



# Sicily Marine Centre Functional Areas



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



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



**Biodiversity and Fisheries  
(BioFish)**

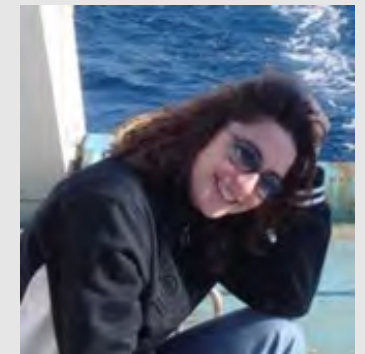
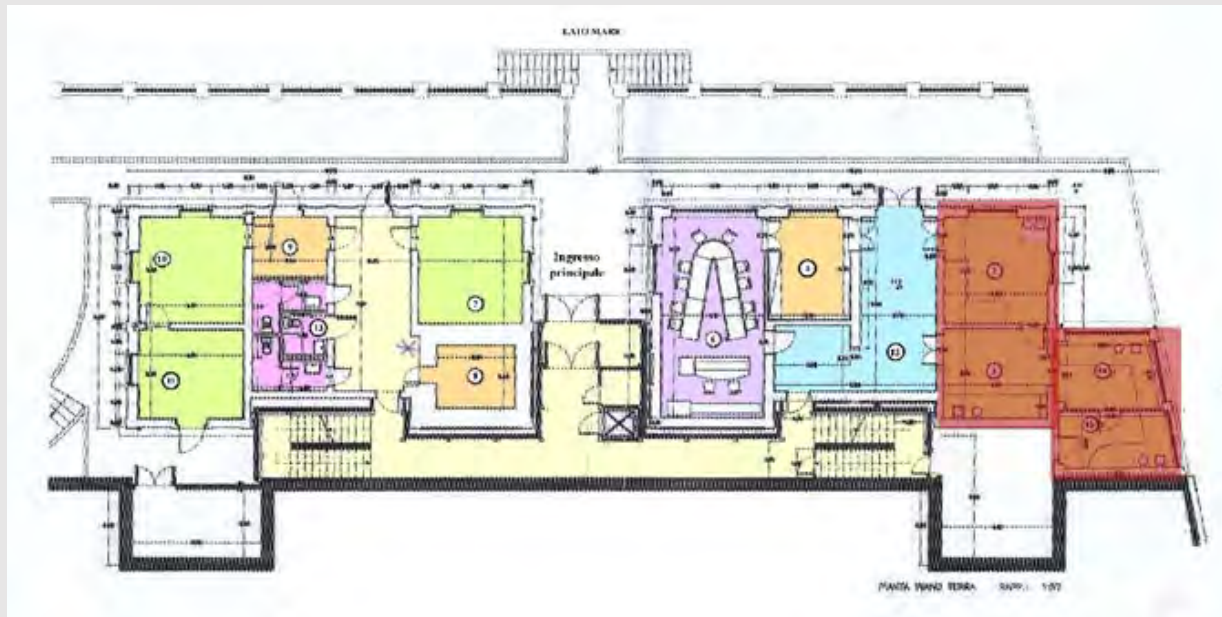
# Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)



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)



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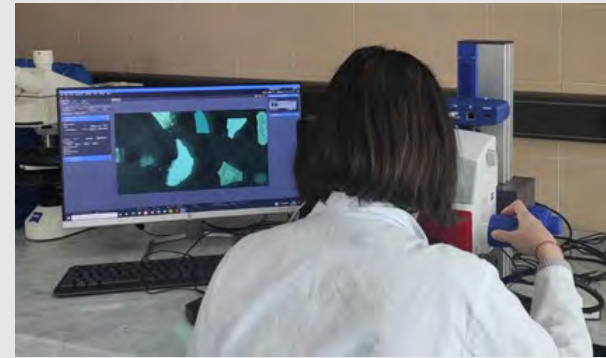
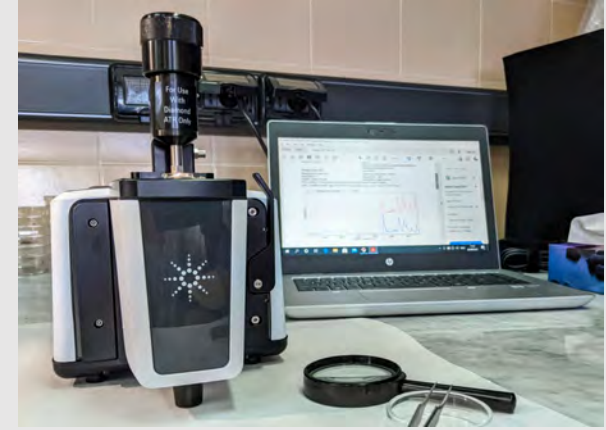
**Messina – Villa Pace**  
**Ground floor Block B1**

