

## 25225 - Management and conservation of flora and fauna

### Syllabus Information

**Academic year:** 2023/24

**Subject:** 25225 - Management and conservation of flora and fauna

**Faculty / School:** 201 - Escuela Politécnica Superior

**Degree:** 571 - Degree in Environmental Sciences

**ECTS:** 6.0

**Year:** 3

**Semester:** Second Four-month period

**Subject type:** Compulsory

**Module:**

### 1. General information

The objectives of the subject are:

- To offer a vision of the process of extinction of populations and species in the present time, examining the main anthropogenic and natural threats.
- To provide a historical perspective on the conservation of the Spanish flora and fauna and to draw a weighted overview of endangered species by taxonomic groups.
- To provide knowledge on in situ and ex situ conservation programs for species, as well as on legislative measures adopted for their protection.
- To raise awareness of the need to conserve the Iberian fauna and flora.
- To know the research techniques and applications for the management and conservation of endangered species of flora and fauna

These approaches and objectives are aligned with the Sustainable Development Goals (SDGs) of the 2030 Agenda of United Nations (<https://www.un.org/sustainabledevelopment/es/>), specifically, the learning activities planned in this subject will contribute to the achievement of Objective 4.7 of Goal 4, Objective 5.5 of Goal 5, Objective 13.3 of Goal 13 and 15.1, 15.4 and 15.5 of Goal 15.

### 2. Learning results

- Explain and clearly relate the fundamental concepts, models and theories implicit in the management and conservation of flora and fauna
- Develop criteria for the definition of the objectives of a research, valuing the guidance received for the planning and realization of the work, promoting dialogue, critical spirit and the ability to integrate in a work team.
- Present and support such research in public.
- Know how to integrate practical and theoretical knowledge of floristic and faunistic management and conservation with each other, and be able to extrapolate this knowledge to other areas of knowledge .
- Know the methods and tools to identify, analyse and solve cases of management and conservation of endangered species of flora and fauna and organisms of special interest.
- Understand and know how to apply in situ and ex situ conservation methodologies in plants and animals.

### 3. Syllabus

#### Theory program

**INTRODUCTION AND GENERAL CONCEPTS:** Species conservation. Conservation biology. Conservation in situ and ex situ. International, Spanish and regional legislative framework. Red Books. IUCN. Biodiversity. Demographics and population dynamics. Dynamics of small populations. Metapopulations. Population genetics applied to conservation.

**CONSERVATION AND MANAGEMENT OF PLANTS:** Plant biodiversity. Sources of scientific information: paleobotany, genetics and evolution, trees of life, phylogeny, molecular dating, geoclimatic changes, hybridization and speciation. Brief history of plant conservation. Assessment of their condition and threats. The Red Book and Atlas of the Spanish endangered flora. Flora conservation in Aragon

**WILDLIFE CONSERVATION AND MANAGEMENT:** Specific richness of the different groups. History of wildlife conservation in Spain

Conservation problems according to taxonomic groups. Threat factors. Red list analysis. Recovery and management plans in Spain and Aragon. Examples and cases of wildlife conservation and management.

#### Practices program.

Practice 1. Research seminar.

Practice 2. Sampling Methods.

Practice 3. Estimation of population size.

Practice 4. Spatial distribution and demographic census.

Practice 5. Characterization of biological diversity.

Practices 6-8. Seminars: flora and fauna management and conservation cases.

Practice 9. Floristic inventory field trip

Practice 10. Field trip Abiego-Ainsa-Revilla.

### **Research, Reports and Seminars.**

Production of a practical seminar-type work: topic to be researched and developed by the students within the framework of reference of the subject objectives. Practices 1, 6-8.

## **4. Academic activities**

**Master classes:** 30 hours

Sessions in which the contents of the subject are explained.

**Practices in the field:** 14 hours

Field practice in natural areas with endangered species management programs, or conservation centres and management of endangered flora and fauna. Two field trips.

**Classroom Practices, Research, Reports and Seminars:** 16 hours

Classroom practice and production of a practical seminar-type work: topic to be investigated and developed by the students within the framework of the subject objectives.

## **5. Assessment system**

Global face-to-face test at the end of the semester, which will consist of:

### **Theoretical section.**

Written test on basic knowledge of flora and fauna management and conservation. It may consist of questions requiring short answers (limited-response tests) or requiring a broad development of the topic (essay or free and open response tests), or of multiple-choice questions. Percentage in the final grade: 60%.

### **Practical section.**

1.-Written test with problems and development questions in which the student will confirm what they has learned in the practical sessions and in the field trips. Percentage in the final grade: 20%.

2.-Preparation of a report, presentation and public defence of a practical work on a topic related to the Management and Conservation of Flora or Fauna: Students will select topics related to the management and conservation of flora and fauna. The report will be done individually or in pairs. This report should be prepared following the guidelines and the presentation format that will be indicated in practice 1. The work will be presented and defended in seminar-type sessions, where the authors will have to argue and discuss their management strategies. The time available for the presentation and defence of the topic during the seminar sessions will be 15-20 minutes. Percentage in the final grade: 15%.

3.- Preparation of a report, individually or in groups, of the practice 9: Floristic inventory. Percentage in the final grade: 5%.

Evaluation activities 1, 2 and 3 may be carried out in practical sessions throughout the term. If this is not the case or students have not passed these activities, they will be entitled to the global test.

### **Calculation of the Final Grade, CF:**

$CF = 60\% \text{ theoretical part} + 40\% \text{ practical part}$

If the minimum requirements are not met in the evaluation activities of the theoretical part (5 points out of 10) and the practical part (5 points out of 10), the subject will not be considered passed, even if the final grade, CF, according to the weighted average is equal to or higher than 5. So, in that case, if:

CF is  $\geq 4$ , the final grade will be: Fail, 4.

CF  $< 4$ , the final grade will be: Fail, CF.

### **Success rate:**

2019/2020: 91.18%

2020/2021: 74.29%

2021/2022: 70.00%