

Exploitation of Amphibians



Jacob Wessels

What is exploitation?

Collection and use of amphibians for

- Consumption (subsistence vs. commercial)
- Pet trade
- Research
- Traditional medicine



Altherr et al. 2011
Mohneke et al. 2009
Schlaepfer et al. 2005

How exploitation kills amphibians


- Direct removal of individuals from the wild
- Indirect effects (will come back to this)



Evidence of declines

France

- Large numbers of harvested frogs
- Population declines
- Led to prohibition of collection, trade, and sale of native frogs

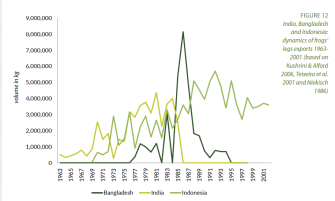


Mohneke et al. 2009
Warkentin et al. 2009

Evidence of declines

India and Bangladesh

- Formerly major frog leg exporters
- Population declines due to exploitation led to halt of exportation of frogs




Altherr et al. 2011
Mohneke et al. 2009

Importance of exploitation

Indirect effects of exploitation

- Pathogen pollution- chytrid and ranavirus
- Release of nonnative species
- Pesticides: cascading effects of amphibian exploitation



Mohneke et al. 2009
Schlaepfer et al. 2005
Schloegel et al. 2009

Importance of exploitation

Magnitude of the issue

- 5 million live amphibians were traded internationally in 2006 for pets or human consumption.
- Utilization of amphibians represents a threat for 281 species, according to IUCN.

Altherr et al. 2011
Schlaepfer et al. 2005

So what can be done?

- Improvement of regulations
- Certification and monitoring
- Better enforcement to prevent illegal trade
- Prevention of disease and invasions is the best option
- Captive breeding?
 - Not a good solution: risk of species invasions, disease
 - Most attempts have failed
- Educating consumers

Altherr et al. 2011
Mohneke et al. 2009
Natusch and Lyons 2012
Schlaepfer et al. 2005
Warkentin et al. 2009

So what can be done?

Hope for improving the situation of amphibian exploitation: it is relatively straightforward to stop people from exploiting.



Natusch and Lyons 2012

References

- Altherr, S. *et al.* (2011) Canapés to extinction: The international trade in frogs' legs and its ecological impact. A report by Pro Wildlife, Defenders of Wildlife and Animal Welfare Institute (eds.), Munich (Germany), Washington, D.C. (USA).
- Mohneke, M. *et al.* (2009) Exploitation of frogs – A review with a focus on West Africa. *Salamandra* 45, 193-202
- Natusch, D.J.D. and Lyons, J.A. (2012) Exploited for pets: The harvest and trade of amphibians and reptiles from Indonesian New Guinea. *Biodiversity and Conservation* 21, 2899-2911
- Schlaepfer, M.A. *et al.* (2005) Challenges in evaluating the impact of the trade in amphibians and reptiles on wild populations. *BioScience* 55, 256-264
- Schloegel, L.M. *et al.* (2009) Magnitude of the US trade in amphibians and presence of *Batrachochytrium dendrobatidis* and ranavirus infection in imported North American bullfrogs (*Rana catesbeiana*). *Biological Conservation* 142, 1420-1426
- Warkentin, I.G. *et al.* (2009) Eating frogs to extinction. *Conservation Biology* 23, 1056-1059

Image Sources (in sequential order)

- <http://www.telegraph.co.uk/>
- <https://naturescrusaders.wordpress.com/>
- <http://www.dailymail.co.uk/>
- commons.wikimedia.org
- Altherr et al. 2011
- <http://www.theguardian.com/environment/>
- <http://www.arkive.org/>