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

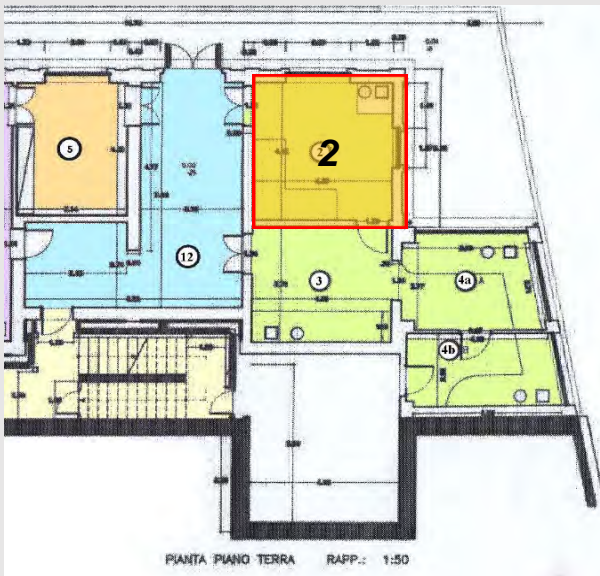


## Microscopy

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 Stemi 2000 stereo microscope, equipped with fibre optics
- Zeiss Axioscop2 Plus optical microscope

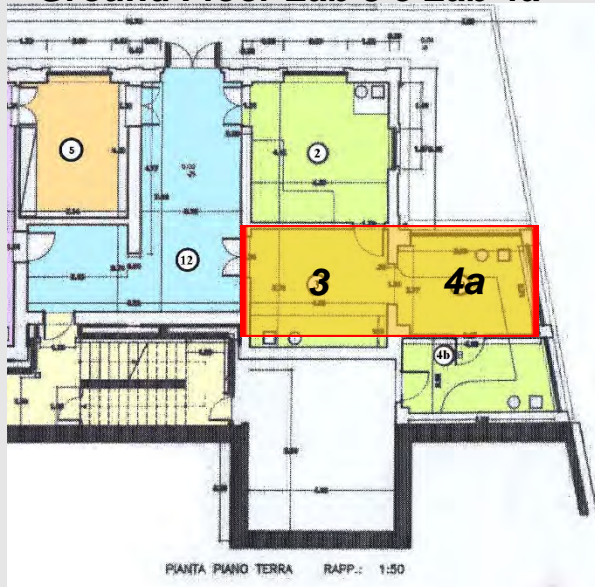
# Functional Area of BIOLOGY, ECOLOGY AND MANAGEMENT OF FISHERIES RESOURCES (BEMFish)



## 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.

**Ground Floor Lab 3 e Lab 4a**



### Bookable instruments Lab 3 and Lab 4a:

- Zeiss Axioscop2 Plus optical microscope
- Zeiss Stemi SV11 stereo microscope with fibre optics
- Zeiss Stemi 2000 stereo microscope with fibre optics
- Inversion microscope Axiovert 40CFL
- Remet LS2 cleaning polisher
- Isomet LSS Buehler 11-1280-250 cut-off machine
- Christ Alpha Delttek freeze-dryer with vacuum pump
- Steel dissection table



