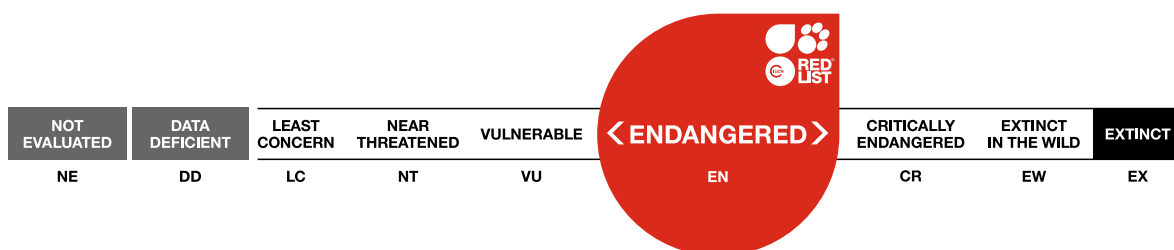


Macaca fascicularis ssp. condorensis, Con Song Long-tailed Macaque

Assessment by: Quyet, L.K. & Hansen, M.F.



View on www.iucnredlist.org

Citation: Quyet, L.K. & Hansen, M.F. 2022. *Macaca fascicularis ssp. condorensis*. The IUCN Red List of Threatened Species 2022: e.T39785A199564028. <https://dx.doi.org/10.2305/IUCN.UK.2022-1.RLTS.T39785A199564028.en>

Copyright: © 2022 International Union for Conservation of Nature and Natural Resources

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder provided the source is fully acknowledged.

Reproduction of this publication for resale, reposting or other commercial purposes is prohibited without prior written permission from the copyright holder. For further details see [Terms of Use](#).

The IUCN Red List of Threatened Species™ is produced and managed by the [IUCN Global Species Programme](#), the [IUCN Species Survival Commission \(SSC\)](#) and [The IUCN Red List Partnership](#). The IUCN Red List Partners are: [ABQ BioPark](#); [Arizona State University](#); [BirdLife International](#); [Botanic Gardens Conservation International](#); [Conservation International](#); [Missouri Botanical Garden](#); [NatureServe](#); [Re:wild](#); [Royal Botanic Gardens, Kew](#); [Sapienza University of Rome](#); [Texas A&M University](#); and [Zoological Society of London](#).

If you see any errors or have any questions or suggestions on what is shown in this document, please provide us with [feedback](#) so that we can correct or extend the information provided.

Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Primates	Cercopithecidae

Scientific Name: *Macaca fascicularis ssp. condorensis* Kloss, 1926

Parent Species: See *Macaca fascicularis*

Common Name(s):

- English: Con Song Long-tailed Macaque, Con Dao Long-tailed Macaque
- Vietnamese: Khỉ đuôi dài côn đảo

Taxonomic Notes:

Fooden (1995, 1996) assessed morphological variation in the long-tailed macaques and confirmed *Macaca fascicularis condorensis* as a well-defined subspecies, a classification followed by Groves (2001), but questioned by Vo Dinh Son *et al.* (n.d).

Assessment Information

Red List Category & Criteria: Endangered B1ab(i,ii,iii)+2ab(i,ii,iii) [ver 3.1](#)

Year Published: 2022

Date Assessed: April 12, 2021

Justification:

This subspecies is listed as Endangered B1ab(i,ii,iii)+2ab(i,ii,iii) because its extent of occurrence (EOO) is < 200 km², its area of occupancy (AOO) is smaller than 100 km², and the population exists in only four locations. It is experiencing a continuing decline in area of occupancy and quality of habitat. This subspecies lives in a national park and is therefore experiencing some protection, however extensive coastal development for mainly tourism activities threatens to the population.

