

A.P.E.S. Wiki

Table guidelines

October 2020



Contents

Table 1 Basic site information	3
Table 2 Ape status	6
Table 3 Threats	7
Table 4 Conservation activities	9
Table 5 Challenges	15
Table 6 Documented behaviors	16

Table 1 Basic site information

Site designations

The following list is not exhaustive; if no suitable category exists, please add it.

- Strict Nature Reserve
- Wilderness Area
- National Park
- Natural Monument or Feature
- Habitat/Species Management Area
- Protected Landscape
- Protected area with sustainable use of natural resources
- Proposed protected area
- Forestry concession
- Unclassified

Habitat types

Please use the IUCN Habitats classification scheme (version 3.1), listed below and also accessible via the following link:

<https://www.iucnredlist.org/resources/habitat-classification-scheme>

1. Forest

- 1.1. Forest – Boreal
- 1.2. Forest - Subarctic
- 1.3. Forest – Subantarctic
- 1.4. Forest – Temperate
- 1.5. Forest – Subtropical/tropical dry
- 1.6. Forest – Subtropical/tropical moist lowland
- 1.7. Forest – Subtropical/tropical mangrove vegetation above high tide level
- 1.8. Forest – Subtropical/tropical swamp
- 1.9. Forest – Subtropical/tropical moist montane

2. Savanna

- 2.1. Savanna - Dry
- 2.2. Savanna - Moist

3. Shrubland

- 3.1. Shrubland – Subarctic
- 3.2. Shrubland – Subantarctic

- 3.3. Shrubland – Boreal
- 3.4. Shrubland – Temperate
- 3.5. Shrubland – Subtropical/tropical dry
- 3.6. Shrubland – Subtropical/tropical moist
- 3.7. Shrubland – Subtropical/tropical high altitude
- 3.8. Shrubland – Mediterranean-type shrubby vegetation

4. Grassland

- 4.1. Grassland – Tundra
- 4.2. Grassland – Subarctic
- 4.3. Grassland – Subantarctic
- 4.4. Grassland – Temperate
- 4.5. Grassland – Subtropical/tropical dry
- 4.6. Grassland – Subtropical/tropical seasonally wet/flooded
- 4.7. Grassland – Subtropical/tropical high altitude

5. Wetlands (inland)

- 5.1. Wetlands (inland) – Permanent rivers/streams/creeks (includes waterfalls)
- 5.2. Wetlands (inland) – Seasonal/intermittent/irregular rivers/streams/creeks
- 5.3. Wetlands (inland) – Shrub dominated wetlands
- 5.4. Wetlands (inland) – Bogs, marshes, swamps, fens, peatlands
- 5.5. Wetlands (inland) – Permanent freshwater lakes (over 8 ha)
- 5.6. Wetlands (inland) – Seasonal/intermittent freshwater lakes (over 8 ha)
- 5.7. Wetlands (inland) – Permanent freshwater marshes/pools (under 8 ha)
- 5.8. Wetlands (inland) – Seasonal/intermittent freshwater marshes/pools (under 8 ha)
- 5.9. Wetlands (inland) – Freshwater springs and oases
- 5.10. Wetlands (inland) – Tundra wetlands (inc. pools and temporary waters from snowmelt)
- 5.11. Wetlands (inland) – Alpine wetlands (inc. temporary waters from snowmelt)
- 5.12. Wetlands (inland) – Geothermal wetlands
- 5.13. Wetlands (inland) – Permanent inland deltas
- 5.14. Wetlands (inland) – Permanent saline, brackish or alkaline lakes
- 5.15. Wetlands (inland) – Seasonal/intermittent saline, brackish or alkaline lakes and flats
- 5.16. Wetlands (inland) – Permanent saline, brackish or alkaline marshes/pools
- 5.17. Wetlands (inland) – Seasonal/intermittent saline, brackish or alkaline marshes/pools
- 5.18. Wetlands (inland) – Karst and other subterranean hydrological systems (inland)