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

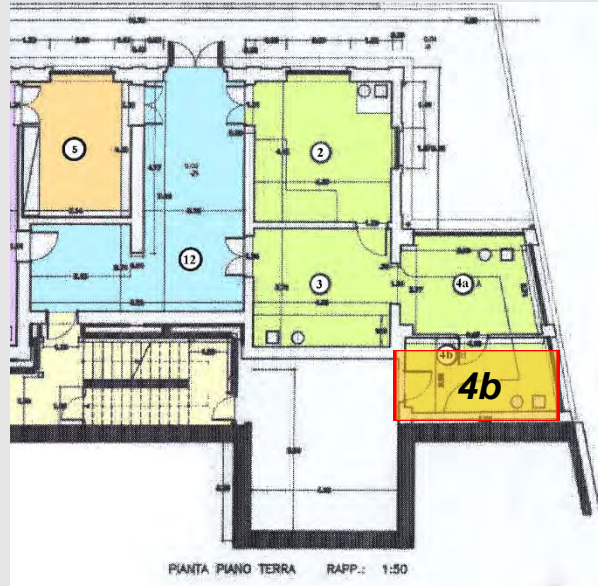


## Trophic Ecology

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**

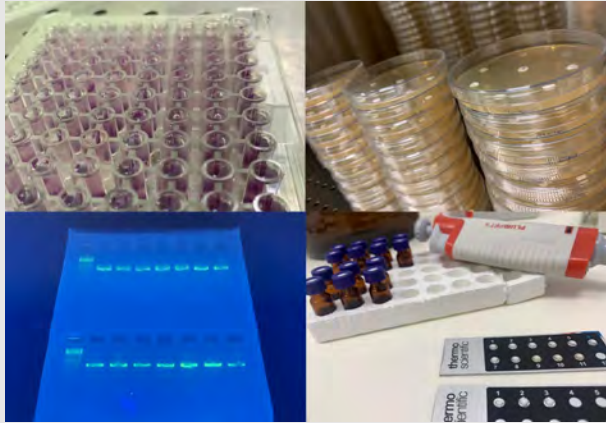


### Bookable instruments *Lab 4b*:

- Chemical molecular fume hood Asal s.r.l. Carbo 900
- Corrosive substances filtration apparatus with Rocker 300 pump for hazardous substances with 3-position ramp and glass beakers
- Autoclave Vapour-Line eco25 VWR



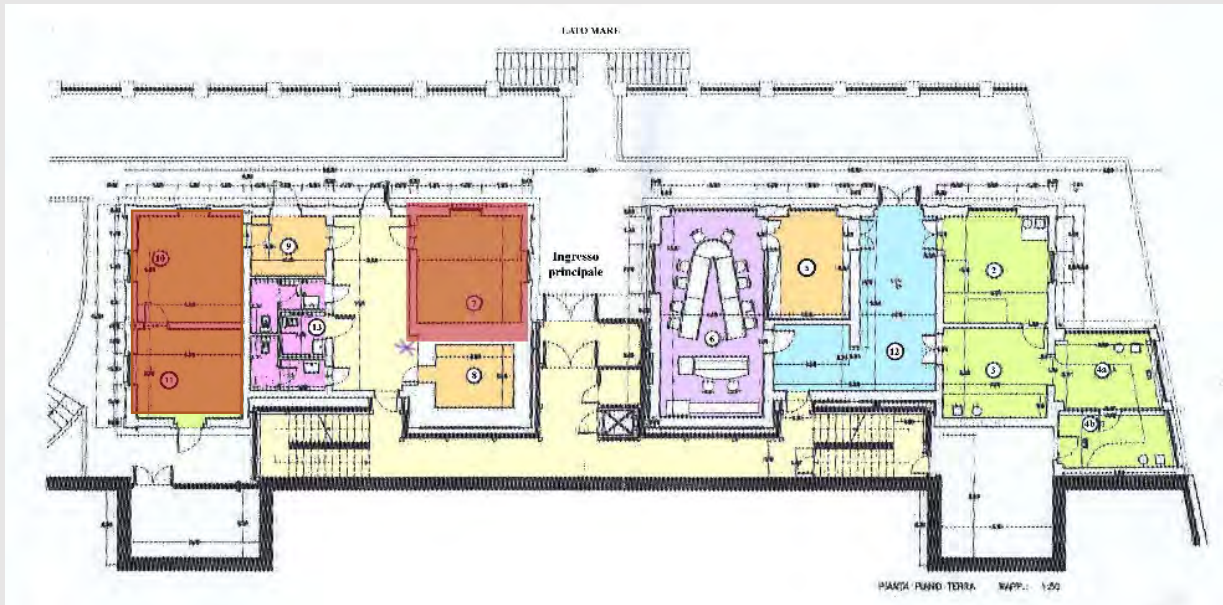
# Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)



