



IALE 2025

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Ecology Congress

Landscape Perspectives in a Rapidly Changing World

Session 1E

Islandscapes: from Biodiversity to Ecosystem Services

Other Effective area-based Conservation Measures (OECMs) in European Islands

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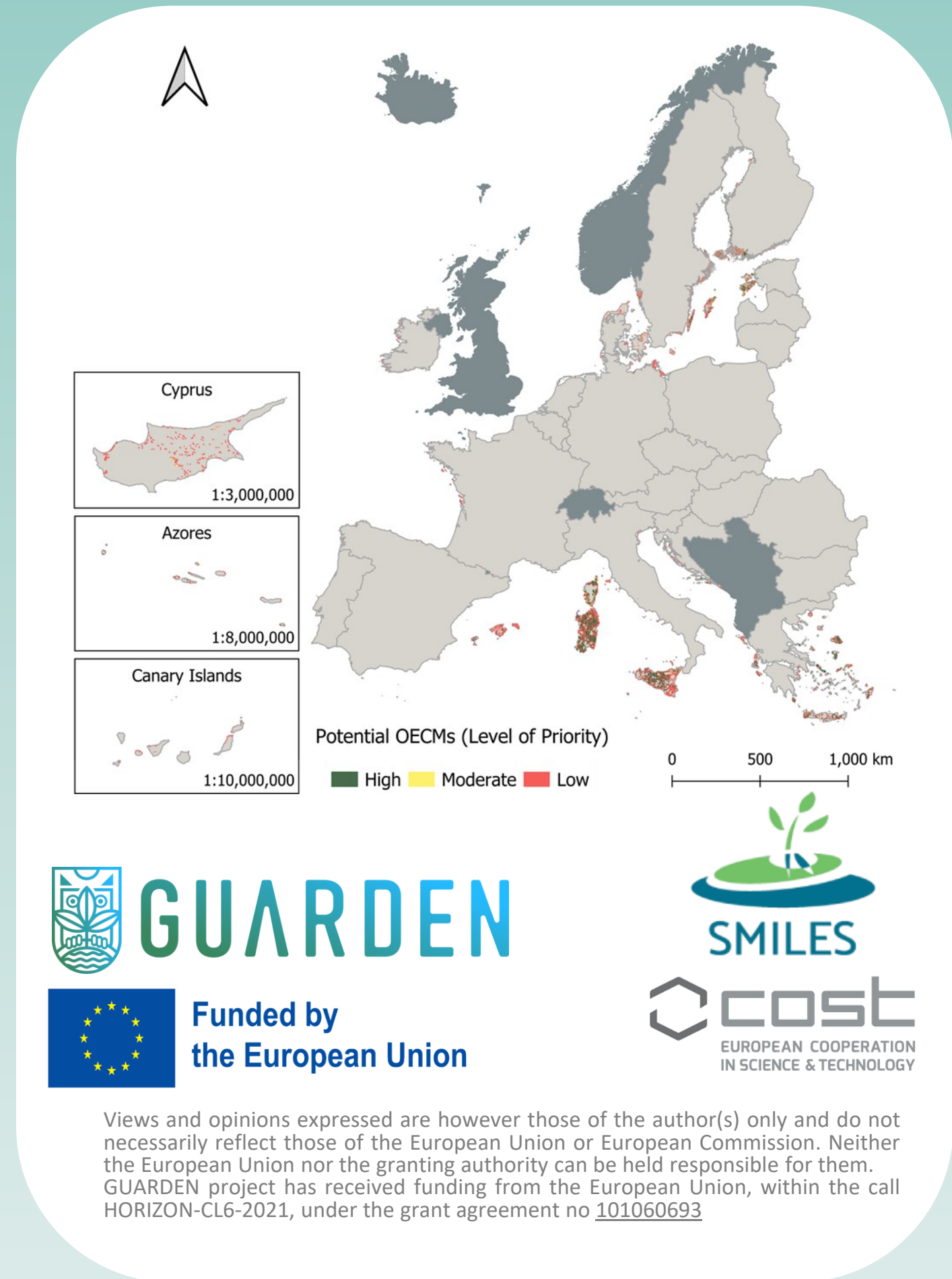
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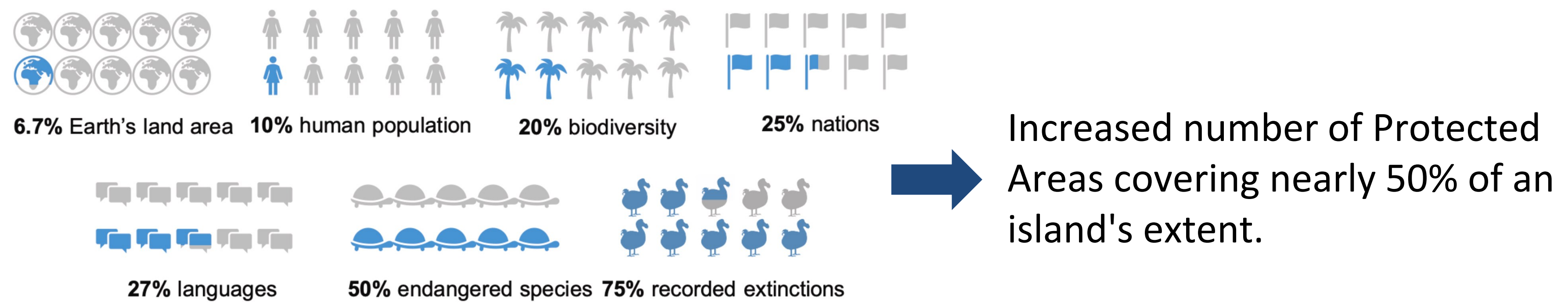
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Context

Islands have long been studied for their unique biodiversity due to their distinctive geographical characteristics, such as remoteness, isolation, and small size.



