



Ecology of the Arava

Lecturers:

Noam Weiss – course coordinator (noamw@spni.org.il)

Dr Elli Groner, Dr Omer Polak

1.5 hour lectures twice a week; short field work sessions and a one-day tour;

3 academic credits

Course description

The course includes 3 spheres: terrestrial (taught by Elli Groner). Marine (taught by Omer Polak) and the air (taught by Noam Weiss). The course starts with an introduction to deserts of the world and why deserts are considered hazards for life. Then we study adaptations to the hazards of deserts and move from the individuals to the desert food-web and ecosystem and study what makes deserts special. The course ends with studying human-nature interactions including ecosystem services and desert management. While learning about the different ecosystems and taxon students will study the anthropogenic impact on wildlife. The Arava is located on a globally important bird migration flyway. A massive number of migratory birds cross and stopover on their way from Europe and Asia to Africa. We will study bird migration, birds as an asset to human life in the desert, and how to protect it. We will also learn how desert birds adapt to the desert's challenges. We will also learn about the Red Sea and the coral reefs ecosystem.

During the course, the students will learn a variety of field-work methods which will lead to writing an essay.

The course includes short trips looking at the desert ecosystems and a day- long trip including **snorkeling** and a visit to the **bird sanctuary**.

Grade components:

Attendance, Participation, discussions 15%

Quizzes 10%

Trip report 15%

DPSIR model 5%

Ketura LTEM field report 15%

Final exam 40%

Readings:

The Biology of Deserts. David Ward 2009. Oxford university press. 339 pp

Course Schedule:

Class	Teacher	Topic	Details
1	Noam	Introduction to course and bird migration	
2	Omer	Introduction to the Gulf of Aqaba, Oceanographic aspects	
3	Elli	Introductions to deserts	
4	Elli +Noam	Introducing the sand dune monitoring	Walk to dunes
5	Elli	Adaptation to the desert life: Plants and animals	How to enter data
7	Noam	Bird's adaptation to desert life	
8	Omer	The coral Reef	
9	Omer	Marine Species Interactions	
10	Noam	Conflicts - people and birds.	
11	Noam + Omer	Bird Sanctuary and Coral Reef Reserve	Field Trip 07:00 - 15:00
11	Omer	Life history of selected marine organisms	
12	Elli	Desert ecosystem processes	Analysis of sand dune data - pivots and QC
13	Elli	The desert foodweb	
14	Elli	Acacia as a keystone species	Alpha diversity
15	Omer	Fish Ecology	
16	Noam	The Flyway conservation	
17	Noam	Birds in the city-Urban birds and watching birds in Ketura.	
18	Omer	Global and local threats to the Marine environment.	
19	Noam	Agro-ecology and birds. + Some of the rarest birds live here - what's their story? - some interesting case studies.	Double lesson until 11:00
20	Elli	Ecosystem services of the Arava	Submission of excel of SD
21	Omer	Marine conservation an international effort.	
22	Elli	Desert Ecosystem integrity	Submission of paper on SD
23	Elli	DSPiR	
24	Noam	Bird-watching in the desert.	
25	Noam	Ornithology and peace + Getting ready for the test	
26		Final exam	