

## **Course description**

**BB854: Species Conservation - a key element to achieving the UN Sustainable Development Goals**

# BB854: Species Conservation - a key element to achieving the UN Sustainable Development Goals

Study Board of Science

Teaching language: Danish or English depending on the teacher, but English if international students are enrolled  
EKA: N110044102  
Censorship: Second examiner: None  
Grading: Pass/Fail  
Offered in: Odense  
Offered in: Spring  
Level: Master's level course approved as PhD course

STADS ID (UVA): N110044101  
ECTS value: 5

Date of Approval: 06-10-2020

Duration: 1 semester

Version: Approved - active

## ▼ Comment

### Scheduled field trip

Please note that the course includes an excursion with stay at Danhostel Givskud Zoo for five days in spring. A small fee will be charged via a web pay link, that will cover the cost of meals during the excursion.

### Limited seats

The course has limited entry. The following criterias are taken into consideration when seats are assigned:

1. Students with the most ECTS from their master
2. Students who are accepted conditionally on the master
3. Students who follows master courses concurrent with their bachelor programme
4. BSc students

If the score is even lots are drawn.

The academic environment at the faculty of Science manages the prioritization and a waiting list is established and will then made aware from the faculty. The waiting list will not be transferred to the following year.

It is important to attend the first day of the course or inform the teacher, as there is a waiting list for the course.

## ▼ Entry requirements

The course cannot be followed by students who have passed BB837

## ▼ Academic preconditions

Students taking the course are expected to:

- Have knowledge of basic biology
- Be able to use Excel, Power Point and be open to learn during the course new open software tools.

Furthermore, it is recommended if the student has some basic knowledge in population biology and evolution.

## ▼ Participant limit

25

## ▼ Course introduction

The course aims to enable the student to understand the process of developing a Species Management Plan for a species at risk of extinction. Biodiversity loss is one of the major drivers of ecosystem change. Therefore it is imperative to prevent further species loss.

The class is directly aligned to support direct Target from the United Nations Sustainable Development Goals (SDGs) 14, 15, & 17 (i.e., conservation and sustainable use of life on land and below water and the development of global partnerships to achieve these goals).

In this intensive course, we will review: what is the 6th mass extinction and why it matters, what is biodiversity and how it has changed throughout the planet's history and how it compares to the current extinction rates and a brief introduction to the SDGs targets and multilateral agreements in which species conservation is at the core.

We will review different conservation approaches and tools to develop a Species Management Plan (SMP). Students in teams will develop an SMP for a selected threatened species. Concepts of the importance of considering species habitat, threats, and key stakeholders, together with the role of wild and zoo conservation biology, including genetic, demographic, and welfare, will be covered. For the SMP, teams will work on some key aspects, such as developing a Population Viability Analysis (PVA) to forecast species extinction risks and stakeholder analysis.

The course will consist of two lectures previous to the intensive five-day field course. We expect students to do some mandatory reading to gain some basic knowledge. The field course will take place at Givskud Zoo, with accommodation provided at Dan Hostel, in which students will directly learn from experts on ex-situ and in-situ conservation species management. Students are expected to work in teams for their SMP project; each group will develop the SMP for a threatened species. Each team will present their SMP, and we will evaluate each team presentation, including a debate on the importance of their SMP, its challenges, opportunities, and its significance to the SDGs.

The course builds on the knowledge acquired in the courses of Population and Evolution (BB512) and gives an academic basis for applying knowledge obtained in other topics in biology towards biodiversity conservation.

In relation to the competence profile of the degree, it is the explicit focus of the course to:

- Manage work and development situations, independently start up and go through with professional teamwork and take responsibility for one's own professional development and specialization.

Give skills to:

- Basic species and biodiversity concepts
- Introduction to SDGs focusing on Targets 14, 15 & 17
- Introduction to a Species Management Plan under the One Plan Approach (integrating in-situ & ex-situ conservation tools)
- Run a basic Population Viability Analyses using the R software
- Develop Stakeholder Analyses
- Introduction to the Convention on the International Trade of Endangered Species (CITES)
- Data management and visualization mainly in R & communication skills

Give knowledge and understanding of:

- The 6th principles of Decision Quality for species conservation.
- A basic review of the application of decision analyses tools for species conservation Understand the species and biodiversity concepts
- The species and biodiversity concepts
- The difference between current biodiversity extinction rates to the recorded during the Earth's 5th mass extinctions and the background rates.