Previously Published Red List Assessments

2020 – Vulnerable (VU)

<https://dx.doi.org/10.2305/IUCN.UK.2020-3.RLTS.T39785A17985464.en>

2008 – Vulnerable (VU)

<https://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T39785A10267597.en>

2000 – Data Deficient (DD)

Geographic Range

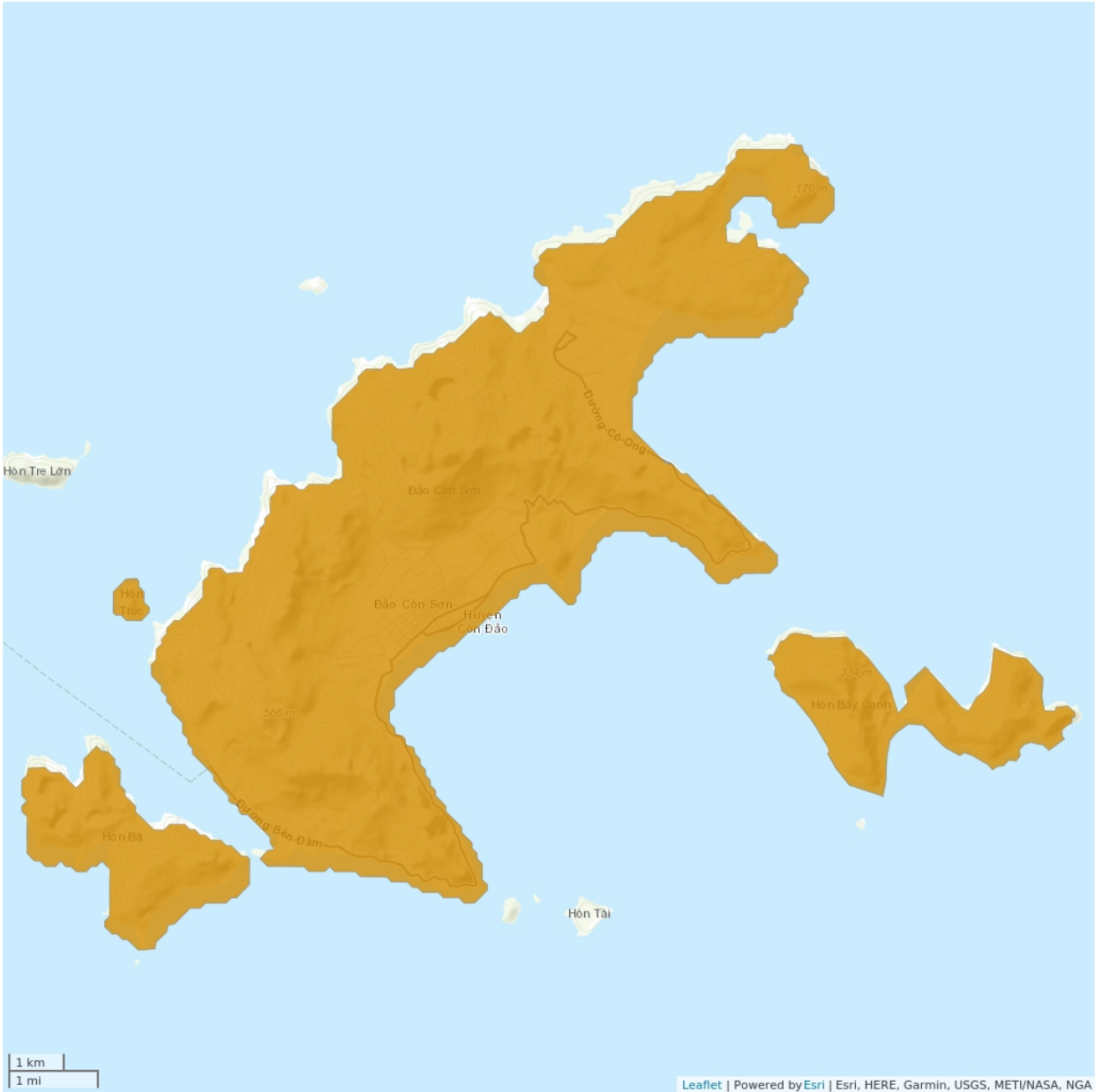
Range Description:

This subspecies occurs in Con Dao National Park on Con Son Island, Hon Ba Island, Bay Canh Island and Hon Troc Island in the Con Dao Archipelago, off the coast of southern Viet Nam (Groves 2001, Rawson *et al.* 2016). Its extent of occurrence (EOO) is < 200 km² and its area of occupancy (AOO) is 72 km².

