### Macaca mulatta

<table>
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<th>Kingdom</th>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
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<tr>
<td>Animalia</td>
<td>Chordata</td>
<td>Mammalia</td>
<td>Primates</td>
<td>Cercopithecidae</td>
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#### Common name
rhesus monkey (English, Puerto Rico), macaque (English), rhesusmakak (Swedish), macaco (Spanish), mono rhesus (Spanish), rhesusapa (Swedish), rhesus macaque (English), macaque rhésus (French)

#### Synonym

#### Similar species
*Erythrocebus patas*

#### Summary
Macaca mulatta (rhesus macaques) are very popular as laboratory animals and are used for biomedical and behavioural research in the international trade. In Puerto Rico, the introduction and trade with any species of primates is illegal. Wild populations of rhesus macaques represent a potential threat to humans, due to their strength and aggressiveness, and that they carry diseases that can be transmitted to humans. Rhesus macaques invade fruit farms and eat the produce. Being omnivorous and intelligent, they will catch and eat natives birds (and their eggs), lizards, snakes and other species.

[view this species on IUCN Red List](http://www.iucngisd.org/gisd/species.php?sc=1205)

#### Species Description
Adult male rhesus macaques can measure more than 76cm tall and weigh 15kg; adult females are smaller; averaging 47cm in length, and weighing around 5kg. They have a tail that measures between 20 and 23cm long. They have pink-coloured hairless faces, but the rest of their bodies are covered with a brownish-grey coloured fur. Their hands and feet are prehensible with hairless palms with oppossed thumbs. Their upper canine teeth are long and straight, while the lower canines curve inward. They have callous, hairless buttocks. They can live up to 25 years. (Álvarez-Romero & Medellín, 2005)

#### Notes
*Macaca mulatta* individuals have a high frequency for carrying and transmitting the Herpes B virus. Wild population carrying numbers are estimated in the upper 70% while captive populations vary broadly but can be estimated at near 100% (Lutwick & Deaner, 2006). In Australia, *M. mulatta* has been declared a pest animal and must remain in a licensed zoo, wildlife park, or research facility (Lardner, 2007).
Lifecycle Stages
They prefer to stay in a single place, but if perturbed, they can migrate until they find a better or safer place. When a population reaches a size that strain available food sources, small groups, and even individuals, can secede from the original population.

Uses
Rhesus macaques are used as laboratory animals primarily for biomedical and behavioural research. *M. mulatta* are the most studied nonhuman primate both in the field and the laboratory. Medical developments using the rhesus macaque include the development of the rabies, smallpox, and polio vaccines (Cawthon, 2005).

Habitat Description
Rhesus macaques are adapted to a variety of habitats from tropical coastal lowlands to snowy mountain valleys 2,500m above sea level, from dense tropical forest, to temperate pine grooves, to semi-desert conditions. They are opportunistic omnivores, although they prefer fruit. They are excellent swimmers and enjoy living next to water bodies. They prefer living on trees, but descend to floor level to forage in search of food. They are intelligent, social and gregarious and adapt easily to life among humans and domestic animals, if tolerated. However, they are territorial and aggressive and attack in groups whenever they feel threatened. (Álvarez-Romero & Medellín, 2005)

Reproduction
Their reproduction is sexual. Males reach sexual maturity between 2 to 3 years old, while females need to be between 2 to 4 years old. Males are promiscuous and can fertilize many females in a short period of time. Females need to be in their estrous cycle to be fertile and receptive to males, but they can be on estrous multiple times in a year. The estrous cycle lasts from 26 to 28 days. After a gestation period of seven months, females give birth to a single pup, usually every two years. Females reach menopause at about 25 years of age. (Álvarez-Romero & Medellín, 2005)

Nutrition
Although rhesus macaques prefer fruit, they are opportunistic omnivores and will eat what they can grab, including seeds, leaves, branches, tree bark, small animals (vertebrate and invertebrate), eggs, etc. (Álvarez-Romero & Medellín, 2005)

General Impacts
In Puerto Rico, wild rhesus macaques are considered pests on various levels: they frequently invade fruit farms and eat or damage crops; they can carry diseases that can be passed to humans, and their size, strength, teeth and aggressiveness poses a potential for attacks on humans and domestic animals. They are also voracious omnivores and may have an impact on populations of native plants and small animals.

Management Info
In Puerto Rico, whenever wild macaques are reported to the authorities, they are captured, taken to a government holding facility, and either exported or eliminated. A project to find an efficient way to eradicate wild populations began in September, 2007.
Pathway
Rhesus macaques are very popular as laboratory animals and are used for biomedical and
behavioural research in the international trade.

superiores exóticos en México: Diversidad, distribución y efectos potenciales. UNAM. SNIB-
CONABIO Proyecto UO20. México, DF

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ALIEN RANGE
[1] BRAZIL
[1] CUBA
[1] MEXICO
[3] UNITED STATES
[1] COOK ISLANDS
[1] GERMANY
[9] PUERTO RICO

Red List assessed species 3: LC = 3;

*Macaca fuscata* LC
*Sula leucogaster* LC
*Sula sula* LC

BIBLIOGRAPHY
22 references found for *Macaca mulatta*

Management information

Summary: Good biological and distribution information.


Summary: ELI report, Cooperative Prevention of Invasive Wildlife Introduction in Florida, examines the complex issues faced in addressing the issue of wildlife invasions in Florida. The report analyzes state and federal laws and regulations that affect invasive wildlife species prevention efforts and makes recommendations intended to harmonize state and federal agency efforts in Florida under existing legal authorities. It also recommends changes to the existing laws and regulations that would enable agencies to proactively address the harms posed by nonnative wildlife.


GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: Macaca mulatta


Vertebrate Pests Committee (VPC)., 2006. List of Exotic Vertebrate Animals in Australia


General information


ITIS (Integrated Taxonomic Information System). 2007. Online Database Macaca mulatta (Zimmermann, 1780)

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species. In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals. Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=180099 [Accessed 18 November 2007]


Jensen Kristen., 2002. Free Ranging Rhesus Monkeys (Macaca mulatta) and Herpesvirus B: Public health risks in Puerto Rico September 18, 2002 Senior Seminar


Summary: A report that places certain animals in categories and breaks down the regulations for each category in terms of relocation, personal possession and country wide permissions.


Summary: Good account of the species in southern Florida


UNEP-WCMC Species Database, undated. Macaca mulatta Zimmermann, 1780