Islands' contribution to global statistics (source: Fernadez-Palacios et al 2021)

Growing human demand for tourism, recreational activities, and the exploitation of natural resources has jeopardized the effectiveness of existing Protected Areas

Taking advantage of existing tools and methods

Using what we already have!

Biodiversity needs every tool in the box: use OECMs

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To conserve global biodiversity, countries must forge equitable alliances that support sustainability in traditional pastoral lands, fisheries-management areas, Indigenous territories and more.

Global support is growing for the 30 × 30 movement – a goal to conserve 30% of the planet by 2030. In May, the G7 group of wealthy nations endorsed the commitment to this target that had been made by more than 50 countries in January. It is likely to be the headline goal when parties to the Convention on Biological Diversity (CBD) meet to discuss the latest global conservation agreement in May 2022 in Kunming, China.

hunting areas in Mexico? All have the potential to be recognized using a conservation policy tool called other effective area-based conservation measures, or OECMs. Together with protected areas – from Malaysia’s Taman Negara National Park to the Cerbère-Banyuls Marine Reserve in southern France – OECMs could help to achieve the 30% target. Devised in 2010 and defined in 2018, the OECM tool is little known outside specialist circles. Less than 1% of the world’s land and

<https://www.nature.com/articles/d41586-021-02041-4>

OECMs are not planned to replace or be PAs!



Other Effective Area-based Conservation Measures



The recognition of an area as an OECM aims to “...achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values (CBD, 2018).”

Aim of the work

We aim to identify areas suitable for OECMs in European islands by employing an analytical geographical approach based on the IUCN framework.

Can the proposed OECMs support current EU strategies and policies?

How many species and habitats would be further protected by OECMS?

Which human pressures located within potential OECMs?

Identifying potential OECMs

The IUCN’s three-step process was followed:

Step 1: Screening of proposed OECMs

- Criterion 1: The site is not a protected area.
- Criterion 2: There is a reasonable likelihood that site supports important biodiversity value.



Step 2: Consent for full assessment

- Criterion related to the consent of governing authorities and indigenous people to carry out full assessment



Step 3: Full assessment

- Criterion 1: The site is a geographically defined area.
- Criterion 2: The site is confirmed to support important biodiversity value.
- Criterion 3: Institutions or mechanisms exist to govern and manage the site.
- Criterion 4: Governance and management of the site achieve in-situ conservation.
- Criterion 5: In-situ conservation of important biodiversity value is expected to be for long term.
- Criterion 6: Governance and management arrangements address equity considerations.

OECMs site-level tool assessment process (Source: Jonas et al., 2023)

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Protected Areas (WDPA)
No. of Species & habitats (Directives 92/43/EEC and 2009/147/EC)
Landscape fragmentation and integrity indices
European Roadless Areas

Step 2: Consent for full assessment

- Criterion related to the consent of governing authorities and indigenous people to carry out full assessment



Criterion was not assessed

Step 3: Full assessment

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Key Biodiversity Areas (KBA)
High Nature Value Farmlands (HNVFs)

Identifying potential OECMs

Potential OECMs classification

Biodiversity Value

Through Natural Breaks Classification, the composite index was classified into three priority classes:

- **High:** areas with significant biodiversity value
- **Moderate:** areas with moderate biodiversity value
- **Low:** areas with lower biodiversity value