Country Occurrence:

Native, Extant (resident): Viet Nam

Distribution Map



Legend
EXTANT (RESIDENT)

Compiled by:
IUCN (International Union for Conservation of Nature) 2021



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.

Population

A rapid survey in 2012 recorded four groups with at least 36 individuals and an encounter rate of 0.25 individuals/km in Con Son Island (Hoang Minh Duc 2012). Surveys conducted by Fauna and Flora International Viet Nam in 2014 found two populations distributed across four islands; Con Son, Hon Ba, Bay Cach and Hon Troc. The islands of Con Son and Hon Ba and Con Son and Hon Troc are connected at low tide and thus represent a single population, while Bay Cach is isolated and has a distinct haplotype to the Con Son population (Le Minh pers comm.). The Fauna and Flora International survey recorded 407 individuals across all locations including; 194 individuals on Con Son, 125 individuals on Hon Ba, 88 individuals on Bay Canh and 15 individuals on Hon Troc. The total population is likely to be in the order of 1,500–2,000 individuals (Rawson *et al.* 2016).

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

The subspecies occurs in coastal forests, mangrove and evergreen forest. A survey by Fauna and Flora International found the highest densities of macaques in coastal forests. The Con Dao macaque feeds extensively along the coastline, presumably on shellfish.

Systems: Terrestrial

Use and Trade (see Appendix for additional information)

No use or trade information is available for this subspecies.

Threats (see Appendix for additional information)

The species is primarily threatened by current and future coastal developments on Con Son and Bay Canh islands. These developments, currently mainly for tourism, are going on in various locations along the coastal road. Most significant are the developments in the south of Con Son Island, where Con Son and Hon Ba are linked at low tide by mangrove forest and rocks. Developments in this area are likely to isolate these two important populations, making them more vulnerable to small population effects in the future. The planned extension of the coastal road to include the western side of the island will put further pressure on the population through restriction of access to coastal food resources.

Increasing human-macaque conflict may represent a serious future threat. The National Park management receives constant reports of conflict and complaints from local residents in urban areas adjacent to forested areas. Complaints and persecution/retribution may increase in the future as development increases. Provisioning of macaques in tourist areas also poses a threat to the macaques. Provisioning can alter the ecology of the macaque, impact their health, increase human-macaque aggressive encounters and provide a risk of disease transfer (Fuentes and Gamerl 2005, Jones-Engel *et al.* 2005, Marechal *et al.* 2016).

There is an introduced population of *Macaca arctoides* on Hon Tai Lon island (34 ha). Ten animals were introduced in 1990, apparently for ecotourism purposes, and the group has now expanded to 38 animals, probably by virtue of provisioning by National Park rangers. Long-tailed macaques are known to be good swimmers (e.g. de Ruiter and Geffen 1998, Galdikas and Yeager 1984) however stump-tailed

macaques are not, and so the distance from Hon Tai Lon to Con Son is probably sufficiently far to preclude an accidental introduction into the native long-tail macaque population. It must, however, be insured that no deliberate translocations of this non-native macaque are made to Con Son, Hon Ba or Bay Canh islands.

The subspecies is threatened in the long-term by its small population sizes. The population on Bay Canh is isolated (and genetically distinct) from the Con Son-Hon Ba population. In the future, the Hon Ba population may also be isolated from the Con Son population as coastal development continues. Typhoon frequency and intensity is set to increase due to climate change, and this may impact populations on the islands.

