



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

Special Seminar

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Wednesday, March 22, 2017, **12:15**

Classroom 1 (located in the students' dorms)

Participants are invited to meet the seminar speaker at the MDDE meeting room immediately after the seminar (~ 13:15). Please bring your lunch; snacks will be provided.

**Ecosystem consequences of invasion by and removal
of *Tamarix* spp. (eshel) in the arid western U.S.**

Ecological restoration of river systems in arid regions of the United States often include large-scale efforts to remove invasive exotic *Tamarix* spp. (aka eshel, saltcedar) trees. Several species of *Tamarix* were introduced to western U.S. states during the 1800's from the Middle East and Asia as a wind-break, stream-bank stabilizer, and ornamental; *Tamarix* is now the third most common species along rivers in these regions. Invasion by *Tamarix* is associated with elevated salinity, increased wildfire risk, lowered water tables, and altered plant and animal communities, however there is debate regarding whether removal of the trees has any hope of returning these ecosystems to their former state. Of particular concern and interest is the impact of a biological control insect, *Diorhabda* spp, that has been successfully defoliating *Tamarix* trees at a much higher rate than had been predicted when it was first released in 2003. By analyzing plant community data from more than 400 sites across the southwestern U.S., we have been able to identify several environmental and management factors that explain when and where removal by both the bio-control and traditional methods results in "successful" restoration. Our current NSF-sponsored research involves deeper exploration of the human component by using multivariate analysis of data from surveys of the land managers to better understand whether the attitudes and backgrounds of the people doing the restoration matters for outcomes. Our ultimate goals are to improve ecological restoration in arid lands while illuminating more general principles about the impact of anthropogenic activity on ecosystems.