6. Rocky Areas (e.g., inland cliffs, mountain peaks)

7. Caves & Subterranean Habitats (non-aquatic)

- 7.1. Caves and Subterranean Habitats (non-aquatic) – Caves
- 7.2. Caves and Subterranean Habitats (non-aquatic) – Other subterranean habitats

8. Desert

- 8.1. Desert – Hot
- 8.2. Desert – Temperate
- 8.3. Desert – Cold

13. Marine Coastal/Supratidal

- 13.1 Sea Cliffs and Rocky Offshore Islands
- 13.2 Coastal Caves/Karst
- 13.3 Coastal Sand Dunes
- 13.4 Coastal Brackish/Saline Lagoons/Marine Lakes
- 13.5 Coastal Freshwater Lakes

14. Artificial - Terrestrial

- 14.1 Arable Land
- 14.2 Pastureland
- 14.3 Plantations
- 14.4 Rural Gardens
- 14.5 Urban Areas
- 14.6 Subtropical/Tropical Heavily Degraded Former Forest

15. Artificial - Aquatic

- 15.1 Water Storage Areas [over 8 ha]
- 15.2 Ponds [below 8 ha]
- 15.3 Aquaculture Ponds
- 15.4 Salt Exploitation Sites
- 15.5 Excavations (open)
- 15.6 Wastewater Treatment Areas
- 15.7 Irrigated Land [includes irrigation channels]
- 15.8 Seasonally Flooded Agricultural Land
- 15.9 Canals and Drainage Channels, Ditches
- 15.10 Karst and Other Subterranean Hydrological Systems [human-made]
- 15.11 Marine Anthropogenic Structures
- 15.12 Mariculture Cages
- 15.13 Mari/Brackish-culture Ponds

16. Introduced Vegetation

17. Other

18. Unknown

Table 2 Ape status

Survey methods

The following list, based on Campbell et al. 2016, includes the most common survey methods:

- Aerial survey
- Capture-recapture method
- Full count
- Home range estimation
- Informed guess (not described in Campbell et al. 2016; e.g., this could be based on personal observation)
- Index survey (for **recce survey** add 'reconnaissance walk' to the comment column)
- Interview method (for **questionnaire survey** add 'questionnaire survey' to comment column)
- Line transects (Distance)
- Model estimate (not described in Campbell et al. (2016); e.g., based on density distribution model, when an area was not surveyed)
- Occupancy method
- Point transects (Distance)
- Presence-absence sampling
- Strip & quadrat sampling

Table 3 Threats to apes

Specific threats

Please use the IUCN Threats classification scheme (version 3.2) listed below. The full list is also accessible via the following link (please **note that it is enough to specify down to the second level** of the classification scheme):

<https://www.iucnredlist.org/resources/threat-classification-scheme>

1. Residential & commercial development

- 1.1 Housing & urban areas
- 1.2 Commercial & industrial areas
- 1.3 Tourism & recreation areas

2. Agriculture & aquaculture

- 2.1 Annual & perennial non-timber crops
- 2.2 Wood & pulp plantations
- 2.3 Livestock farming & ranching
- 2.4 Marine & freshwater aquaculture

3. Energy production & mining

- 3.1 Oil & gas drilling
- 3.2 Mining & quarrying
- 3.3 Renewable energy

4. Transportation & service corridors

- 4.1 Roads & railroads
- 4.2 Utility & service lines
- 4.3 Shipping lanes
- 4.4 Flight paths

5. Biological resource use

- 5.1 Hunting & collecting terrestrial animals
- 5.2 Gathering terrestrial plants
- 5.3 Logging & wood harvesting
- 5.4 Fishing & harvesting aquatic resources

6. Human intrusions & disturbance

- 6.1 Recreational activities
- 6.2 War, civil unrest & military exercises
- 6.3 Work & other activities

