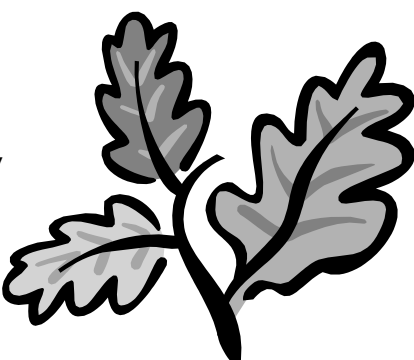
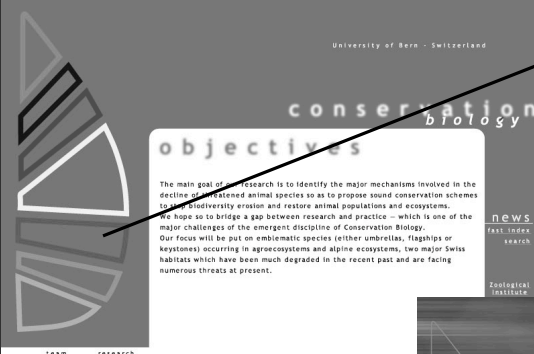


# Conservation Biology 2 Introduction

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www.conservation.unibe.ch





The main goal of research is to identify the major mechanisms involved in the decline of threatened animal species so as to propose sound conservation schemes to halt biodiversity erosion and restore animal populations and ecosystems. We hope so to bridge a gap between research and practice – which is one of the major challenges of the emergent discipline of Conservation Biology. Our focus will be put on emblematic species (either umbrellas, flagships or keystones) occurring in agroecosystems and alpine ecosystems, two major Swiss habitats which have been much degraded in the recent past and are facing numerous threats at present.

[www.conservation.unibe.ch](http://www.conservation.unibe.ch)

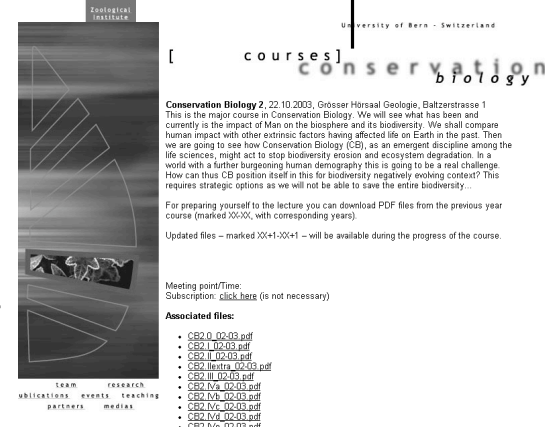
- Teaching
- Courses
- Conservation Biology 2

**Previous-year files available for lecture preparation (download: FBB or home, but only with ISDN)**

**Actualised files will be available only when chapter completed**

**Exam date mentioned**

Conservation Biology 2 (2004-05)



**Conservation Biology 2, 22.10.2003, Grosse Hörsaal Geologie, Baltzerstrasse 1**  
This is the major course in Conservation Biology. We will see what has been and currently is the impact of Man on the biosphere and its biodiversity. We shall compare human impact with other extrinsic factors having affected life on Earth in the past. Then we are going to see how Conservation Biology (CB), as an emergent discipline among the life sciences, might act to stop biodiversity erosion and ecosystem degradation. In a world with a further burgeoning human demography this is going to be a real challenge. How can this CB position itself in this biodiversity negatively evolving context? This requires strategic options as we will not be able to save the entire biodiversity...

For preparing yourself to the lecture you can download PDF files from the previous year course (marked XXXX, with corresponding years).

Updated files – marked XX+1-XX+1 – will be available during the progress of the course.