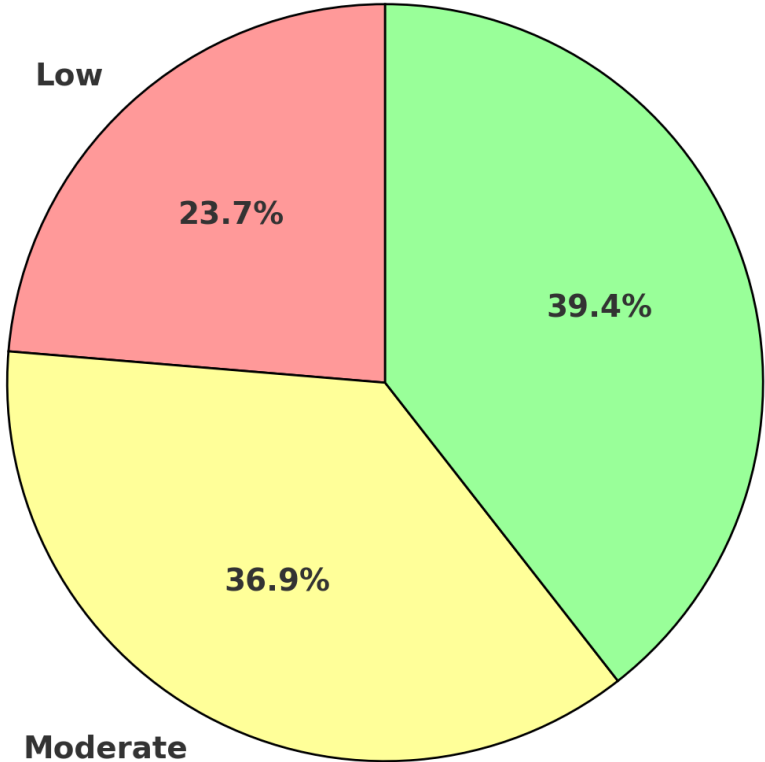
Spatial relations to existing PAs

Based on the number of adjacent PAs, potential OECMs classified as:

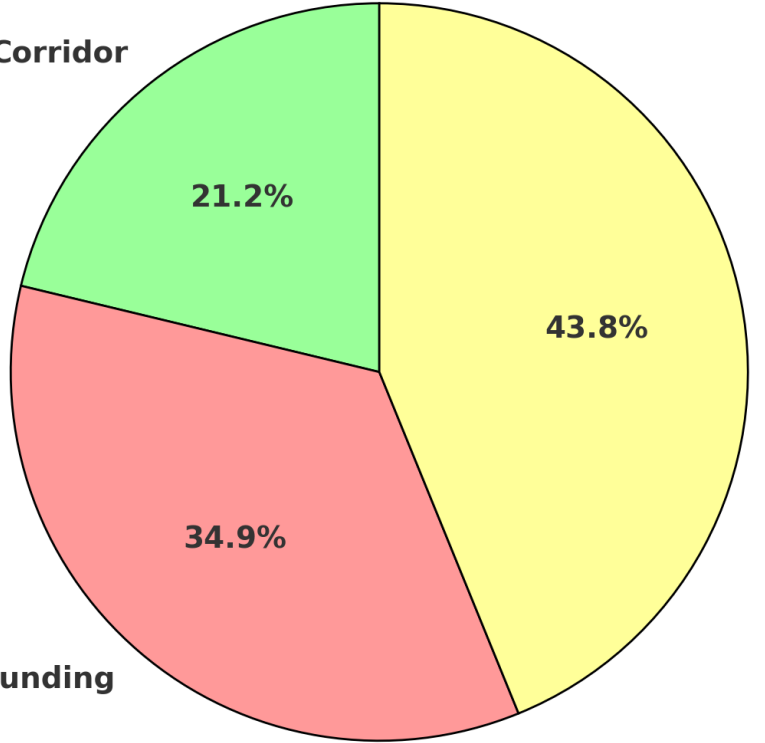
- **Surrounding OECMs:** areas that share a boundary with exactly one PA,
- **Corridor OECMs:** areas that are adjacent to two or more PAs, potentially serving as ecological linkages
- **Non-adjacent OECMs:** areas with no spatial contact with any existing PA.

