

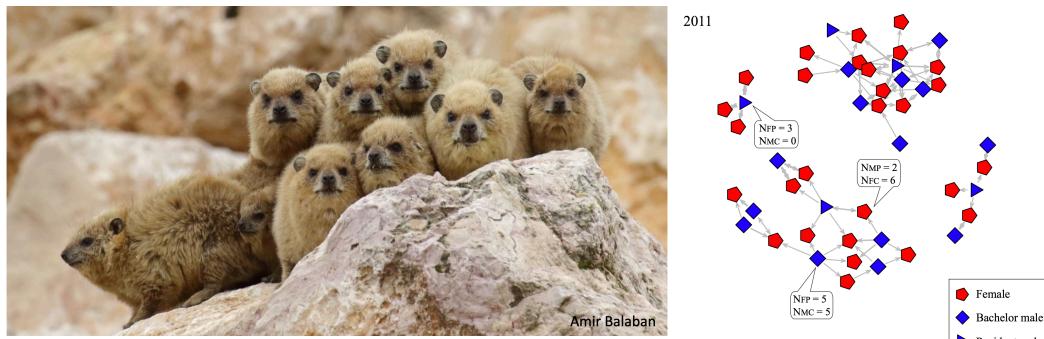
We are looking for a PhD student for a project on **sexual networks** and **alternative mating tactics** in the **rock hyrax**. The project involves tracking of social and sexual interactions using state-of-the-art sensors. The student will be supervised by Dr. Amiyaal Ilany at Bar Ilan University, in collaboration with Dr. Lee Koren.



The project involves extensive fieldwork 6 months a year at the Ein Gedi Nature Reserve, Israel.

The ideal applicant has a strong background in behavioral ecology, field experience handling wildlife, and data analysis skills using R.

Starting date: flexible, around December 2019 – January 2020



Stipend: Bar-Ilan University President Scholarship

Housing: Provided during the field season

Scientific description:

Sexual selection is an important agent of evolution, driving fundamental evolutionary processes such as speciation, mutation rates, and local extinction rates. The effect of sexual selection on these phenomena depends on its strength within a population. Therefore, measuring sexual selection is important to understanding key evolutionary processes. Traditionally, sexual selection is measured at the population level, assuming no population structure. In addition, most previous studies in this field focused on trait-based mate choice. However, recent evidence suggests that the social structure and intrasexual competition result in complex dynamic patterns of sexual interactions. These patterns can be summarized as a sexual network, describing the interactions among males and females. This network determines the level of local intrasexual competition experienced by each individual. Here, we will study how alternative mating tactics shape the sexual network, and the consequences of these tactics in terms of mating and reproductive success. We will build on a long-term study of a wild rock hyrax population, operating for the last 20 years. In this population, we identified three alternative mating tactics employed by males. Male hyraxes advertise

their presence and their traits to rival males via acoustic signals. We will experimentally manipulate the sexual network using playback experiments. These playbacks are designed to cause males and females to switch their tactics, allowing us to examine the resulting sexual networks and their reproductive consequences. We will use novel proximity loggers to track the impact of these manipulations on sexual network dynamics in a population of marked individuals with well-known life histories. In addition, we will develop theoretical models of sexual network dynamics, and test them using the data we will collect. This study will be the first to test a set of predictions regarding the fine-scale temporal dynamics of sexual networks. It will expand our understanding of the selective forces shaping alternative mating tactics. Furthermore, it has the potential to expose biases in how sexual selection is measured in many species as a result of overlooking the temporal dynamics of sexual interactions.

Job description:

The student's tasks include:

1. Planning experiments and developing specific research questions.
2. Fieldwork: trapping, marking, and observing hyraxes; performing experimental manipulations using playbacks.
3. Analyzing data (including behavioral observations, life history, proximity loggers data, and possibly genomic data).
4. Writing scientific papers and presenting results in local & international conferences.
5. Optional: simulating sexual network dynamics.

Requirements:

- Candidates should have a Master's Degree in biology or equivalent by the starting date.
- The most important requirement is a strong interest in studying the behavioral ecology of wild animals. This requires patience, care to many small details, and willingness to spend many hours and days in the field.

References:

- Bar Ziv et al. (2016) [Individual, social, and sexual niche traits affect copulation success in a polygynandrous mating system](#). Behavioral Ecology and Sociobiology 70:901-912
- Barocas et al. (2011) [Variance in centrality within rock hyrax social networks predicts adult longevity](#). Plos One 6:e22375

For more information, please contact Dr. Amiyaal Ilany (amiyaal@gmail.com)

The application should include:

1. CV
2. A cover letter with field experience and interests
3. Contact information of up to three academic references.

Application deadline: September 30, 2019