

Biodiversity of Sand Dunes

Spring 2024

Teachers: Prof. Uri Shanas, Dr. Elli Groner

Assistants: Dr. Yonatan Mersman, Mariam Abd El Hai

Oral teaching: Every other week, 5-day expedition

This course is aimed in providing students with the experience of doing field work and learning how to assess nature into meaningful results and discussion. The expedition of this course will be over 5 days together with 3rd year Biology students from Haifa University.

The aim of this course is to provide the students with a hands-on experience in biodiversity. The world-wide sharp decline in biodiversity is a human made crisis that ecologists are trying to solve. Some of the important questions are: "What and how many species exist?"; "How do we evaluate the abundance and the richness of species?"; "How do we set priority regions for conservation based on biodiversity?" We will deal with these questions and others before, during and after sampling several taxonomic groups in the research area of the Arava institute. The students of this course will take part in a long-term monitoring research of a specific landscape unit in the Arava valley.

The students will practice sampling in a research plot (Samar sand dunes), by setting rodent traps, and pitfall traps for reptiles and invertebrates. The students will practice collection, handling, identification and recording wildlife. Every day after the morning and evening sessions, the students will work on sorting and analysing the collected data.

Duties:

Data collection will be performed collectively. Previous collected data will be handed. Each group will analyse the data and prepare a report in a format of a scientific paper.

Grade components:

Participation and attendance in class: 15%

Activity during expedition: 15%

Assignments and Quizzes 10%

Final paper: 60%

Literature:

1. Shanas U, Galyun Y, Alshamlih M, Cnaani J, Guscio D, Khoury F, Mittlera S, Nassar K, Shapira I, Simon D, Sultan H, Topel E and Ziv Y 2006. Reptile diversity and rodent community structure across a political border Biological conservation 132: 292 –299
2. Shanas U, Galyun Y, Alshamlih M, Cnaani J, Guscio D, Khoury F, Mittlera S, Nassar K, Shapira I, Simon D, Sultan H, Topel E and Ziv Y 2011 Landscape and a political border determine desert arthropods distribution Journal of Arid Environments 75: 284-289

Recommended reading:

1. The Diversity of Life. E. O. Wilson. New edition 1999. W.W. Norton & Company, Inc. N.Y., USA.
2. Yoccoz et al. (2001). Monitoring of biological diversity in space and time. TREE 16 (8): 446-452.

Course schedule:

Lesson	date	topic	Lecturer
L1	12-Feb	Introduction	Elli
L2	26-Feb	Evolution and taxonomy of animals	Elli
L3	11-Mar	Analysing data and excel	Elli
L4	25-Mar	Natural history of vertebrates, animal conservation	Oded Kainan
L5	08-Apr	Alpha and beta diversity and adaptation to sand	Elli
	14-Apr	Expedition	Uri
L6	06-May	Data processing	Elli
L7	12-May (Sunday)	How to write a paper	Elli