

Human-Macaque Interactions and Related Effects on Macaque Behavior and Conservation



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Macaques

- ▶ Old World monkey
- ▶ Body size: Medium to Large bodied
- ▶ Omnivorous: fruit, leaves, invertebrates
- ▶ Arboreal/terrestrial
- ▶ Social groups of 20-50 of both sexes and all ages
- ▶ Alpha males usually fission to start own groups
- ▶ Native to Asia and Africa

- ▶ Order = Primates
- ▶ Family = Cercopithecidae
- ▶ Genus = *Macaca*

Phyletic Species-Groups Within the Genus *Macaca* (A. F. Richard, *et. al.* 1989)

1. ***M. fascicularis* group**
 - *M. cyclops* - Formosan rock, or Taiwan macaque
 - *M. fascicularis* - Crab-eating, or long-tailed macaque
 - *M. fuscata* - Japanese macaque
 - *M. mulatta* - Rhesus macaque
2. ***M. sylvanus-sylvanus* group**
 - *M. nemasoma* - Pigtail macaque
 - *M. sylvanus* - Lion-tailed macaque
 - *M. sylvanus* - Barbary macaque
 - *M. brunnesens* - Mana-Butung macaque
 - *M. hecki* - Heck's macaque
 - *H. maura* - Moor macaque
 - *M. nigra* - Celebes black macaque
 - *M. nigrescens* - Gorontalo macaque
 - *M. ochreata* - Booted macaque
 - *M. tonkeana* - Tonkean macaque
3. ***M. sinica* group**
 - *M. assamensis* - Assamese macaque
 - *M. radiata* - Bonnet macaque
 - *M. sinica* - Tonque macaque
 - *M. thibetana* - Tibetan macaque
4. ***M. arctoides* group**
 - *M. arctoides* - Stumptail, or bear macaque

Initial Research Question

Human Perceptions vs. Macaque Behavior

My Perception

- ▶ Bali, Indonesia
 - Revered
 - Provisioned
 - Welcomed tourist attraction
- ▶ Yap, Micronesian Island
 - Pests
 - Disease transmitters
 - Illegal transport to main island
 - Illegal as pets
 - Crop-raiders

Both human perceptions and macaques behaviors have been an issue due to the increasing amount of human-macaque interaction

- ▶ What is meant by 'natural' environment?
- ▶ What forms of conservation are beneficial to macaques and humans?
- ▶ What are the issues surrounding established conservation methods?

Methods

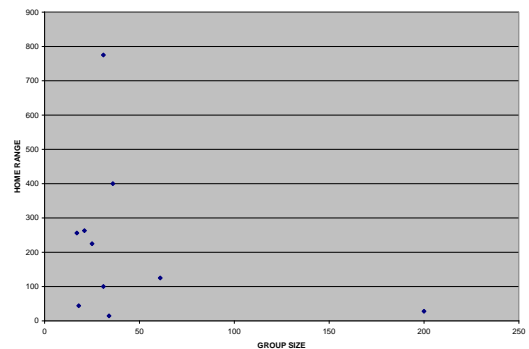
- ▶ Reviewed published literature
- ▶ Variables
 - Deliberate & nondeliberate provisioning
 - Crop-raiding
 - Human-macaque interactions
 - Macaque-macaque interactions
 - Group size
 - Home range size

Offerings in form of a flowers/fruits
= non-deliberate provisioning



Methods

- ▶ Macaque Sites
 - Pantangtegal, Bali, Indonesia
 - Sulawesi, Indonesia
 - Sangeh, Bali Indonesia
 - Mt. Emei, China
 - Mt. Huangshan, China
 - Mauritius (Island in the S.W. Indian Ocean)
 - Palau, Micronesian island
 - Gibraltar (shares northern border with Spain)
 - Mt. Ryozen, Japan
 - Yakushima, Japan



From my initial research it seemed
tourism was the key to conservation
issues:

- ▶ increased revenue
- ▶ supplemental foraging nutrition to offset the loss of vegetation due to deforestation
- ▶ less need for macaques to crop-raid

Padangtegal Monkey Forest, Bali, Indonesia

- ▶ Indonesian temples sacred (~20,000 temples in Bali alone)
- ▶ Offering to gods = non-deliberate provisioning for centuries or more
- ▶ Temples places of conservation and tourism
 - Community revenue
 - Increased macaque aggression due to rewarding
 - Disease transmission
- ▶ Rewarding- provisioning bad behavior
 - Macaques learn aggressive behavior
- ▶ Crop-raiding

Tourist Provisioning



Indonesian Rice Terraces



As far as the eye can see = hard to protect from crop-raiding



Gibraltar

- ▶ Taxi drivers act as guides
 - Drivers aid in macaque-human contact
 - Aggression
 - Disease transmission
 - Increased numbers of macaques
 - In town raiding events

Mt. Huangshan, China

- ▶ Range Restriction
 - From 7km² > 3km²
- ▶ Large population #'s
- ▶ Lack of natural dietary needs
- ▶ Lack of substantial provisioning
- ▶ Increased aggression
- ▶ Infant mortality

Conclusions: Types of Conservation Methods in Practice

- ▶ In forest inhabitants
- ▶ Conservation Parks
- ▶ Tourism & revenue-sharing with local community
- ▶ Hired guards by farmers to protect against crop-raiding
- ▶ Planting of certain crops far away from forest edge (e.g. Maize)