Potential OECMs

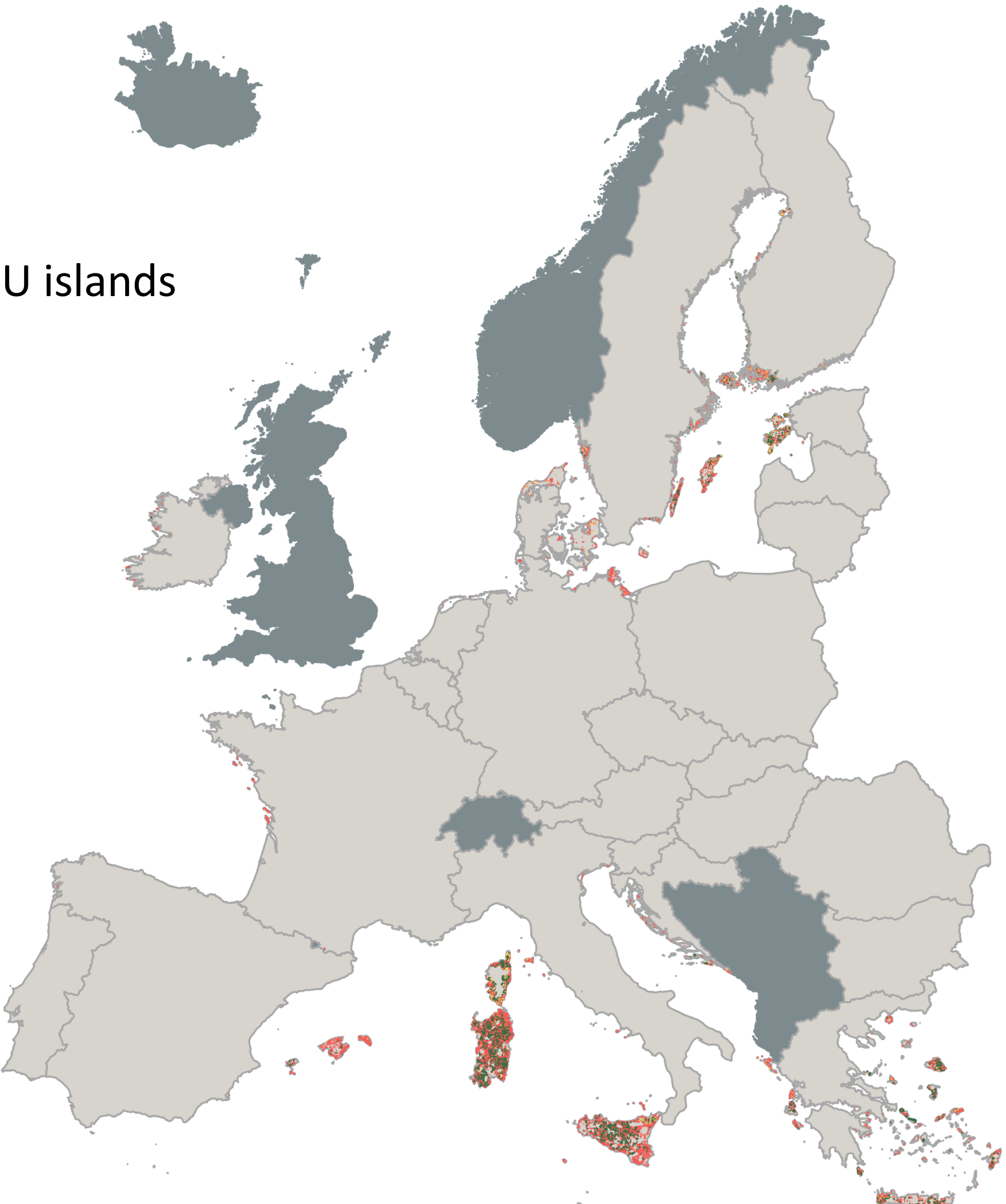
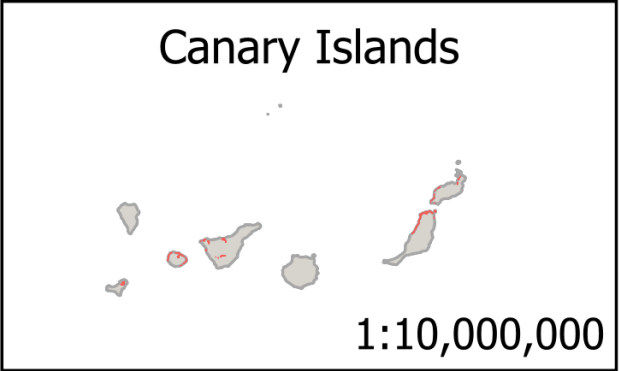
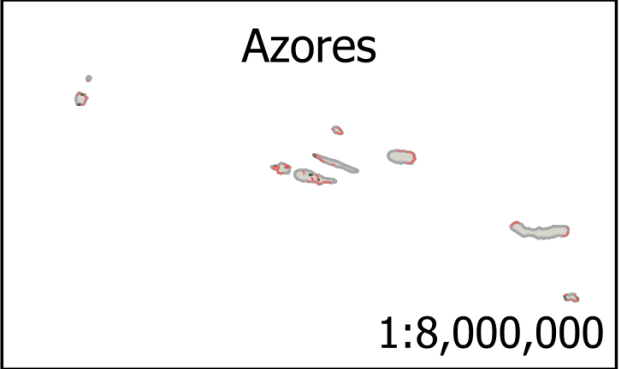
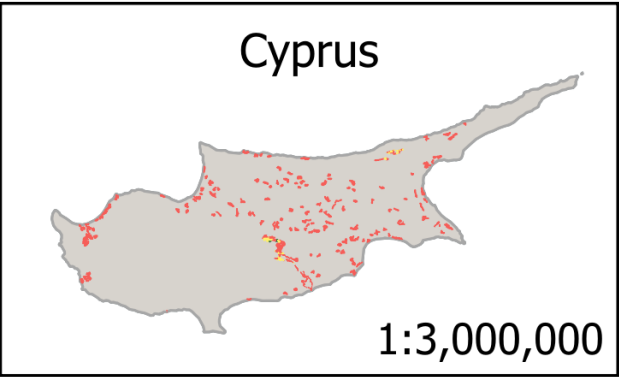
OECM Class