Conservation Actions (see Appendix for additional information)

The species occurs on a small island and within a national park. *Macaca fascicularis* is included in Appendix II of CITES. In Vietnam, the Con Dao subspecies is listed in the Appendix IIB of the Decree 06/2019/ND-CP. National Park authorities should carefully plan future developments to mitigate against the potential impacts of coastal development for tourism as well as the extension of the coastal road, including ensuring that development in the area linking Con Son and Hon Ba islands do not go ahead as this will isolate the very important Hon Ba population and make both it and the Con Son population more vulnerable to small population size effects.

Efforts should be made to reduce the impacts of human-macaque conflict on Con Son. This could be achieved through education of people living adjacent to forest areas both in terms of the importance of the macaque population and for strategies on how to reduce crop foraging through planting unpalatable or inaccessible foods for macaques and planting further from the forest edge (Hoang Minh Duc 2012, Le Xuan Ai and Tran Dinh Hue 2013, Le Khac Quyet pers. obs. 2020). The National park could declare and enforce a no-feeding policy for populations of *M. f. condorensis*. There has been reports of macaques biting humans in human-macaque interfaces.

The non-native *Macaca arctoides* population on Hon Tai Lon should be controlled and confined or removed to ensure it does not spread to the islands inhabited by the Con Dao long-tailed macaque. The species could also pose a threat to other native wildlife populations on the Hon Tai Lon Island.

Genetic work is currently underway by FFI and National University of Viet Nam, Hanoi to determine the genetic distance of the Con Dao population from the mainland subspecies, which could affect the conservation actions mentioned here.

Credits

Assessor(s): Quyet, L.K. & Hansen, M.F.

Reviewer(s): Reuter, K.E.

Contributor(s): Rawson, B.M., Minh, L., Hoang Minh Duc, Covert, H., Van Truong, N., Ong, P. & Richardson, M.

Authority/Authorities: IUCN SSC Primate Specialist Group

Bibliography

- De Ruiter, J. and Geffen, E. 1998. Relatedness of matriline, dispersing males and social groups in long-tailed macaques (*Macaca fascicularis*). *Proceedings of the Royal Society B* 265: 79-87.
- Fooden, J. 1995. Systematic review of Southeast Asia long-tail macaques, *Macaca fascicularis* Raffles (1821). *Fieldiana Zoology* 64: 1-44.
- Fooden, J. 1996. Zoogeography of Vietnamese primates. *International Journal of Primatology* 17(5): 845-899.
- Fuentes, A, Gamerl, S. 2005. Disproportionate participation by age/sex classes in aggressive interactions between long-tailed macaques (*Macaca fascicularis*) and human tourists at Padangtegal monkey forest, Bali, Indonesia. *American Journal of Primatology* 66(2): 197-204.
- Galdikas, B.M.F. and Yeager, C.P. 1984. Crocodile predation on a Crab-Eating Macaque in Borneo. *American Journal of Primatology* 6: 49-51.
- Groves C.P. 2001. *Primate Taxonomy*. Smithsonian Institution Press, Washington, DC, USA.
- Hoang Minh Duc. 2012. Report of Training on animal inventory and monitoring methods for staff of Con Dao National Park [in Vietnamese]. Technical report to Con Dao Management Board and Center for Biodiversity and Conservation. Ho Chi Minh City.
- IUCN. 2022. The IUCN Red List of Threatened Species. Version 2022-1. Available at: www.iucnredlist.org. (Accessed: 21 July 2022).
- Jones-Engel L, Engel GA, Schillaci MA, Rompis A, Putra A, Suaryana KG, Fuentes A, Beer B, Hicks S, White R, Wilson B. 2005. Primate-to-human retroviral transmission in Asia. *Emerging infectious diseases* 11(7): 1028.
- Le Xuan Ai and Tran Dinh Hue. 2013. Conservation of biodiversity for sustainable development of Con Dao Island [in Vietnamese]. *Proceeding of the 5th National Scientific Conference on Ecology and Biological Resources*: 353-359.
- Maréchal L, Semple S, Majolo B, MacLarnon A. 2016. Assessing the effects of tourist provisioning on the health of wild Barbary macaques in Morocco. *PLOS ONE* 11(5): e0155920.
- Pacifici, M., Santini, L., Di Marco, M., Baisero, D., Francucci, L., Grottolo Marasini, G., Visconti, P. and Rondinini, C. 2013. Generation length for mammals. *Nature Conservation* 5: 87–94.
- Rawson B. J., Nguyen Van Truong, Nguyen Duc Tho, Nguyen Huu Dung, Nguyen The Cuong, and Le Hong Son. 2016. Population Status of the Con Dao Macaque (*Macaca fascicularis condorensis*) in Con Dao National Park, Vung Tau Province, Vietnam. In: *Fauna & Flora International Vietnam Programme* (ed.). Hanoi.
- Vo Dinh Son, Hamada, Y., Pham Thanh Dung and Le Hoang Son. n.d.. Report on Con Son long-tailed macaques (*Macaca fascicularis condorensis*) at Con Dao National Park.

