

# Ecology of the Arava

Coordinator: Dr. Elli Groner,

Co-lecturers: Dr Omer Polak, Noam Weiss, Dr Anton Khalilieh,

3 weekly hours , short field work sessions and a one-day tour.

3 academic credits

## Course description

This course will teach the principles and processes of **desert ecology**.

The course includes 3 spheres: terrestrial (taught by Elli Groner). Marine (taught by Omer Polak) and the air (taught by Noam Weiss and Dr Anton Khalilieh). 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 different ecosystem and taxon students will study the anthropogenic impact on wildlife. The Arava is unique in its massive **bird migration** from Africa to Europe and Asia and we will study the issue of migration in relation to the and the Arava as a station in the migration. 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. Evaluation is based on the essay of the student, data collection, reading quizzes, a midterm exam and a final exam.

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

## Grade components:

Attendance, Participation, discussions 10%

Quizzes, projects, exercises, assignments 40%

Midterm exam 5%

Final exam 45%

## Readings:

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

## Syllabus:

- Part A:  
**Getting to know the desert** – Introduction to the desert, learning tools to study desert ecology.
- Part B:  
Sea and Air of the Arava, Marine Biology (taught by Dr Omer Polak),  
Bird Migration (taught by Noam Weiss and Dr Anton Khalilieh)

## Course Schedule:

Session	Topic
1	<b>Introductions to deserts</b>
2	Bird migration in Southern Arava
3	<b>The desert environment and introduction to course</b>
4	The Aqaba Gulf oceanography
5	Bird's adaptation to desert life
6	The coral reef
7	<b>Plant adaptation to desert life</b>
8	<b>Animal adaptation to desert life</b>
9	Birds & people – conflict or peace?
10	<b>Desert food-webs</b>
11	Collaboration with Jordan and long term monitoring of the gulf
12	<b>Acacia as a keystone species</b>
13	<b>Monitoring Acacia</b>
14	Ornithology & Peace
15	Fish ecology
16	Nature and birds conservation in southern Arava
17	<b>Desert ecosystem processes</b>
18	<b>Ecosystem services of the Arava</b>
19	Conservation in Palestine
20	Summary of the Aqaba gulf ecosystem
21	<b>DPSIR</b>
22	<b>Summary</b>
23	Ecology field trip: Birds and snorkeling
24	Final exam