OECM Type

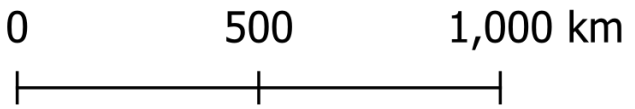


Potential OECMs cover ~15% of EU islands

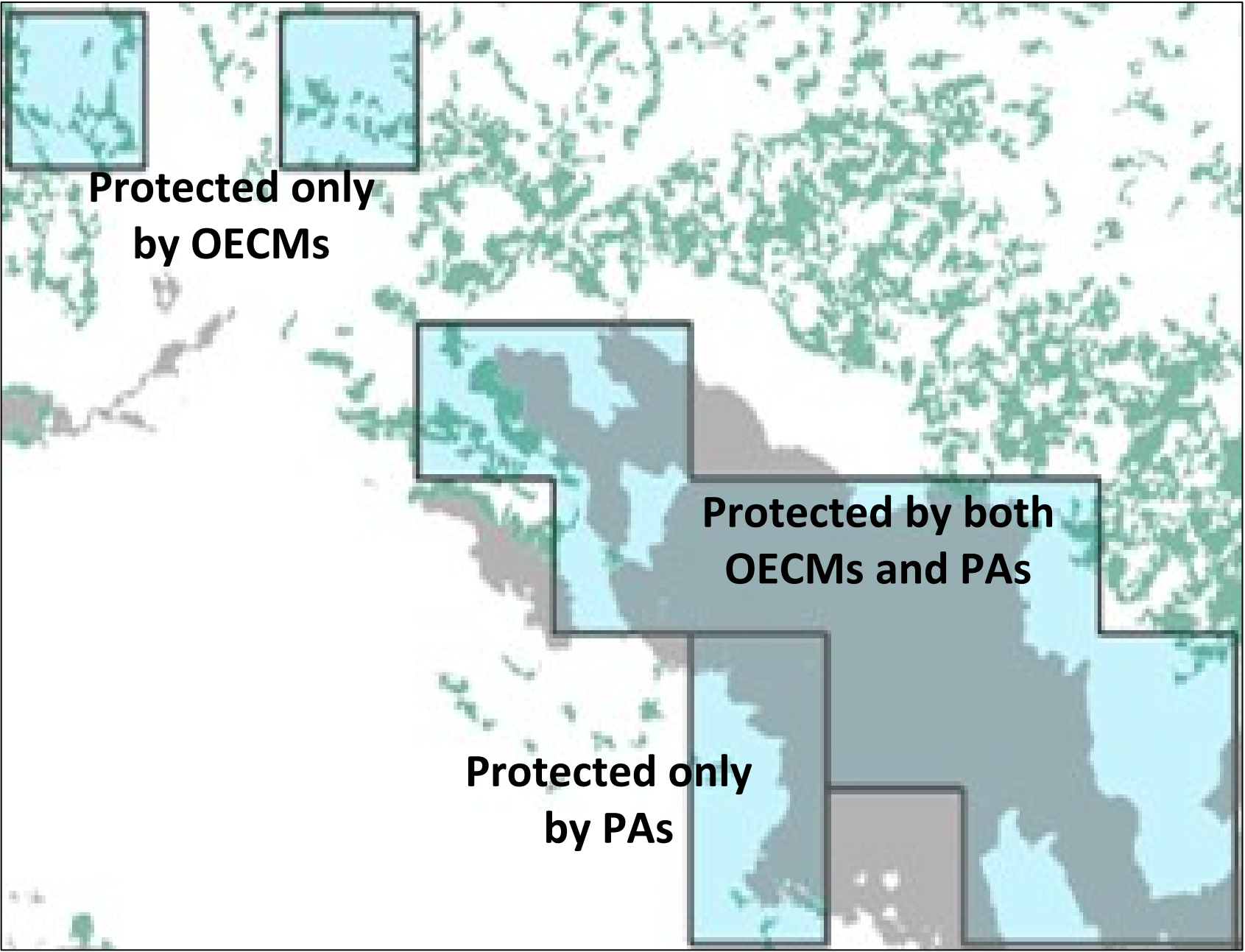


Potential OECMs (Level of Priority)

High Moderate Low



The added value of OECMs



In total, OECMS can protect:

- 475 species (64% of all species on islands)
- 181 habitat types (90% of habitat type on islands)
- 387 bird species (89% of bird species on islands)

In areas where PAs do not exist, OECMs can further protect:

- **62% of species** (460 species)
- **62% of habitat types** (116 habitat types)