Meeting point/Time:  
Subscription: [click here](#) (if not necessary)

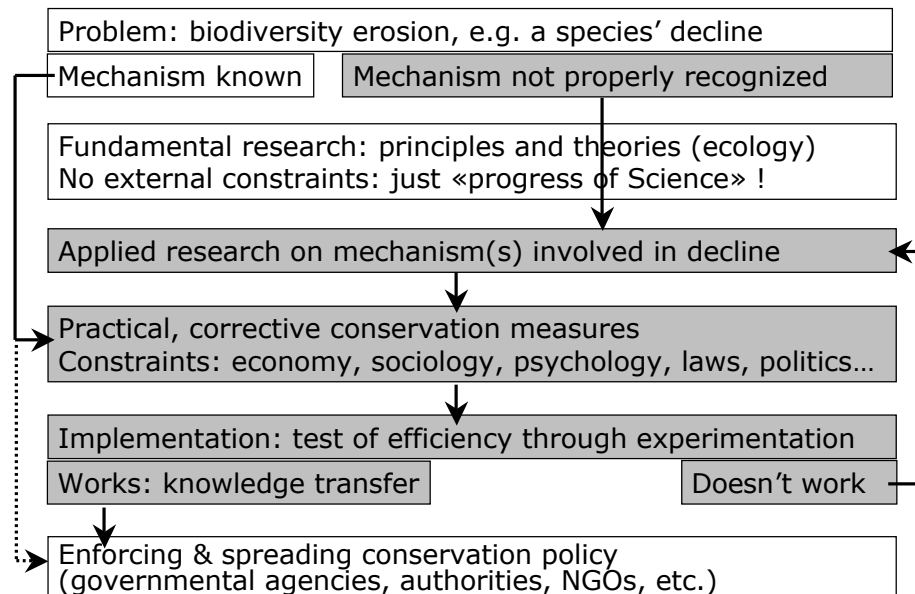
**Associated files:**

- CB2.0\_02-03.pdf
- CB2.1\_02-03.pdf
- CB2.2\_02-03.pdf
- CB2.lectra\_02-03.pdf
- CB2.3\_02-03.pdf
- CB2.4\_02-03.pdf
- CB2.5\_02-03.pdf
- CB2.6\_02-03.pdf
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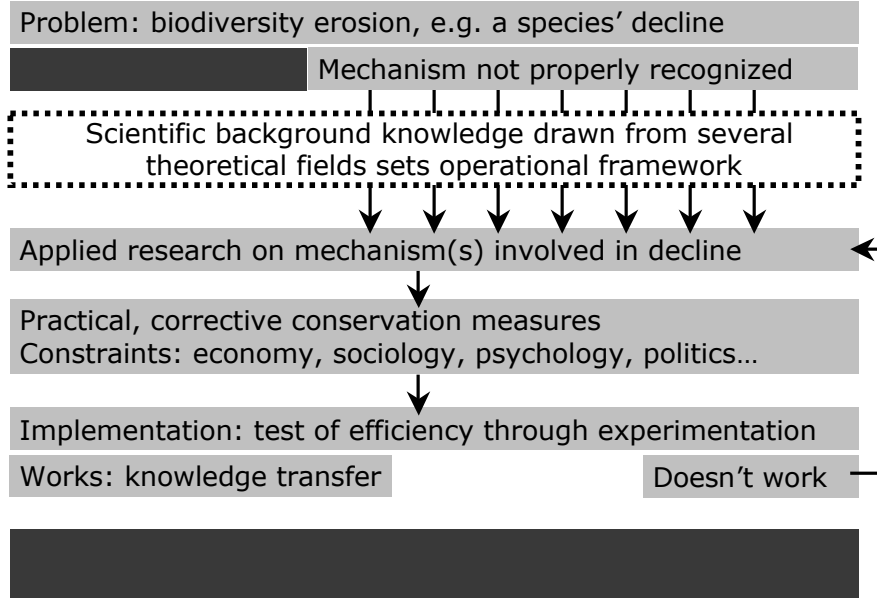
## «Conservation Biology»?

