

## **Measuring, Modelling and Selecting Biodiversity Conservation Areas Under Climatic and Socioeconomic Challenges**

### **PROGRAMME**

#### **Day 1 19th of July**

- Biodiversity dimensions, metrics and spatial patterns
- Ecological processes and ecosystem services
- Threats to biodiversity
- Tools for and foundations of biodiversity conservation and prioritization
- Effectiveness analysis of protected areas: the climate change challenge

Practical: bioclimatic niche modelling

#### **Day 2 20th of July**

- Principles of optimization: integer programming and algorithmic complexity
- Prioritization models for protected area selection and design
- Ecological representativeness and persistence
- The *SLOSS* debate and geometrical properties of protected areas
- Spatial connectivity patterns: spatial and temporal, structural vs functional

Practical: area prioritization software in conservation planning (*Marxan* and *MulTyLink*)

# UÉVORA Summer School'21

## Day 3 21st of July

- Climate change and analytic uncertainty: general rules of thumb to handle them
- Uncertainty analysis: sensitivity, *ensemble* and *info-gap*
- Geographical, temporal and taxonomical extent and resolution
- Global biodiversity treaties (the CBD's Aichi targets, the UN Developmental Sustainability Goals and the UN Program for Reduction of Emissions through Deforestation and forest Degradation, *REDD+*, the European Green Deal and the European Biodiversity Strategy for 2030)
- Progress metrics

Practical: area prioritization software in conservation planning (*Zonation*)

## Day 4 22nd of July

- Biodiversity value functions (*Target-based* and *benefit*)
- Functional biodiversity and ecosystems services
- Economic indices in conservation planning
- Reactive and proactive paradigms in conservation planning (the *MaxGain* and *MinLoss* models)
- Conservation outside protected areas (*land sharing vs land sparing*, tools for spatial planning and compensatory measures)
- Climatic corridors

Practical: area prioritization software in conservation planning (*iC5*)

## Day 5 23rd of July

- Climatic refugia and abiotic proxies for biodiversity functioning
- The human footprint and habitat quality indices
- Dynamical models in area prioritization (concepts and examples)
- High performance computing

Practical: general applications to define