 : Habitats and Birds directive data

 : Protected Areas

 : OECMs

Human activities within potential OECMs

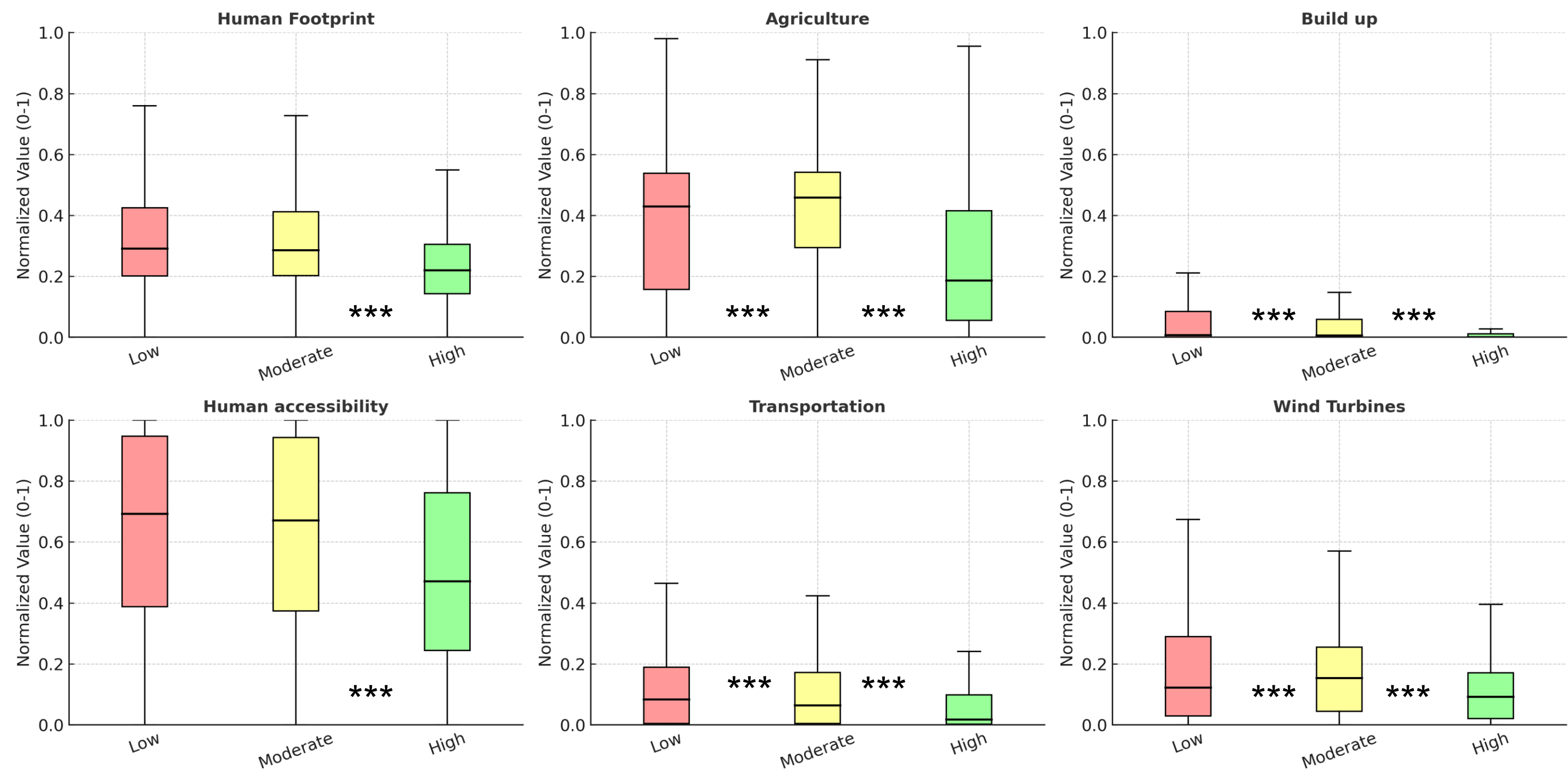
Global Human Modification (GHM) (Theobald et al. (2025), dataset along with Global Human Footprint Index (GHF) used as proxies to describe human pressures :

IUCN Threat Category
Agriculture (AG)
Build-up (BU)
Energy/mining* (EX)
Biological resources use (FR)
Human accessibility (HI)
Natural systems modifications (NS)
Pollution (PO)
Transportation/service corridors (TI)
Combined Human Pressure (AA)

1. The values of GHM and GHF were extracted for each potential OECMs
2. Assessed pressures with box plots and statistical tests.
3. Produced bivariate maps combining human pressure and biodiversity value

Energy/mining*: along with this dataset, we considered and the density of wind turbines