7. Natural system modifications

- 7.1 Fire & fire suppression
- 7.2 Dams & water management/use

7.3 Other ecosystem modifications

8. Invasive & other problematic species, genes & diseases

8.1 Invasive non-native/alien species/diseases

8.2 Problematic native species/diseases

8.3 Introduced genetic material

8.4 Problematic species/diseases of unknown origin

8.5 Viral/prion-induced diseases

8.6 Diseases of unknown cause

9. Pollution

9.1 Domestic & urban waste water

9.2 Industrial & military effluents

9.3 Agricultural & forestry effluents

9.4 Garbage & solid waste

9.5 Air-borne pollutants

9.6 Excess energy

10. Geological events

10.1 Volcanoes

10.2 Earthquakes/tsunamis

10.3 Avalanches/landslides

11. Climate change & severe weather

11.1 Habitat shifting & alteration

11.2 Droughts

11.3 Temperature extremes

11.4 Storms & flooding

11.5 Other impacts

12. Other options

12.1 Other threat

Table 4 Conservation activities

Specific activities

Conservation activities are classified according to the types of threats they address. The list was compiled by Junker et al. (2017) for the primate synopsis of the Conservation Evidence project.

1. Threat: Residential and commercial development

- 1.1. Remove and relocate 'problem' animals
- 1.2. Relocate primates to non-residential areas
- 1.3. Discourage the planting of fruit trees and vegetable gardens on the urban edge

2. Threat: Agriculture

- 2.1. Create natural habitat islands within agricultural land
- 2.2. Use fences as biological corridors for primates
- 2.3. Provide sacrificial rows of crops on outer side of fields
- 2.4. Compensate farmers for produce loss caused by primates
- 2.5. Pay farmers to cover the costs of non-harmful strategies to deter primates
- 2.6. Retain nesting trees/shelter for primates within agricultural fields
- 2.7. Plant nesting trees/shelter for primates within agricultural fields
- 2.8. Prohibit (livestock) farmers from entering protected areas
- 2.9. Regularly remove traps and snares around agricultural fields
- 2.10. Certify farms and market their products as 'primate friendly'
- 2.11. Farm more intensively and effectively in selected areas and spare more natural land
- 2.12. Install mechanical barriers to deter primates (e.g. fences, ditches)
- 2.13. Use of natural hedges to deter primates
- 2.14. Use of unpalatable buffer crops
- 2.15. Change of crop (i.e. to a crop less palatable to primates)
- 2.16. Plant crops favored by primates away from primate areas
- 2.17. Destroy habitat within buffer zones to make them unusable for primates
- 2.18. Use nets to keep primates out of fruit trees
- 2.19. Use GPS and/or VHF tracking devices on individuals of problem troops to provide farmers with early warning of crop raiding
- 2.20. Chase primates using dogs
- 2.21. Train langur monkeys to deter rhesus macaques
- 2.22. Use loud-speakers to broadcast sounds of potential threats (e.g. barking dogs, explosions, gunshots)
- 2.23. Use loud-speakers to broadcast primate alarm calls
- 2.24. Strategically lay out the scent of a primate predator (e.g. leopard, lion)
- 2.25. Humans chase primates using random loud noise
- 2.26. Humans chase primates using bright light

3. Threat: Energy and Production Mining

- 3.1. Minimize ground vibrations caused by open cast mining activities

- 3.2. Establish no-mining zones in/near watersheds so as to preserve water levels and water quality
- 3.3. Use 'set-aside' areas of natural habitat for primate protection within mining area
- 3.4. Certify mines and market their products as 'primate friendly' (e.g. ape-friendly cellular phones)
- 3.5. Create/preserve primate habitat on islands before dam construction

