25225 - Management and conservation of flora and fauna

Información del Plan Docente

Academic Year	2017/18
Faculty / School	201 - Escuela Politécnica Superior
Degree	277 - Degree in Environmental Sciences
ECTS	6.0
Year	3
Semester	Second Four-month period
Subject Type	Compulsory
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

This subject is offered in the English Friendly form

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

Theory classes:
Theory sessions consist of participatory lectures. Teacher will explain concepts promoting students participation and interest by the subject.
Practice classes:

25225 - Management and conservation of flora and fauna

Practice sessions will have two formats:
1) Fieldwork in natural areas with management or recovery programs of endangered species. As also flora and fauna conservation centers. 1 to 2 field trips. The aim of these practices is to conduct an in situ examination of the conservational problems of endangered species, to know and discuss management strategies with those responsible for those actions and to develop critical thinking.
2) Class practical sessions where basic knowledge and principles of practical conservation will be given to complement the field trips. Also a brief endangerment species seminar will be given by students.

5.2.Learning tasks

Theory.
30 lectures (50 minutes each) according the EPS calendar.
Practices.
Fieldwork in natural areas with management programs of endangered species, or centers of flora and fauna conservation programs. 1 to 2 field trips with a duration of 10-20 hours (depending on the number of field trips).
Classroom practices and writing and exposition of a short seminar by students in the framework of the objectives of the course (to complete 30 hours of practice).

5.3.Syllabus

Theory Program

A) INTRODUCTION AND GENERAL CONCEPTS

. Wildlife conservation. Interests and action framework. Conservation biology: empirical context and the methods it entails.

. The basics of biodiversity. Levels of complexity. Brief look at its geographic guidelines. Basics of biogeography.

. Historic look of the extinction of species. Colonization. Present causes of extinction and rarefication, dynamics and pace and of species.

. The dynamics of small populations. Genetic characterization. Population genetics. Genetic drift. Hybridization. Metapopulations. The minimum viable population posible.

. The practice of conservation. Spatial conservation in comparison with wildlife conservation. In situ and ex situo conservation. International, Spanish and autonomous regional legislative framework. The ICUN Red List. Plans of action for the recuperation species.

B) PLANT CONSERVATION AND MANGEMENT

. Brief history of plant conservation. European regulations. The Red List and the Atlas of Spanish threatened flora. The decentralization of management: competition and initiatives of Autonomic Regions.

. Conservation of flora in Spain. Evaluating its state and threats. Case studies: micro-reserves in Valencia, Sierra Nevada, and threatened flora in the Balearic and Canary Islands.

25225 - Management and conservation of flora and fauna

. Flora conservation in Aragon: Catalogue of threatened plants. Evaluation of their state and plans of protection and recuperation. Case studies: Pyrenean endemisms, plants of the steppes/grasslands.

C) FAUNA MANAGEMENT AND CONSERVATION

. Specific diverity of different groups. History of wildlife conservation in Spain.

. Issues in the conservation of invertebrates. Invertebrates t hreat factors .

. Analysis of the list of threatened Spanish invertebrates. Diversity and conservation.

. Issues in the conservation of vertebrates. Specific threat factors. Legislation on vertebrates.

. Examples and cases of conservation and management of the main groups of vertebrates: Amphibians, Reptiles, Birds and Mammals.

Practices Program

Practice 0. ¿what is a threatened species seminar?

Practice 1. Wildlife sampling methods.

Practice 2. Population size estimation.

Practice 3. Spatial distribution.

Practice 4. Biodiverstiy characterization.

Practices 5-8. Seminars.

Field Practice 9. Botanic inventary.

25225 - Management and conservation of flora and fauna

Field Practice 10. Abiego-Ainsa-Revilla.