Human activities within potential OECMs



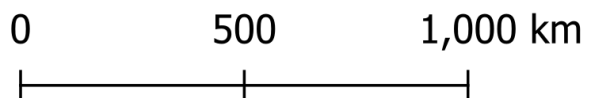
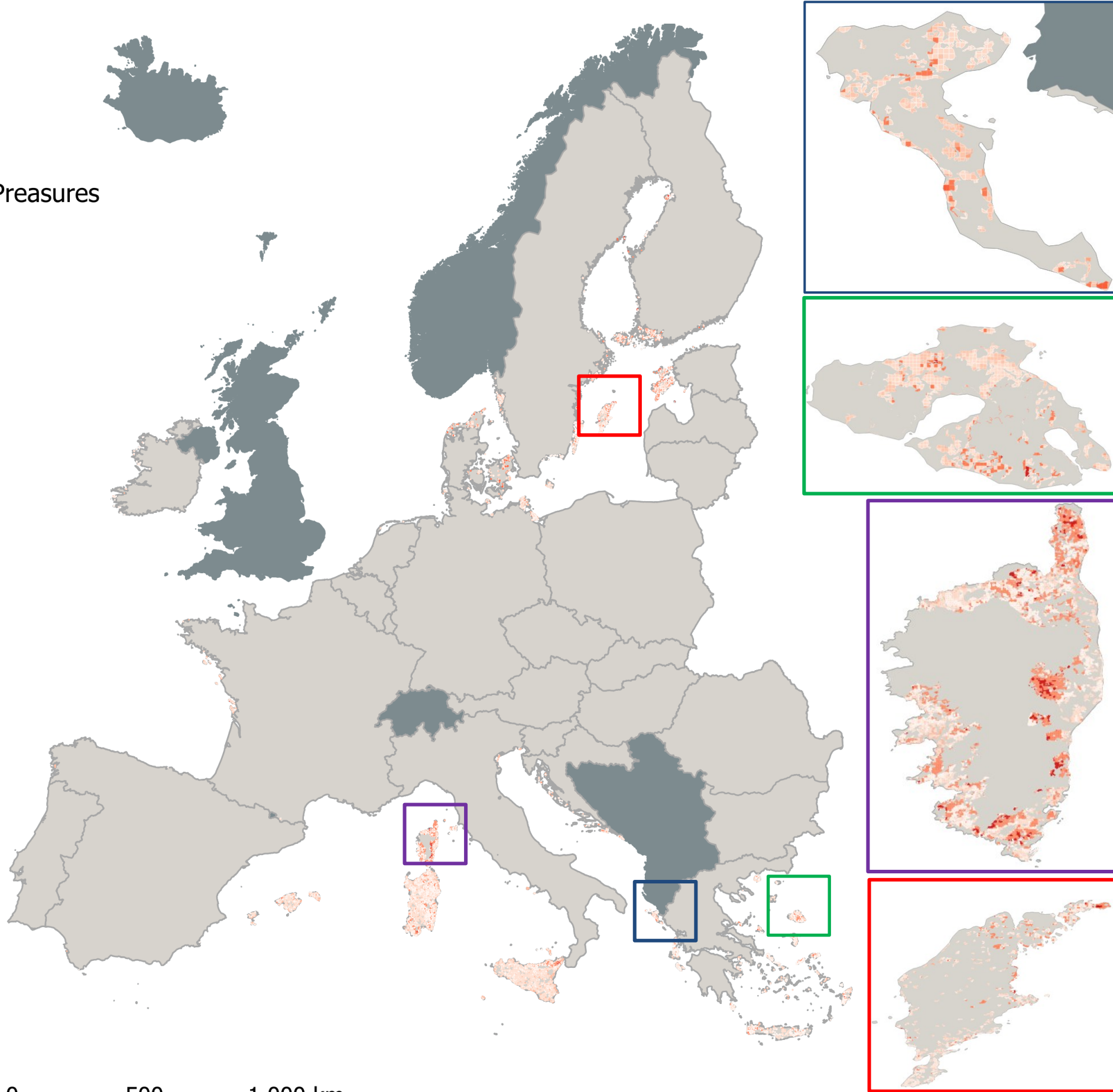
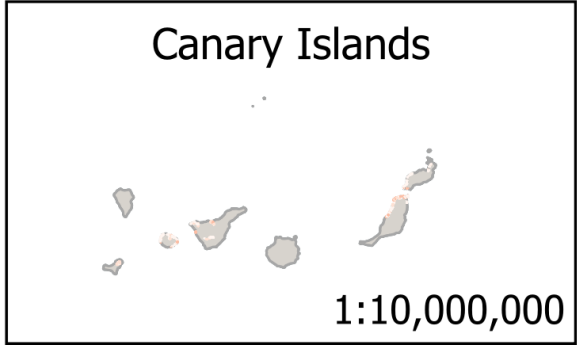
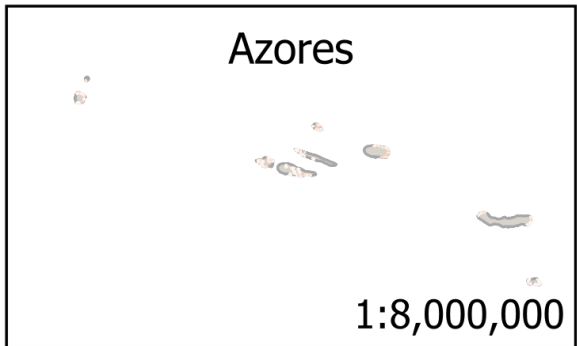
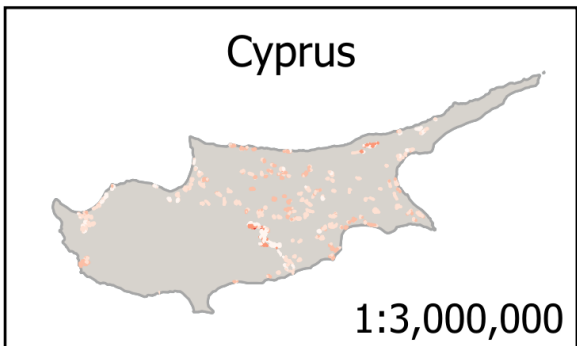
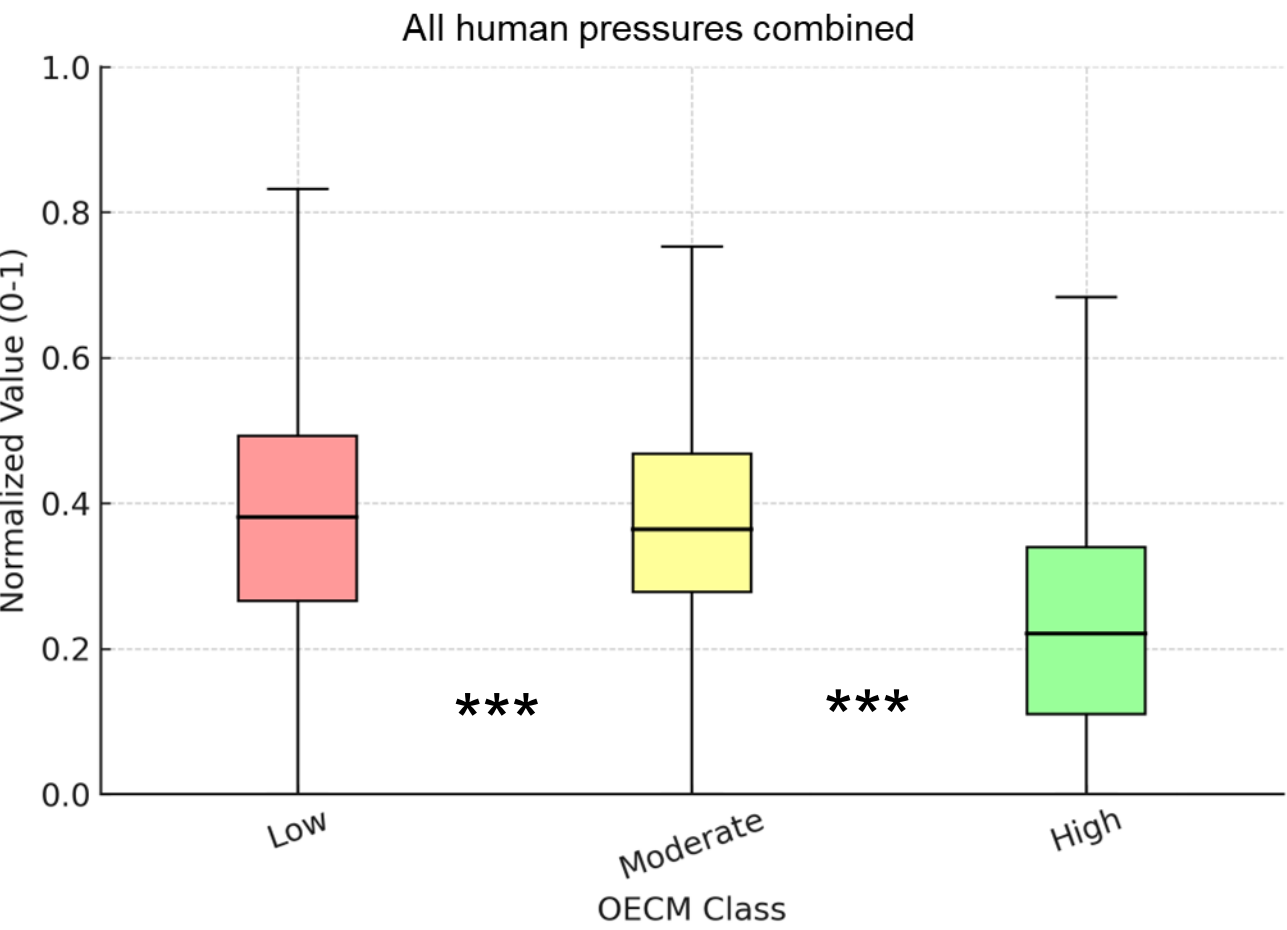
*** statistically significant differences

