Uromastyx lizards in Israel

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Where is Israel?
Israel

- An extremely rich diversity of rich populations of wild fauna and flora

- Size: ~20,000 km² (smaller than the Netherlands)
- Population: < 7 million
- At the intersection of 3 continents (diverse ecotones)
- Strict laws for wildlife protection
- Very low hunting pressure

Sea of Galilee - Lake Kinneret
Biogeography of Israel

- **Southern half**: mostly desert
- **Northern half**: forests
- **Center**: narrow transition zone with many cities

[Map showing the biogeography of Israel]
Wildlife biodiversity in Israel

16 species of Carnivores:

- Striped hyena (*Hyena hyena*)
- 5 species of canids: wolf (*Canis lupus*), 3 foxes, golden jackal (*C. aureus*)
- 5 sp. of mustelids: 2 badgers, beech marten, marbled polecat, otter (*Lutra lutra*)
- Egyptian mongoose (*Herpestes ichneumon*)
- 4 species of felids
Wildlife biodiversity in Israel
16 species of Carnivores
4 species of felids:

- Leopard (*Panthera pardus*)
- Caracal (*Felis caracal*)
- Jungle cat (*Felis chaus*)
- Wild cat (*Felis silvestris*)
- Sand cat (*Felis margarita*)
Israel biodiversity for example, 8 species of corvids

- *Garrulus glandarius*
- *Corvus monedula*
- *Pyrrhocorax graculus*
- *Corvus frugilegus*
- *Corvus corone*
- *Corvus corax*
- *Corvus ruficollis*
- *Corvus splendens*
Israel’s Wildlife Trade Policy

1. Protect native wildlife
   - no invasive species allowed
   - limited exploitation of native species

2. Contribute to protection of wildlife overseas
   - import only captive-bred individuals
   - no import from range states
   - no trade in endangered species (those designated by IUCN as *Endangered* or *Vulnerable*)

White oryx reintroduced in Israel
**Uromastyx**

**English names:**
- mastigure, spiny-tailed lizard, dhabb lizard, uro

**Taxonomy:**
- Fam. Agamidae
- CITES standard ref.: Wilms (2001) – 16 species

**CITES**
- App. II since 1977

**IUCN Red List:**
- Only 1 sp. EN
- GRA not complete
Species of *Uromastyx* in Israel

- **U. aegyptia** - Egyptian mastigure
  - Largest species in the genus (~ 75 cm)
  - Distribution from Libya to Oman
  - Lives in dry wadis and alluvial plains
  - Important physical ecosystem engineer
Species of *Uromastyx* in Israel

- **U. ornata** - Ornate mastigure
  - Much smaller than *U. aegyptia* (~40 cm)
  - *Distribution*: Egypt, Israel, Saudi Arabia
  - Lives on rocky slopes in extreme desert
    with < 20 mm rainfall
  - Most active in > 40°C
Threats

**U. aegyptia**

- Loss of habitat: Desert converted to intense low-water-use agriculture
- Poaching by Thai farm workers
Threats

*U. ornata*

- Small range (~270 km²)
- Very small population (~200 individuals)
- Off-road vehicles 4X4 and ATV
**NDF – *U. aegyptia***

- **Comparative surveys in Arava Valley:**

- **Methods:**
  - Determine population density
  - Aerial photographs of burrows
  - Ground-truthing of activity using transects
  - Multi-year comparisons
  - No demography
Aerial photography surveys

- Light dots = *Uromastyx* burrows
- Dark spots = *Acacia* trees and bushes

~500 m
Multi-year comparisons

Nature Reserve boundary

Nature Reserve boundary

Highway

Agricultural area
Multi-year comparisons

Percent of burrows that are active

![Bar graph showing the percent of active burrows in 1984, 2000, and 2007.](image)
Effect of agr. on *Uromastyx*

- Results of surveys:
  - Lower population density
  - Loss of habitat - Smaller range
  - Increase in poaching levels
  - No complaints of agr. damage since 1997
NDF – *U. aegyptia*

- Population is not increasing or stable, but is shrinking
- Further losses expected
- No safe level of exploitation could be assessed
**U. ornata**

- Total population ~ 200 individuals
- In 2000: Stable but small pop.
- No NDF possible
- Since 2000, population has shrunk even more, due to severe drought and diminished food sources
Conclusions

- No demographic data, or population modeling of harvest, or estimate of MSY.
- Non-scientific determination showed that the populations were “in trouble”
- Final ruling based on precautionary principle in keeping with wildlife conservation policy.