

Challenges facing biodiversity of mountains in the arid lands



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IPROMO

*Managing mountain resources and diversities:
the role of protected areas*

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Education

- Ph.D.** Environmental Science, University of Idaho, USA, 2012
- M.Sc.** Geography, University of Idaho, USA, 2011
- Graduate Certificate in Statistics**, University of Idaho, USA, 2010
- M.Sc.** Environmental Sciences, Alexandria University, EG, 2005
- B. Sc.** Environmental Sciences, Alexandria University, EG, 1998



Employment and main activities

- Lecturer** 2013- Present
Department of Environmental Sciences-Faculty of Science,
AU, EG
- Assistant Lecturer** 2005- 2013
Department of Environmental Sciences-Faculty of Science,
AU, EG
- Teaching assistant** 1999- 2005
Department of Environmental Sciences-Faculty of Science,
AU, EG



Other interests



I. Goods and services provided by mountains in arid lands

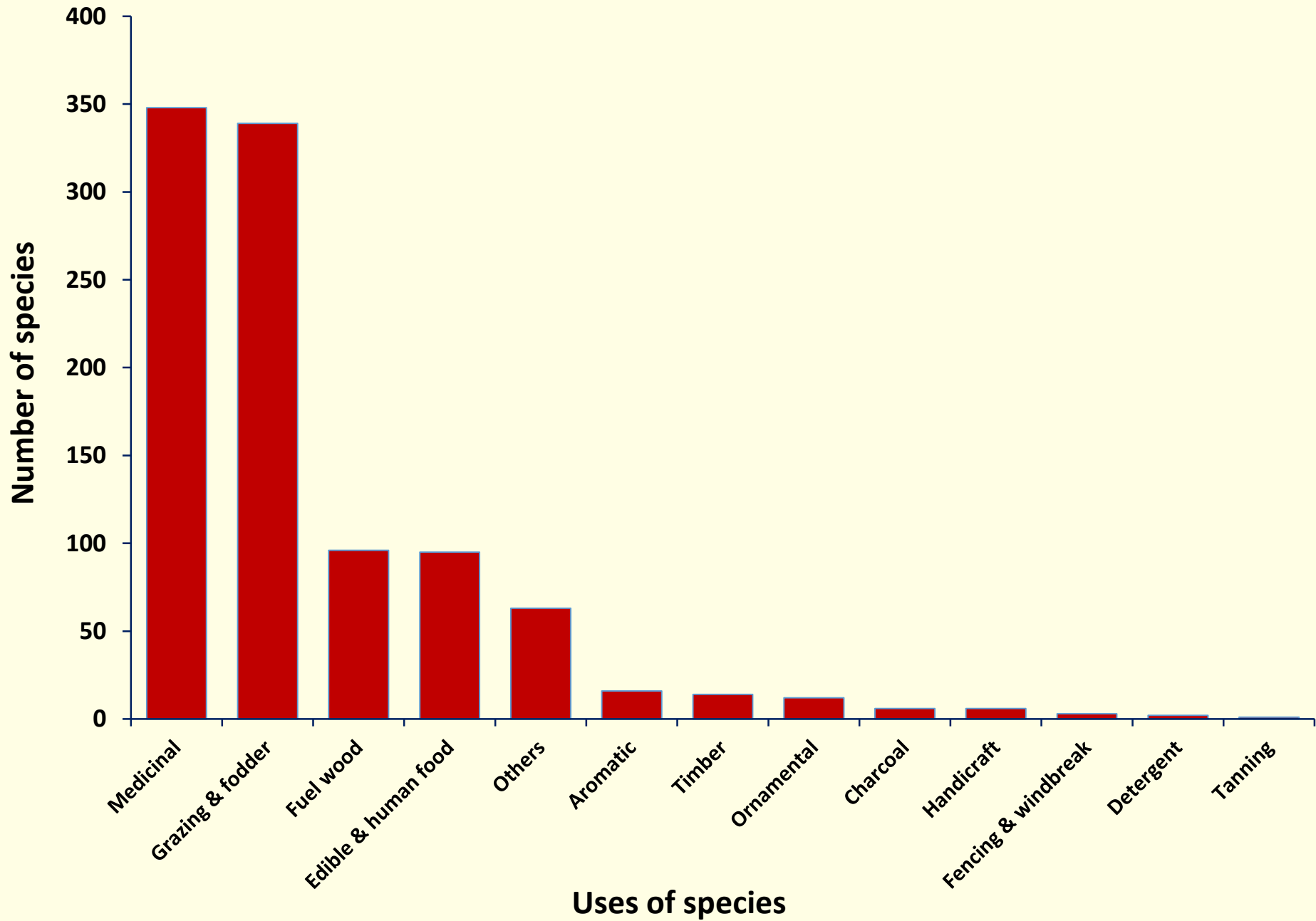
Objectives

- (1) identifying the goods and services provided by mountains ecosystems in arid lands with emphasis on those made available by the native plants
- (2) highlight the link between the goods and services provided by the ecosystems and socioeconomic benefits for the local communities, and
- (3) identify the main stresses and threats to the ecosystems that may hinder the sustained delivery of the goods and services