Human pressures within potential OECMs



Biodiversity Value VS Human Preasures

- Low BD - Low HP
- Low BD - Moderate HP
- Low BD - High HP
- Moderata BD - Low HP
- Moderate BD - Moderata HP
- Moderate BD - High HP
- High BD - Low HP
- High BD - Modera HP



*BD: Biodiversity Value
**HP: Human Preasures

Contribution to EU strategies and policies



- ✓ Direct link with the EDG pillar *"Preserving and restoring ecosystem biodiversity"*
- ✓ Direct link with EU 2030 Biodiversity strategy and New Restoration Regulation



- 1) High and moderate priority sites dominate, showing strong ecological value across islands.
- 2) Enhancing ecological corridors, protecting high-diversity landscapes, and supporting the 30% land protection target.



- 3) OECMs complement Natura 2000 & PAs contributing to a coherent Trans-European Nature Network as the concept has been strengthened by New Restoration Regulation and EU Biodiversity

Final remarks

Identifying novel areas that have biodiversity value and fall within a management scheme is a crucial step towards the expansion of our ongoing conservation efforts beyond protected areas especially in areas where multiple human activities exist.

- The identified potential OECMs cover 15% of EU island: **new land that can be considered as an additional area** when effectively managed, it can synergistically enhance the conservation status of the protected area.
- Data challenges related not only with biodiversity data but also with **information related to the governance/management regime of the areas.**
- **New development plans and increased human pressure could set at risk the effectiveness of OECMs.**
- **Implementation requires coordinated EU, national, and local action, with support for governance, management, and community awareness**



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