- Conservation Biology (CB), a new emergent discipline of Biological Sciences
  - California 1978: international conference on CB
  - Soule's book «Conservation Biology» (1982)
  - Rio 1992: 1st world environmental conference
  - UNIBE: first chair of CB in CH (July 2001)
- Comprehensive discipline at the interface between various fields
- «Science into practice and practice into science»
- Conservation = philosophical attitude & political action
- Biology = science

## CB: an integrative discipline



## The place and role of CB



Conservation Biology 2 (2004-05)

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## CB research vs. fundamental biological research

- Scientific methodology is mostly based on statistics
- CB research is no exception to that rule
- Yet, constraints in CB diverge from fundamental scientific disciplines:
  - $H_1$  = formulated research hypothesis
  - $H_0$  = null hypothesis (state of data if hypothesized pattern does not exist)
    - Type I error:  $H_0$  rejected whilst it is actually true  
–> distinctive pattern believed to exist, but this is not true = false positive result
    - Type II error:  $H_0$  not rejected whilst hypothesized pattern is real = ignoring the truth
- Fundamental science (seeks truth)
  - > type I error to be avoided
- Applied science (avoiding risks: ethics!)
  - > type I error is better
  - (–> principle of precaution or prevention)

Conservation Biology 2 (2004-05)

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## Organisation of main teaching in CB

- CB Course (2nd year study):
  - Ecological mechanisms involved in wild animal species declines (zoological institute!)
  - Approaches and solutions to stop biodiversity erosion (including examples for Swiss fauna)
- CB Excursions: knowledge about organisms
- CB Practicals (3rd year study):  
Field and lab methodologies and techniques in CB at UNIBE (aim: stopping biodiversity erosion and restoring endangered populations)
  - Praktikum für Anfänger  
(3 weeks in summer, June-August; zoologists after 2nd «Vordiplom», i.e. from 5th term only)
  - Praktikum für Fortgeschrittene  
(3-5 weeks, future diplomants in CB only)

## Overview of the course

Man as a factor  
of nature  
destruction

Man as a factor of  
nature  
restoration

- CB as a scientific discipline exists because of human impact upon the biosphere... Description of that actual human impact  
–> Current state of the planet and projections
- Human impact set in perspective: is it that catastrophic?  
–> What tells us the history of life on Earth...
- CB's task is immense > operational strategy at UNIBE  
–> Topic field of action for Conservation Biologists
- The single-species approach in CB  
–> lessons from population ecology
- Community & Landscape ecology in CB:  
–> lesson from community, ecosystem and landscape ecology
- Non ecological constraints & approaches in CB:  
«Conserving species, dealing with humans»  
–> economy, sociology, politics, law, psychology...

## A reference list: books used for the course

- **Textbooks in Conservation Biology**

- R. Primack.** 1998. Essentials of Conservation Biology. Sinauer. Second edition.
- G. Caughley & A. Gunn.** 1996. Conservation Biology in Theory and Practice. Blackwell.
- M. J. Jeffries.** 1997. Biodiversity and conservation. Routledge.
- M. L. Hunter.** 1996. Fundamentals of conservation biology. Blackwell.
- G. K. Meffe & C. R. Carroll.** 1997. Principles of conservation biology. Sinauer.
- W. J. Sutherland.** 1998. Conservation science and action. Blackwell.
- W. J. Sutherland.** 2000. The conservation handbook: research, management and policy. Blackwell.

## A reference list (continued)

- **General, including philosophical considerations about biodiversity**
  - E. O. Wilson.** 1988. Biodiversity. National Academy Press. Last printing 1999.
  - B. Groombridge & M. D. Jenkins.** 2000. Global biodiversity. Earth's living resources in the 21st century. Aventis Foundation.
- **General textbook in Ecology**
  - M. Begon, J. L. Harper & C. R. Townsend.** 1996. Ecology: individuals, populations and communities. Blackwell Science. Third edition.
- **Reference Atlas**
  - Bundesamt für Statistik.** 2001. Statistisches Jahrbuch der Schweiz 2001. Verlag NZZ, Zürich.
- **Human population growth**
  - L. R. Brown, G. Gardner & B. Halweil.** 2000. Beyond Malthus. Nineteen dimensions of the population challenge. Earthscan publications, London.

### **Some abbreviations**

- CB = Conservation Biology
- Mio = million
- Bio = billion (Milliard)
- y = year
- t = ton
- ha = hectare
- CH = Switzerland
- vs= versus (against, in opposition to...)