Methods

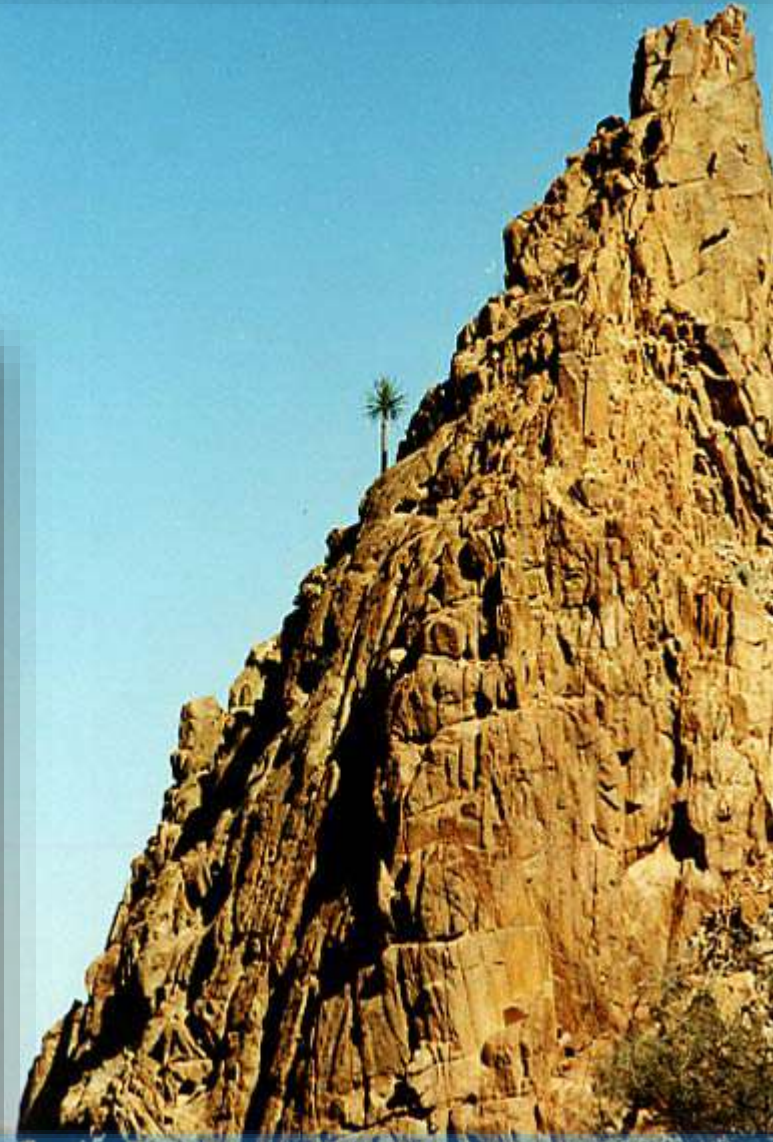
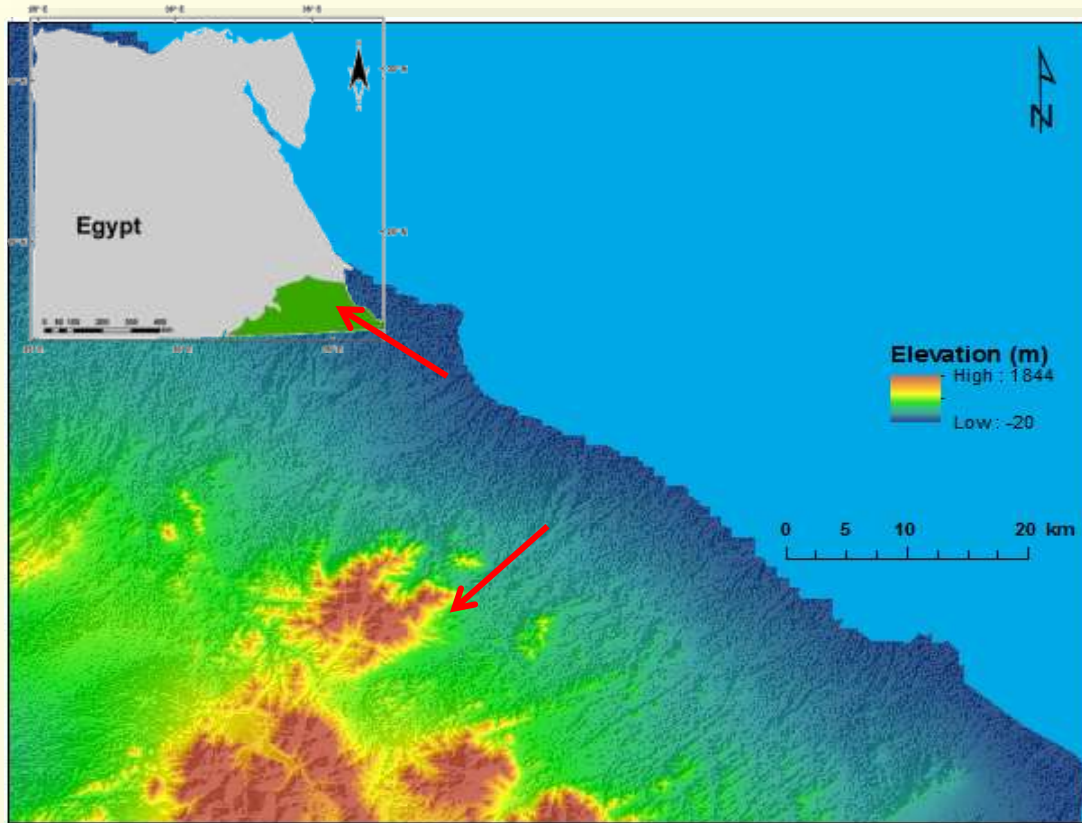
- Field surveys conducted in mountainous areas for recording species existing and human impact
- Specimens are collected for identification of species
- Voucher plant material & herbarium specimens are deposited in Alexandria University Herbarium (ALEX)
- We assemble existing knowledge on uses and the services provided by the native plants through interviews & administered questionnaires
- Interviews are carried out in local inhabitants' houses, and in the field
- Male and female informants are representative of two age groups (35–50, >50 yrs)





