



**Ben-Gurion University of the Negev**  
**Jacob Blaustein Institutes for Desert Research**  
**The Swiss Institute for Dryland Environmental and Energy Research**  
**Mitrani Department of Desert Ecology**

## Seminar

# Tal Polak

*Israel Nature and Parks  
Authority*



Tuesday, June 20, 2017, 12:00

Seminar Room, Old Administration Building

Participants are invited to meet the seminar speaker at the MDDE meeting room immediately after the seminar (~ 13:00). Please bring your lunch; snacks will be provided.

## **Meeting Aichi targets: optimizing protected areas expansion to accommodate both species and ecosystems**

The Convention on Biological Diversity (CBD) aims to protect the world's biodiversity by expanding the current protected area network to comprise 17% of the Earth's terrestrial area using ecosystem-based targets (Target 11) and preventing the extinction of known threatened species (Target 12). While both targets use protected areas, Target 11 is the main driver for the CBD's expansion plan. However, the cost-effectiveness of the CBD's guidelines of using ecosystem-based targets to effectively represent threatened species has not been adequately investigated. I used Australia as a case study to test how well ecosystem-based targets protect threatened species, and compared the cost-effectiveness of planning for species and ecosystems separately and simultaneously. I used species-specific targets for 1,320 threatened species and a 10% target for each one of Australia's 85 bioregions. I discovered that, following the CBD's ecosystem-based approach for protected area expansion, the outcome would be inadequate and inefficient for representation of threatened species. Even filling in the gaps for threatened species protection later (coarse- then fine-scale) proved to be an inefficient strategy, while the reverse (fine- then coarse-scale) was almost as cost-effective as planning for both simultaneously. I extended this problem to explore the trade-off curves between the target sizes of these two conservation features within several protected area networks of different sizes. These curves can be used as a planning tool for countries that have either geographical or monetary limitations. Depending on their needs, countries can use the trade-off curves to place more or less emphasis on either ecosystems or species when planning protected areas.