

## FEPS / OBIS / OTGA / SEF Training Course:

### Marine Species Distribution Modeling

12 - 16 March 2018, Ostend, Belgium



#### Overview

The training course Marine Species Distribution Modeling covers the background knowledge on marine biogeography, and the technical aspects needed to develop Species Distribution Models. Students will be trained in the basics of statistical modeling and guided through the modeling phases: compile distribution data from open access databases (e.g. OBIS) and environmental information from publically available ecological data layers using Geographic Information Systems, make informed decisions on parameter settings and select the best methods for developing distribution models, forecast distributions under different Climate Change scenarios, validate models and incorporate results in scientific manuscripts and technical reports.

The course includes theoretical lectures and hands-on exercises using predominantly case studies of marine macroalgae. Students are encouraged to bring their own datasets.

#### Learning Outcomes

- Understand distributions of marine organism and predict shifts in response to Climate Change.
- Develop skills for taking the best decisions and applying the correct statistical tools needed for Species Distribution Modeling (SDM).
- Being able to discuss the results of SDM into scientific manuscripts and technical reports, and defend them to a wide audience.
- Understand the strengths and limitations when applying SDM to real cases.
- Recognize the importance of good practice in Species Distribution Modeling

#### Course Topics

- Marine biogeographical distributions and niche modeling.
- Niche concepts: what niche is being modeled?
- Basis of Statistical Distribution Modeling.
- Definition of correlative and mechanistic SDMs.
- Desired properties, modeling phases & decisions, *the recipe*.
- Introduction to GIS and distribution data mining.
- Modeling methods (e.g. Bioclim, GLM, Maxent, boosted tree regression)
- Equilibrium assumption, transferability and forecasting.
- How to write an article/oral presentation using SDMs.

#### Target Audience

- Marine researchers and postgraduate students (MSc and PhD students) with particular interest in macroalgae or benthic organisms;
- NOTE: priority will be given to participants originating from Europe and / or involved in European marine research projects. UNESCO is committed to promote gender equality. Therefore, applications from women are strongly encouraged.

#### Course Pre-requisites

- Basic knowledge on Ecology & Statistics
- Need to bring own laptop
- Working knowledge of English

#### Course dates:

12 – 16 March 2018

#### Duration: 5 working days

(~ 30 hours classroom sessions plus eventual pre course assignments)

#### Course Venue:

UNESCO/IOC Project Office for IODE,  
Oostende, BELGIUM

#### Lecturers:

Brezo Martínez (URJC, Spain)  
Jorge Assis (UAIG, Portugal)  
Francisco Arenas (CIIMAR, UP, Portugal)  
Samuel Bosch (IOC/IODE/OBIS, Belgium)  
Olivier De Clerck (UGent, Belgium)

#### Period for Applications:

6 December 2017 – 14 January 2018

#### Application process:

Please fill the **online application form**:  
<http://bit.ly/2ABlgE2>

All information available on the IOC  
Website on

<http://www.ioc-unesco.org/MSDM>

#### and how to apply:

<http://bit.ly/2ACZY9r>

No tuition fee applies. A limited  
number of fellowships is available.

#### In case of questions contact:

OTGA Coordinator: **Claudia Delgado**  
([c.delgado@unesco.org](mailto:c.delgado@unesco.org))

#### Useful sites:

- [www.ioc-cd.org](http://www.ioc-cd.org)
- [www.iode.org](http://www.iode.org)
- [www.oceanteacher.org](http://www.oceanteacher.org)
- [www.iobis.org](http://www.iobis.org)
- [www.feps-algae.org](http://www.feps-algae.org)
- [www.sefalgas.org](http://www.sefalgas.org)
- [www.oceanexpert.net](http://www.oceanexpert.net)