II. Impact of invasive species on the mountains of the arid lands

- Gabal Elba in the southern eastern part of Egypt is a “biodiversity hotspot”
- Has many threatened species (mammals, birds, reptiles & plants)
- has been declared as a national park PA in 1986



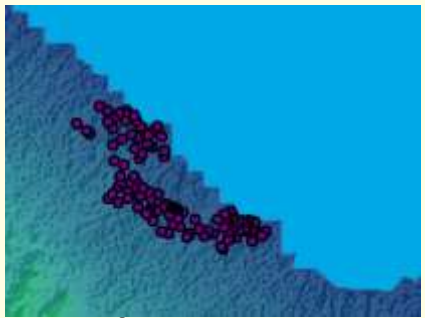
Problem addressed

- Mesquite (*Prosopis juliflora*) is the most serious invader in the south-east corner of Egypt.
- Introduced to the area by the local community in the 1985 for charcoal production, it subsequently spread rapidly
- It poses a threat to the PA's biodiversity

Objectives

1. Predict the distribution of the alien species *Prosopis juliflora* in the study area
2. Assess the risk of invasion by the species in the study area

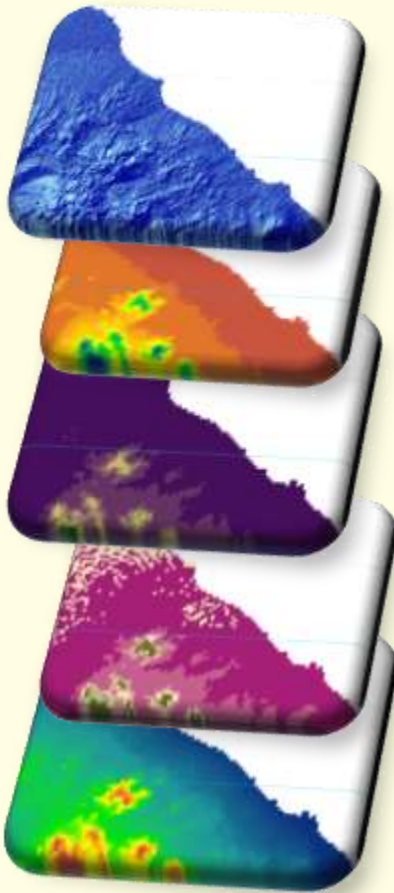
Predicting the distribution of alien species: **Methods**



Alien species occurrence data

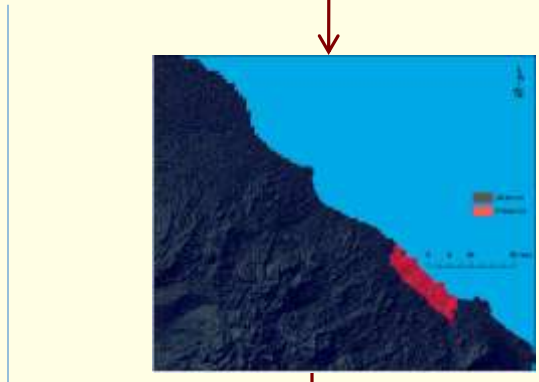
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Bioclimatic data

**Prediction using
Random Forest &
Maxent**



evaluation

Thank You!

Thank You!