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)



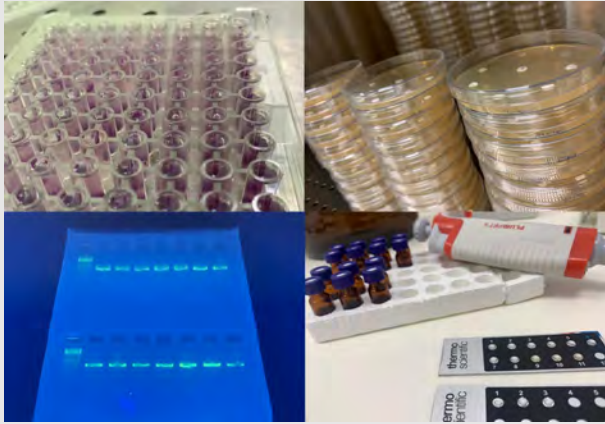
**Messina – Villa Pace  
Ground floor Block B1**

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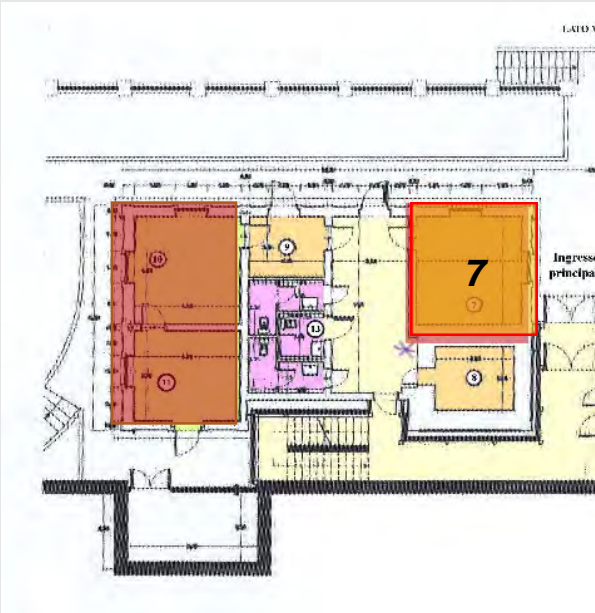
# Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)

## 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
- DIRECT Q3 MILLIPORE Laboratory purification system for pure and ultrapure water
- Thermostated incubator MEMMERT D06058 Mod. 200
- Ultrasound bath Argolab DU-06



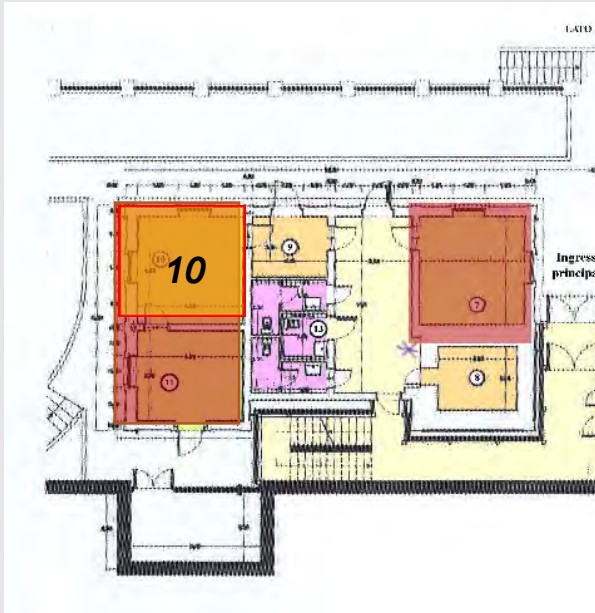
# Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)



## Marine Biotechnology

### Ground Floor Lab 10

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.