4. Threat: Transportation and Service Corridors

- 4.1. Install green bridges (overpasses)
- 4.2. Install rope or pole (canopy) bridges
- 4.3. Implement speed limits in particular areas (e.g. with high primate densities) to reduce vehicle collisions with primates
- 4.4. Reduce road widths
- 4.5. Impose fines for breaking the speed limit or colliding with primates
- 4.6. Avoid building roads in key habitat or migration routes
- 4.7. Implement a minimum number of roads (& minimize secondary roads) needed to reach mining extraction sites
- 4.8. Re-use old roads rather than building new roads
- 4.9. Re-route vehicles around protected areas
- 4.10. Install speed bumps to reduce vehicle collisions with primates
- 4.11. Provide adequate signage of presence of primates on or near roads

5. Threat: Biological Resource Use

Hunting

- 5.1. Implement no-hunting seasons for primates
- 5.2. Implement sustainable harvesting of primates (e.g. permits)
- 5.3. Encourage use of traditional hunting methods rather than using guns
- 5.4. Implement road blocks to inspect cars for illegal primate bushmeat
- 5.5. Provide medicine to local communities to control killing of primates for medicinal purposes
- 5.6. Conduct regular anti-poaching patrols
- 5.7. Introduce ammunition tax
- 5.8. Inspect bushmeat markets for illegal primate species
- 5.9. Regularly de-activate/remove ground snares
- 5.10. Provide better equipment (e.g. guns) to anti-poaching ranger patrols
- 5.11. Provide training to anti-poaching ranger patrols
- 5.12. Implement local no-hunting community policies/traditional hunting ban
- 5.13. Strengthen/support/re-install traditions/taboo that forbid the killing of primates
- 5.14. Inform hunters of the dangers (e.g., disease transmission) of wild primate meat

- 5.15. Implement monitoring surveillance strategies (e.g. SMART) or use monitoring data to improve effectiveness of wildlife law enforcement patrols
- 5.16. Implement community control of patrolling, banning hunting and removing snares

Substitution

- 5.17. Provide sustainable alternative livelihoods; establish fish- or domestic meat farms
- 5.18. Employ hunters in the conservation sector to reduce their impact

Logging and wood harvesting

- 5.19. Use selective logging instead of clear-cutting
- 5.20. Use patch retention harvesting instead of clear-cutting
- 5.21. Implement small and dispersed logging compartments
- 5.22. Use shelter wood cutting instead of clear-cutting
- 5.23. Leave hollow trees in areas of selective logging for sleeping sites
- 5.24. Clear open patches in the forest
- 5.25. Thin trees within forests
- 5.26. Coppice trees
- 5.27. Manually control or remove secondary mid-storey and ground-level vegetation
- 5.28. Avoid slashing climbers/lianas, trees housing them, hemi-epiphytic figs, and ground vegetation
- 5.29. Avoid/minimize logging of important food tree species for primates
- 5.30. Incorporate forested corridors or buffers into logged areas
- 5.31. Close non-essential roads as soon as logging operations are complete
- 5.32. Use 'set-asides' for primate protection within logging area
- 5.33. Work inward from barriers or boundaries (e.g. river) to avoid pushing primates toward an impassable barrier or inhospitable habitat
- 5.34. Reduce the size of forestry teams to include employees only (not family members)
- 5.35. Certify forest concessions and market their products as 'primate friendly'
- 5.36. Provide domestic meat to workers of the logging company to reduce hunting

6. Threat: Human Intrusions & Disturbance

- 6.1. Implement a 'no-feeding of wild primates' policy
- 6.2. Build fences to keep humans out
- 6.3. Restrict number of people that are allowed access to site
- 6.4. Install 'primate-proof' garbage bins
- 6.5. Put up signs to warn people about not feeding primates
- 6.6. Do not allow people to consume food within natural areas where primates can view them
- 6.7. Resettle illegal human communities (i.e. in a protected area) to another location

7. Threat: Natural System Modifications

- 7.1. Use prescribed burning within the context of home range size and use
- 7.2. Protect important food/nest trees before burning

