (Lab 7)
- 2) Marine biotechnology Room (Lab 10)
- 3) Molecular Biology and Genomic Room (Lab 11)



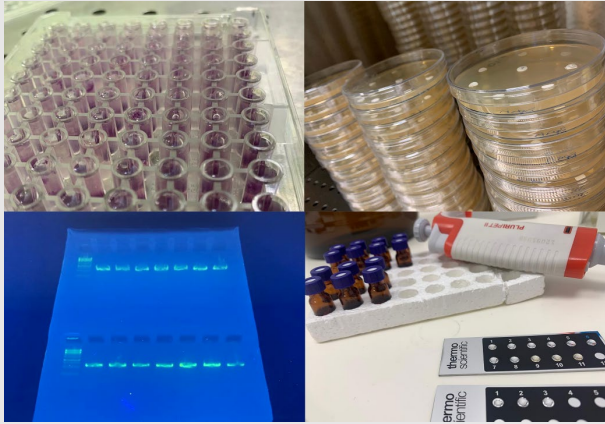
**Messina – Villa Pace
Ground floor Block B1**

Manager:
Erika Arcadi
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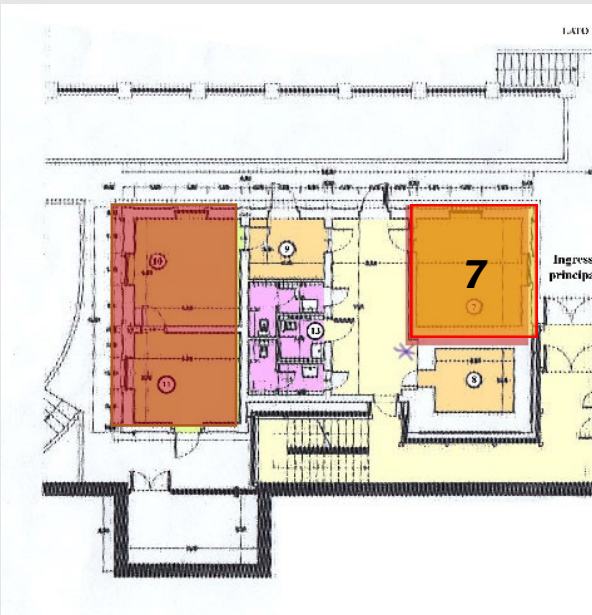
Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)

Marine Microbial Ecology

This room is devoted to study diversity and role of microorganisms in marine ecosystems. Particular attention is paid to extreme environments, both the extreme cold habitats (polar areas) and extreme hot habitats (marine hydrothermal vents). Among the multidisciplinary aims of the research area: study of correlations between the microbial community structure and the occurrence of contaminants of different nature (i.e. PCB, hydrocarbons, heavy metals, pharmaceuticals, pesticides); relationships with other organisms (marine invertebrates and fish).



Ground Floor Lab 7



Bookable instruments Lab 7:

- Laminar flow hood Biohazard Atlantic 1500
- Orbital incubated shaker Argolab SKI4
- Orbital shaker SKO-D XL
- DIRECT Q3 MILLIPORE Laboratory purification system for pure and ultrapure water
- Ultrasound bath Argolab DU-06
- Precision analytical balance (60-120 g) BEL Italia HPB105i
- Autoclave Vapour-Line eco25 VWR
- ThermoMixer® C Biosan ts-100
- Microwave oven

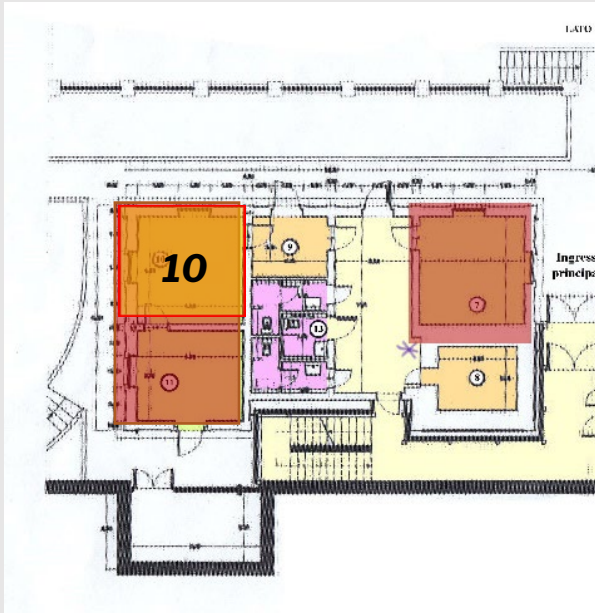
Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)

Marine Biotechnology

This room focused on the research of bioactive molecules with potential biotechnological applications in the biomedical and environmental remediation fields. The activities are devoted to the search for production of biological molecules (i.e. biosurfactants, exopolysaccharides, antibiofilm molecules, heavy metal chelators) by marine bacteria or by marine organisms.