Which are the main tools for species conservation.

The course gives an academic basis for conducting a master's project within conservation biology.

In relation to the competence profile of the degree it is the explicit focus of the course to provide:

- Competence to manage complex work situations that require new solutions at the interface of biology and policy, and to initiate and implement professional collaborations in the biology field and across other disciplines.
- Skills in mastering theories, methods, and technical terms within species conservation biology will allow students to plan scientific studies by creating new biological research results.
- Knowledge and understanding of the latest species conservation research, allowing students to reflect on concepts and methodologies within the field on a scientific basis.

## ▼ Expected learning outcome

The learning objective of the course is that the student demonstrates the ability to:

- Get to know and express the importance of key concepts in species conservation in light of the 14, 15 and 17 UN SDG's
- Explain the difference between mass and background extinction and be able to compare pre-existing extinction rates with the ones after the industrial revolution
- Be able to integrate demographic information for a simple Population Viability Analyses of a particular species, and understand the importance of the diversity of demographic patterns and genetic variability across taxa for the development of a species conservation
- Develop a basic analysis of the key Stakeholders around the problems that affect or benefit the conservation of a species and thus its population's viability
- Formulate a basic Species Management Plan by integrating the previous topics
- Get to know major conservation organizations and international conventions, with a special focus on CITES
- Explain why the conservation of a particular species is important in the general context of biodiversity conservation (i.e ecosystems services) and human economic Sustainability

## ▼ Content

The course contains the following main academic areas:

- Extinction
- Biodiversity
- Metapopulations and theory of Island biogeography
- Population Viability Analyses
- Stakeholder analysis
- Species Management plan (Challenges & Opportunities)
- Major conservation organizations, conventions and current conservation issues (IUCN, CITES etc.)
- Wildlife trade
- One Plan Approach of Conservation Planning (integration of in-situ and ex-situ conservation)

## ▼ Literature

See Blackboard for syllabus lists and additional literature references.

## ▼ Examination regulations

### ▼ Exam element a)

#### ▼ Timing

Spring

#### ▼ Tests

#### ▼ Oral Presentation

##### ▼ EKA

N110044102

##### ▼ Censorship

Second examiner: None

##### ▼ Grading

Pass/Fail

##### ▼ Identification

Student Identification Card

##### ▼ Language

Normally, the same as teaching language

##### ▼ Examination aids

To be announced during the course

##### ▼ ECTS value

5

##### ▼ Additional information

Final oral exam on general concepts (individual) and final presentation of team project.

The examination form for re-examination may be different from the exam form at the regular exam.

## ▼ Indicative number of lessons

50 hours per semester

## ▼ Teaching Method

The teaching activities result in an estimated indicative distribution of the work effort of an average student in the following way:

- Intro phase (lecture, class lectures) - Number of hours: 2
- Training phase: 48 hours, of which: Tutorial: 18 hours and other: 30 field work timer

The teaching combines traditional lectures with the Socratic method to promote and stimulate student's critical thinking. The class is designed to have a student-centered learning approach.

- Reading of key literature for the course topics (provided by lecturer).
- Previous to the class watch introductory videos for some of the topics to be covered (provided by lecturer).
- Tutorial on PVAs (provided by lecturer and TAs)
- Discussion in person or SKYPE with key policymakers, zoo managers, and scientist
- working on species conservation programs (arranged by the lecturer and TA).
- Research on the chosen species on relevant topics to develop a Species Management Plan. For example current and possible future threats, geographical distribution, IUCN status, and possible role in the ecosystem (This material will be obtained by the students in their teams).

## ▼ Teacher responsible

Name	E-mail	Department
Dalia Amor Conde	dalia@biology.sdu.dk	Biologisk Institut, Biodemography Unit, Interdisciplinary Centre on Population Dynamics - Four Faculties Affiliates

## ▼ Additional teachers

Name	E-mail	Department	City
Ana Rita da Silva	silva@biology.sdu.dk	Interdisciplinary Centre on Population Dynamics	
Johanna Stärk	johannas@biology.sdu.dk	Biologisk Institut, Biodemography Unit, Interdisciplinary Centre on Population Dynamics - Four Faculties Affiliates	

## ▼ Timetable

Show full time table

## ▼ Administrative Unit

Biologisk Institut

## ▼ Team at Registration & Legality

NAT

▼ Recommended course of study

Profile

Programme

Semester

Period

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