#### Bookable instruments *Lab 10*:

- HPLC Backman Coulter System Gold 126 Solvent Module
- Refrigerated Centrifuge Hermle Z323
- Orbital shaker SKO-D XL
- Laboratory refrigerated thermostat HT260
- Thermostated bath Julabo SW22
- Spectrophotometer Perkin Elmer UV/VIS Lambda Bio40





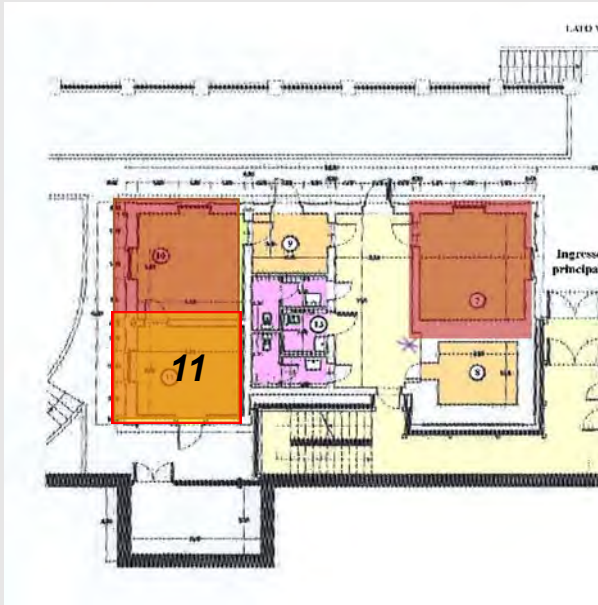
# Functional Area of MICROBIAL ECOLOGY AND MARINE BIOTECHNOLOGY (MicroBiotEco)



## Molecular Biology and Genomic

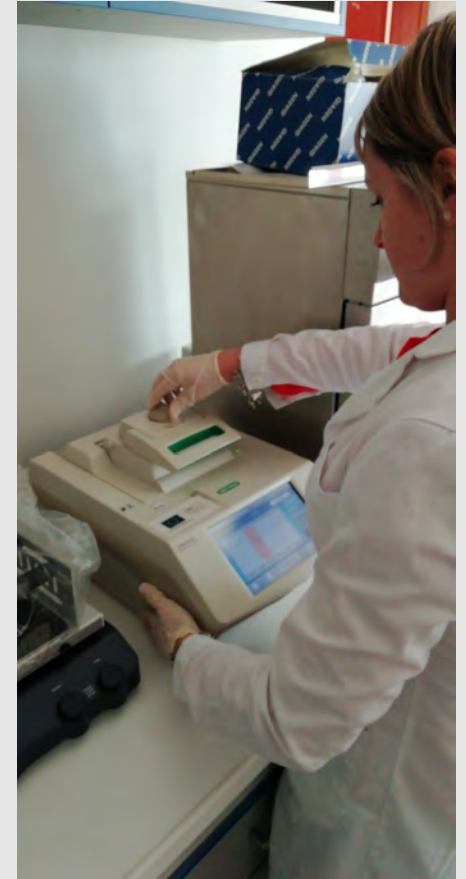
This room is dedicated to metagenomics and metatranscriptomics studies, to the identification of marine organisms and to the search for specific functional genes.

### Ground Floor Lab 11



#### Bookable instruments Lab 11:

- Thermal Cycler Biorad C1000 Touch N°05010
- Electrophoresis system
- Transilluminator UV
- ThermoMixer® C Biosan ts-100.
- MICROCENTRIFUGE D2012 SCIOLEX



# Functional Area of Biodiversity and Fisheries (BIOFish)



The *BIODIVERSITY AND FISHERIES* functional area is dedicated to the study of marine biodiversity and to its conservation. The functional area includes different theoretical and applied research topics such as ecosystem functioning, the biology and ecology of marine species and communities as well as the sustainable management and planning of human activities at sea. Furthermore, it uses an interdisciplinary approach to study biodiversity conservation, focusing on the design of spatial protection measures, the study of the ecological and socio-economic effects of protected areas, and the identification of management actions to address cumulative human impacts on marine ecosystems.



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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