Ground Floor Lab 10

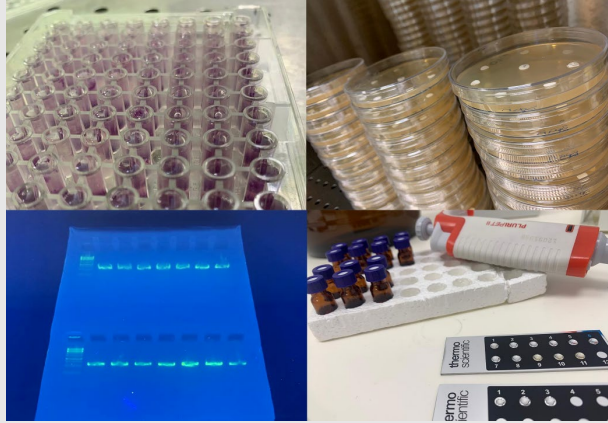


Bookable instruments Lab 10:

- Centrifuge NEYA-16R
- Natural convection high temperature incubator IBX Instruments
- Incubator Memmert D06058 Mod. 200
- Nano Drop - K LAB Optizen Nano Q Lite
- Spectrophotometer UV/VIS Onda Touch UV-21
- Icemaker Bioscientifica Mod. SLF 190° R290
- Evaporator Heidolph HEI VAP CORE HL G
- Rotavapor – Evaporatore Heidolph
- QUBIT 4 fluorimeter
- Mini Microcentrifuge D2012 SCIOLOGEX
- Thermal Cycler Biorad C1000 Touch N°05010
- HiPo MPP-96 Biosan Microplate Photometer



Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)



Molecular Biology and Genomic

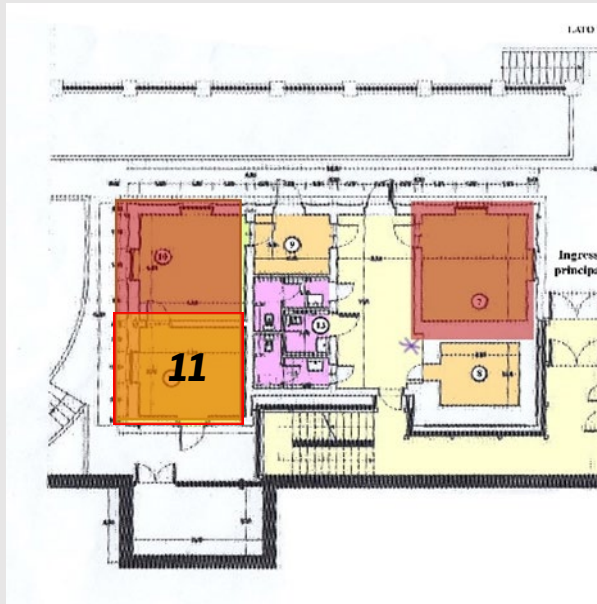
This room is dedicated to metagenomics and metatranscriptomics studies, to the identification of marine organisms and to the search for specific functional genes.

Bookable instruments *Lab 11*:

- Cappa chimica ASEM (con armadietto acidi/basi integrato)
- Electrophoresis system Power supply
- Laboratory refrigerated thermostat HT260
- Homogeniser MiniMix 100P CC
- Transilluminator UV-FOR M20
- ThermoMixer® C Biosan ts-100
- Christ Alpha Deltak freeze-dryer with vacuum pump



Ground Floor Lab 11



Functional Area of Biodiversity and Fisheries (BIOFish)



The BIODIVERSITY AND FISHERIES functional area is dedicated to the study of marine biodiversity and it is divided into two thematic areas:

1) Sustainable Fisheries Management

2) Conservation Biology



The shared laboratory (SZN / ISPRA / IAS-CNR) of Marine Ecology at the SZN headquarters of the Roosevelt Complex in Palermo is dedicated to both these two thematic areas



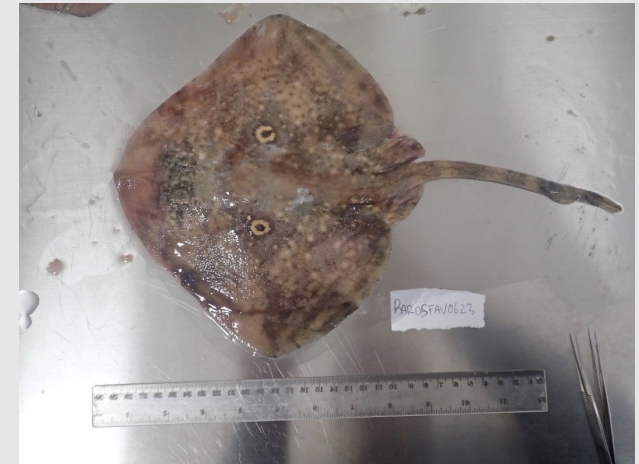
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Giulio Franzitta
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Functional Area of Biodiversity and Fisheries (BIOFish)

Sustainable Fisheries Management

The thematic area is dedicated to the study of the sustainable management and planning of human activities at sea, the definition of sustainable fishing strategies and measures through the study of the biological traits of fish species and benthos organisms, the design and implementation of models of ecosystem management.

The FA is equipped with a wet laboratory and a dry laboratory shared with ISPRA and IAS-CNR with bookable workstations for the use of workbenches, stereo and optical microscopes, digital precision scale, chemical hood and Safety Storage Cabinet.



Functional Area of Biodiversity and Fisheries (BIOFish)

Conservation Biology

Research in Conservation Biology uses an interdisciplinary approach, including the design of spatial protection measures (e.g. marine protected areas, fisheries exclusion zones), the study of ecological and socio-economic effects of SPAs, governance models for SPAs, and the identification of management actions to address cumulative human impacts on marine ecosystems

The Functional Area is furnished with instruments and equipments for infield sampling:

- Baited Remote Underwater Video (BRUV) for analysis of vagile fish and benthic populations
- SCUBA equipment for underwater visual census and habitat restoration interventions
- Equipments for environmental DNA sampling
- Multiparameter Sonde to measure the physical–chemical parameters in marine water



Furthermore, the FA is equipped with the M/N Lampuga, a 22 foot Jokerboat inflatable motorized with FB Mercury 150 hp and equipped for research activities at sea.