Citation

Quyet, L.K. & Hansen, M.F. 2022. *Macaca fascicularis* ssp. *condorensis*. *The IUCN Red List of Threatened Species* 2022: e.T39785A199564028. <https://dx.doi.org/10.2305/IUCN.UK.2022-1.RLTS.T39785A199564028.en>

Disclaimer

To make use of this information, please check the [Terms of Use](#).

External Resources

For [Supplementary Material](#), and for [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.7. Forest - Subtropical/Tropical Mangrove Vegetation Above High Tide Level	-	Suitable	Yes

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Ongoing	Whole (>90%)	-	Medium impact: 6
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
5. Biological resource use -> 5.1. Hunting & trapping terrestrial animals -> 5.1.3. Persecution/control	Ongoing	-	-	Low impact: 3
	Stresses:	2. Species Stresses -> 2.2. Species disturbance		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action in Place
In-place research and monitoring
Action Recovery Plan: No
Systematic monitoring scheme: No
In-place land/water protection
Conservation sites identified: No
Area based regional management plan: No
Occurs in at least one protected area: Yes
Invasive species control or prevention: Not Applicable
In-place species management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No

Conservation Action in Place
In-place education
Subject to recent education and awareness programmes: No
Included in international legislation: Yes
Subject to any international management / trade controls: Yes

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Action Needed
1. Land/water protection -> 1.1. Site/area protection
2. Land/water management -> 2.1. Site/area management
4. Education & awareness -> 4.3. Awareness & communications

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
2. Conservation Planning -> 2.2. Area-based Management Plan
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 72
Continuing decline in area of occupancy (AOO): Yes
Estimated extent of occurrence (EOO) (km ²): 159
Continuing decline in extent of occurrence (EOO): Yes
Number of Locations: 4
Lower elevation limit (m): 0
Upper elevation limit (m): 100

Population
Number of mature individuals: 900-1,000
Population severely fragmented: No
All individuals in one subpopulation: No
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Generation Length (years): 13.9
Movement patterns: Not a Migrant

The IUCN Red List Partnership



The IUCN Red List of Threatened Species™ is produced and managed by the [IUCN Global Species Programme](#), the [IUCN Species Survival Commission \(SSC\)](#) and [The IUCN Red List Partnership](#).

The IUCN Red List Partners are: [ABQ BioPark](#); [Arizona State University](#); [BirdLife International](#); [Botanic Gardens Conservation International](#); [Conservation International](#); [Missouri Botanical Garden](#); [NatureServe](#); [Re:wild](#); [Royal Botanic Gardens, Kew](#); [Sapienza University of Rome](#); [Texas A&M University](#); and [Zoological Society of London](#).