Fiedl Practice 11. Reserva Natural Dirigida Galachos y Sotos del Ebro

Seminar:

The student or group of students will select a species of flora or fauna that is in some category of threat in the Iberian Peninsula and the work (report and defense) will be made up of at least the following parts:

* Systematic position (Kingdom/Division-Phylum/Class/Order/Family/Genus/Species)

* Synonyms

* Infraspecific taxa

* Number of species of the genus in the world

* Number of species of the genus in the Iberian Peninsula and the Balearic Islands

* Number of species of the genus in Aragon

* Number of genera of the family in the world

* Number of genera of the family in the Iberian Peninsula and the Balearic Islands

* Number of genera of the family in Aragon

* Morphological description of the species

* Area of distribution in the world, provinces of Spain and Aragon

* Number of populations and individuals

* Reproductive biology

* Habitat

25225 - Management and conservation of flora and fauna

* Cataloguing of conservation status in the General Council of Aragon and the Government of Spain

* IUCN Category in Spain. Specify points

* Threat factors

* Existing types of measures for protection/management/recovery (specific plans and protected spaces included in that) and appropriate proposals. Legislation of the General Council of Aragon (BOA, Official Aragon Bulletin).

5.4.Course planning and calendar

Classes, tutorials and examinations will follow the academic calendar of the University of Zaragoza and the Escuela Politecnica Superior (EPS).
All information of the subject will be presented on the first day of class each year, and upload to the ADD.

Teacher's material, issues related to the subject, practice guides and other information relevant for the lecture will be published in ADD.

5.5.Bibliography and recommended resources

BB	Atlas y libro rojo de la flora vascular amenazada de España : taxones prioritarios / [editores y coordinación científica del proyecto, Ángel Bañares Baudet ... (et al.)] . Madrid : Tragsa : Ministerio de Medio Ambiente, 2003
BB	Especies exóticas invasoras : diagnóstico y bases para la prevención y el manejo / autores, Laura Capdevila Argüelles ... [et al.] . Madrid : Organismo Autónomo Parques Nacionales, D.L. 2006
BB	La diversidad biológica de España / coordinadores- editores, F.D. Pineda [et al.] . Madrid : Prentice Hall, D.L. 2002
BB	Primack, Richard B.. Essentials of conservation biology / Richard B. Primack . 6th ed. Sunderland (Massachusetts) : Sinauer Associates, cop. 2014
BB	Primack, Richard B.. Introducción a la biología de la conservación / Richard B. Primack y Joandomènec Ros . Barcelona : Ariel, D.L. 2002
BC	Atlas de las aves reproductoras de España / realizado por la Sociedad Española de Ornitología (SEO-Birdlife) ; editores Ramón Martí y Juan Carlos del Moral. . - 1ª reimpr. Madrid : Organismo Autónomo de Parques Nacionales, 2004
BC	Atlas de las plantas alóctonas invasoras en España / [editores y coordinación científica del proyecto] Mario Sanz Elorza,

Universidad Zaragoza

25225 - Management and conservation of flora and fauna

	Elías D. Dana Sánchez y Eduardo Sobrino Vesperinas . Madrid : Ministerio de Medio Ambiente, Organismo Autónomo Parque Nacionales, 2004
BC	Atlas de los mamíferos terrestres de España / Dirección General de Conservación de la Naturaleza, Ministerio de Medio Ambiente, Sociedad Española para la Conservación y Estudio de los Mamíferos (SECEM), Sociedad Española para la Conservación y Estudio de los Murciélagos ; L. Javier Palomo y Julio Gisbert (editores) . Madrid : Organismo Autónomo de Parques Nacionales, 2002
BC	Atlas y libro rojo de los anfibios y reptiles de España / [editores, J. M. Pleguezuelos, R. Márquez, M. Lizana ; coordinador del atlas, V. Pérez Mellado ; coordinadores del libro rojo, R. Márquez y M. Lizana] . Madrid : Organismo Autónomo de Parques Nacionales, 2002
BC	Baskin, Y. (1997). The work of nature. How the diversity of life sustains us. Washington: Island Press
BC	Caughley, G., Gunn, A. (1996). Conservation biology in theory and practice. Massachusetts: Blackwell Science
BC	Devesa Alcaraz, Juan Antonio. Especies vegetales protegidas en España : plantas vasculares (Península Ibérica y Baleares) / por Juan Antonio Devesa Alcaraz, Ana Ortega Olivencia; colaboradores Josefa López Martínez, Tomás Rodríguez Riaño. Madrid : Ministerio de Medio Ambiente, Organismo Autónomo de Parques Nacionales, D.L. 2004
BC	Estrategia española para la conservación y el uso sostenible de la diversidad biológica . [1a. ed.] [Madrid] : Centro de Publicaciones, Ministerio de Medio Ambiente, 1999
BC	Fiedler, P.L., Jain, S.K. (2013). Conservation biology: the theory and practice of nature conservation, preservation and management. Springer
BC	Galante, Eduardo.. Los artrópodos de la "Directiva Hábitat" en España / Eduardo Galante y José R. Verdú. . Madrid : Organismo Autónomo Parques Nacionales, D.L. 2000.
BC	Given, D.R. (1994). Principles and practice of plant conservation. London: Chapman&Hall
BC	Guía de invertebrados y peces marinos

