



UNIVERSITÀ DEGLI STUDI DI TORINO

ID

VP150_DIP_BIOS

Visiting Professor Program Academic year 2022/2023

TEACHING COMMITMENT: 24 hours

COURSE TITLE

**MODELLING ANIMAL MOVEMENT AND HABITAT SELECTION FOR
SUSTAINABILITY ANALYSIS OF CONSERVATION PROGRAMS**

TEACHING PERIOD

2nd term

SCIENTIFIC AREA

Zoology

LANGUAGE USED TO TEACH

Italian/English

COURSE SUMMARY

Statistical models for ecology and conservation: Introduction to ecological statistics - What is a model? - Basic concepts of statistical modelling applied to ecology and conservation - Models for data collected on individuals that cannot be individually identified: Introduction to species distribution models (SDM) and environmental suitability models - SDM models for presence-absence data - SDM models for presence-only data (MaxEnt) - The problem of imperfect detection - Single season occupancy models - Dynamic occupancy models - Introduction to abundance models (Royle Nichols and N-Mixture models) - Distance sampling - Population Viability Analysis - Introduction to Agent Based Models for spatial and temporal modelling of populations - Models for data on individually recognisable animals - Analysis of telemetry data on space use - Models for home-range estimation - Spatially explicit Capture Marking Recapture Models.

LEARNING OBJECTIVES

The course aims to provide students with the tools to interpret and create their statistical models of living organisms' spatial and temporal distribution applied to ecology and conservation.

TUTORSHIP ACTIVITIES

N/A

LAB ACTIVITIES

N/A

OTHER ACTIVITIES BESIDES THE COURSE

1 conference addressed to PhD students

VISITING PROFESSOR PROFILE

The lecturer's profile for the course "Modelling animal movement and habitat selection for sustainability analysis of conservation programmes" is that of a person experienced in the teaching of statistics. In particular, experience in teaching applications in the field of biology and conservation is required, including points such as models for data collected on individuals that cannot be identified individually, SDM models for presence-absence data, SDM models for presence-only data (MaxEnt), dynamic occupancy models, Population Viability Analysis, Agent-Based Models.

CONTACT PERSON AT THE DEPARTMENT

Prof.ssa Cristina Giacomini
cristina.giacomini@unito.it