8. Threat: Invasive & Other Problematic Species & Genes

- 8.1. Reduce primate predation by other non-primate species through exclusion (e.g. fences) or translocation
- 8.2. Reduce primate predation by other primate species through exclusion (e.g. fences) or translocation
- 8.3. Control habitat-altering mammals (e.g. elephants) through exclusion (e.g. fences) or translocation
- 8.4. Control inter-specific competition for food through exclusion (e.g. fences) or translocation
- 8.5. Remove alien invasive vegetation where the latter has a clear negative effect on the primate species in question
- 8.6. Prevent gene contamination by alien primate species introduced by humans, through exclusion (e.g. fences) or translocation

Disease transmission

- 8.7. Wear face masks to avoid transmission of viral and bacterial diseases to primates
- 8.8. Keep safety distance to habituated animals
- 8.9. Limit time that researchers/tourists are allowed to spend with habituated animals
- 8.10. Implement quarantine for people arriving at, and leaving the site
- 8.11. Implement quarantine for primates before reintroduction/translocation
- 8.12. Ensure that researchers/tourists are up-to-date with vaccinations and healthy
- 8.13. Regularly disinfect clothes, boots etc.
- 8.14. Wear gloves when handling primate food, tool items, etc.
- 8.15. Preventative vaccination of habituated or wild primates
- 8.16. Treat sick/injured animals
- 8.17. Remove/treat external/internal parasites to increase reproductive success/survival
- 8.18. Control 'reservoir' species to reduce parasite burdens/pathogen sources
- 8.19. Conduct veterinary screens of animals before reintroducing/translocating them
- 8.20. Implement continuous health monitoring with permanent vet on site
- 8.21. Avoid contact between wild primates and human-raised primates
- 8.22. Detect & report dead primates and clinically determine their cause of death to avoid disease transmission
- 8.23. Implement a health programme for local communities

9. Threat: Pollution

Garbage/solid waste

- 9.1. Reduce garbage/solid waste to avoid primate injuries

9.2. Remove human food waste that may potentially serve as food sources for primates to avoid disease transmission and conflict with humans

Excess energy

9.3. Reduce noise pollution by restricting development activities to certain times of the day/night

10. Education & Awareness

Awareness & communications

10.1. Educate local communities about primates and sustainable use

10.2. Involve local community in primate research and conservation management

10.3. Install billboards to raise primate conservation awareness

10.4. Regularly play TV & radio announcements to raise primate conservation awareness

10.5. Implement multimedia campaigns using theatre, film, print media, and discussions

10.6. Integrate religion/local taboos into conservation education

11. Habitat Protection

Habitat protection

11.1. Create buffer zones around protected primate habitat

11.2. Legally protect primate habitat

11.3. Establish areas for conservation which are not protected by national or international legislation (e.g. private sector standards & codes)

11.4. Create/protect habitat corridors

11.5. Create/protect forest patches in highly fragmented landscapes

11.6. Demarcate and enforce boundaries of protected areas

Habitat creation or restoration

11.7. Restore habitat corridors

11.8. Plant indigenous trees to re-establish natural tree communities in clear-cut areas

11.9. Plant indigenous fast-growing trees (will not necessarily resemble original community) in clear-cut areas

11.10. Use weeding to promote regeneration of indigenous tree communities

12. Species Management

Species management

12.1. Habituate primates to human presence to reduce stress from tourists/researchers etc.

12.2. Implement birth control to stabilize primate community/population size

- 12.3. Guard habituated primate groups to ensure their safety/well-being
- 12.4. Implement legal protection for primate species under threat

Species recovery

- 12.5. Provide salt licks for primates
- 12.6. Regularly and continuously provide supplementary food to primates
- 12.7. Regularly provide supplementary food to primates during resource scarce periods only
- 12.8. Provide supplementary food for a certain period of time only
- 12.9. Provide supplementary food to primates through the establishment of prey populations
- 12.10. Provide additional sleeping platforms/nesting sites for primates
- 12.11. Provide artificial water sources