25225 - Management and conservation of flora and fauna

	protegidos por la legislación nacional e internacional / editores José Templado y Marta Calvo ; director técnico Javier Pantoja . Madrid : Organismo Autónomo de Parques Nacionales, D.L. 2004
BC	Hunter, Malcolm L.. Fundamentals of conservation biology / Malcolm L. Hunter, J. Gibbs . 3rd ed. Malden, MA : Blackwell Publishing, 2007
BC	Jeffries, Michael J.. Biodiversity and conservation/ Michael J. Jeffries . 2ª ed. London: Routledge, 2005
BC	Libro de la flora vascular rara, endémica o amenazada de la Comunidad Valenciana / Antoni Aguilella Palasí ... [et al.] ; dirección y coordinación Emilio Laguna Lumbreras. València : Direcció General de Conservació del Medi Natural, 1994
BC	Libro rojo de las aves de España / [realizado por la Sociedad Española de Ornitología (SEO/Birdlife) ; Alberto Madroño, Cristina González y Juan Carlos Atienza (editores) . - 1ª ed. Madrid Organismo Autónomo Parques Nacionales, D. L. 200
BC	Libro rojo de los invertebrados de España / José R. Verdú , Eduardo Galante, editores . Madrid : Organismo Autónomo Parques Nacionales, 2006B. Complementaria
BC	Libro rojo de los vertebrados de España / Juan Carlos Blanco y José Luis González, editores . Madrid : ICONA, D.L. 1992
BC	Mace, G.M., Balmford, A., Ginsberg, R. (2009). Conservation in a changing world. Cambrigde: University Press
BC	Meffe, Gary K.. Principles of conservation biology / Gary K. Meffe, C. Ronald Carroll and contributors . 2nd ed. Sunderland, Massachusetts : Sinauer Associates, cop. 1997
BC	New, T.R. (1995). An Introduction to invertebrate conservation biology. Oxford: University Press
BC	Ramos, María Ángeles. Los invertebrados no insectos de la "Directiva Hábitat" en España / Mª Angeles Ramos, Dolores Bragado y José Fernández [Madrid] : Organismo Autónomo Parques Nacionales, D.L. 2001
BC	Soulé, M.E., Orians, G.H. (2001). Conservation biology:research priorities for the next decade. Washington: Island Press
BC	Spellerberg, I.F. (1996). Conservation biology. Essex: Longman/Pearson

25225 - Management and conservation of flora and fauna

	Education
BC	Spellerberg, I.F. (2013). Evaluation and assessment for conservation: ecological guidelines for determining priorities for nature conservation. London: Chapman & Hall
BC	Sutherland, J. (2008). Conservation science and action. Oxford: Blackwell Science
BC	Watson, R.T., Heywood, V.H., (ed)(1995). Global biodiversity assessment. Cambridge: University Press
BC	Wilson, Edward Osborne. La diversidad de la vida / Edward O. Wilson ; traducción castellana de Joandomènec Ros . Barcelona : Crítica, D.L. 1994

The updated recommended bibliography can be consulted in:
http://psfunizar7.unizar.es/br13/egAsignaturas.php?id=2186