Species reintroduction

- 12.12. Translocate (capture & release) wild primates from development sites to natural habitat elsewhere
- 12.13. Translocate (capture & release) wild primates from abundant population areas to non-inhabited environments
- 12.14. Allow primates to adapt to local habitat conditions for some time before introduction to the wild
- 12.15. Reintroduce primates in groups
- 12.16. Reintroduce primates as single/multiple individuals
- 12.17. Reintroduce primates into habitat where the species is absent
- 12.18. Reintroduce primates into habitat where the species is present
- 12.19. Reintroduce primates into habitat without predators
- 12.20. Reintroduce primates into habitat with predators

Ex-situ conservation

- 12.21. Captive breeding and reintroduction of primates into the wild: born and reared in cages
- 12.22. Captive breeding and reintroduction of primates into the wild: limited free-ranging experience
- 12.23. Captive breeding and reintroduction of primates into the wild: born and raised in a free-ranging environment
- 12.24. Rehabilitate injured/orphaned primates
- 12.25. Fostering appropriate behaviour to facilitate rehabilitation

13. Livelihood; Economic & Other Incentives

- 13.1. Provide monetary benefits to local communities for sustainably managing their forest and its wildlife (e.g. REDD, employment)
- 13.2. Provide non-monetary benefits to local communities for sustainably managing their forest and its wildlife (e.g. better education, infrastructure development)

Long-term presence of research-/tourism project

- 13.3. Run research project and ensure permanent human presence at site
- 13.4. Run tourist projects and ensure permanent human presence at site
- 13.5. Permanent presence of staff/manager

Table 5 Challenges

The following list is not exhaustive but includes the most frequently cited challenges to conservation:

- Civil unrest
- Conflict on land tenure
- Corruption
- Lack of capacity/training
- Lack of financial means
- Lack of government support
- Lack of human resources
- Lack of law enforcement
- Lack of logistical means

(Note: in addition to financial + technical issues, the definition of logistics includes flow of information, scheduling delivery of services, etc.)

- Lack of national protection
- Lack of technical means (includes lack of infrastructure, transportation, equipment)
- Lack of transboundary cooperation
- Lack of trust and support from local communities
- Non-function of transmission of local culture to younger generations, eroding taboos through immigration
- Volatility of funding (e.g., mining company change in ownership, drop in prices for minerals)

Table 6 Documented behaviors

The following list is not exhaustive but provides some examples:

- Accumulative stone throwing
- Algae fishing
- Algae scooping
- Ant catching with a wooden 'wand'
- Ant dipping
- Ant eating
- Ant eating without tools
- Ant fishing
- Bathing
- Branch dragging
- Branch shaking
- Branch slapping
- Buttress beating
- Cave use
- Crab fishing
- Drinking palm wine
- Eating snails
- Fluid dipping
- Fruit cleaving
- Hand clapping
- Handclasp grooming
- Honey eating
- Honey eating without tools
- Honey extraction with tools
- Honey extraction without tools
- Hunting and meat eating
- Knuckle-knock
- Leaf biting
- Leaf clipping
- Leaf cushion
- Leaf sponging for drinking water
- Leaf swallowing
- Lethal intragroup aggression
- Marrow pick
- Making ground nests
- Medicinal uses of leaves
- Night-time activity
- Nut cracking
- Pestle pounding
- Pool use
- Seat sticks
- Stem pull-through
- Stepping sticks
- Stone throwing
- Stone tool use
- Termite eating
- Termite eating without tools
- Termite fishing
- Tool assisted hunting
- Water dipping
- Wood pounding

References

- Campbell, G., Head, J., Junker, J. and Nekaris, K.A.I., Primate abundance and distribution: background concepts and methods. In: An Introduction to Primate Conservation. Edited by: Serge A. Wich and Andrew J. Marshall, Oxford University Press (2016). Oxford University Press. DOI 10.1093/acprof:oso/9780198703389.003.0006
- Junker, J., Kühl, H.S., Orth, L., Smith, R.K., Petrovan, S.O. and Sutherland, W.J. (2017) Primate conservation: Global evidence for the effects of interventions. University of Cambridge, UK.