

Erythrocebus patas

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Primates	Cercopithecidae

Common name eastern patas monkey (English), husarapa (Swedish), huzaar aap (Dutch), patasapa (Swedish), patas monkey (French), mono patas (Spanish), red monkey (English), patas monkey (English)

Synonym

- Simia rubra* , Gmelin, 1788
- Simia rufa* , Wagner, 1839
- Erythrocebus albigenus* , Elliot, 1909
- Simia ruber albo-fasciatus* , Kerr, 1792
- Erythrocebus formosus* , Elliot, 1906
- Cercopithecus kerstingi* , Matschie, 1906
- Erythrocebus langheldi* , Matschie, 1905
- Simia ruber nigro-fasciatus* , Kerr, 1792
- Cercopithecus poliophaeus* , Heuglin, 1877
- Erythrocebus zechi* , Matschie, 1905
- Erythrocebus patas villiersi* , Dekeyser, 1950
- Erythrocebus whitei* , Hollister, 1910
- Cercopithecus patas albosignatus* , Matschie, 1912
- Cercopithecus circumcinctus* , Reichenbach, 1863
- Cercopithecus patas poliomytax* , Matschie, 1912
- Cercopithecus patas sannio* , Thomas, 1906

Similar species

Summary

Erythrocebus patas is a medium sized terrestrial monkey, native to sub-saharan Africa. Wild populations only rarely come into contact with humans. Their shy behaviour, low densities, cryptic pelage, and large home ranges make it hard to observe them in many parts of their natural range. In some parts of their native range, mainly in west Africa, *E. patas* frequently invade farms, consume produce and are considered pests. The patas monkey is internationally a popular laboratory animal, used for biomedical and behavioural research. Patas monkeys were intentionally released to the Islands of Cueva and Guayacan in Puerto Rico between 1971 and 1981 by the La Parguera Primate Facility. Between 1974-1981 individuals have gradually migrated from the Islands to mainland Puerto Rico and formed free ranging population groups. They are reported to forage in gardens, destroy crops and disturb traffic. The Puerto Rican Department of Natural Resources traps and kills, or translocates individuals in an attempt to control their population.



[view this species on IUCN Red List](#)

Species Description

Erythrocebus patas is a medium sized, distinctive, terrestrial primate, native to sub-saharan Africa. Sexual dimorphism is conspicuous with adult males measuring up to 87cm tall and weighing between 10 and 12.5kg on average; adult females are much smaller, averaging 49cm tall, and around 5-6 to 6.5kg in weight (Nakagawa, 2003; Fedigan, 1992). Adult males also have much larger canines than females and are sometimes described as being brighter in colour (Fedigan, 1992). The fur of the dorsum, cap, neck and tail are reddish-brown. The ventrum and limbs are grey-white in females and bright white in males. Face black, with white, grey or black nose. Cheeks white or grey. Males exhibit a bright blue scrotum. Hands and feet are prehensile with opposed thumbs. *E. patas* is adapted for life in open country, having slender bodies and long limbs suited for ground speed rather than arboreal movement. They are the fastest primate on land and may reach speeds of 55 km/h (Hall, 1965). Although quadrupedal, they assume a bipedal stance when alarmed.

E. patas occur in single-male, multi-female groups for most part of the year. Group size varies widely between 5 – 74 (Chism & Rowell, 1988). Extragroup males live solitary or in all-male groups (Harding & Olson, 1986). Multi-male influxes into heterosexual groups occur during the mating season (Hall, 1965; Harding & Olson, 1986; Struhsaker & Gartlan, 1970). Shy behaviour, low densities, cryptic pelage, and large home ranges makes it hard to observe them in many parts of their natural range (De Jong *et al.*, 2008). In the past, patas monkeys rarely came into conflict with humans, but the growing human population (in Kenya for example) has forced farmers to exploit dryer areas, converting patas habitat into agricultural land (Isbell & Chism, 2007; De Jong *et al.*, 2008). *E. patas* frequently invades farms, consume produce and are considered pests in some parts of their geographical range, mainly in west Africa. Once this primate loses its fear for humans it can act aggressively towards them when threatened. This can be potentially dangerous due to disease transmission between primates and humans.

Notes

There are four proposed subspecies of *Erythrocebus patas* according to Hill (1966) and Kingdon (1997) (*E. p. patas*, *E. p. pyrrhonotus*, *E. p. baumstarki*, and *E. p. villiersi*), opposed to Isbell (in press), who recognises three subspecies (*E. p. patas*, *E. p. pyrrhonotus*, *E. p. baumstarki*), Dorst and Dandelot (1969), who recognised two subspecies (*E. p. patas*, *E. p. pyrrhonotus*) or none by Groves (2001, 2005) and Grubb *et al.* (2003).

E. p. patas occurs from Senegal to Chad, *E. p. pyrrhonotus* occurs from western Ethiopia to northern Uganda and west, northwest, central and south of Kenya (De Jong *et al.*, 2008), *E. p. baumstarki* is restricted to central north Tanzania (De Jong *et al.*, 2008; De Jong *et al.*, 2009) and *E. p. villiersi* is restricted to the Aïr Massif in Niger (Dekeyser, 1950).

Lifecycle Stages

Erythrocebus patas have a birth interval of ca. 1 year. At birth, infants are black and a reddish coat emerges after about three months. For the first four to five months infants receive much attention and grooming. Infants are fully capable of feeding and transporting themselves by 12 months of age (Chism *et al.*, 1984). Complete weaning only occurs when a new infant is born, usually at age one. Allomaternal caretaking by females promotes infant survival (Chism *et al.*, 1984).



Uses

Patas monkeys are used as laboratory animals primarily for biomedical and behavioral research (González-Martínez, 1998).

Habitat Description

Erythrocebus patas inhabits savannah, woodland savannah and grass steppe with thicket clumps. They generally avoid dense vegetation like riverine vegetation and forests. *E. patas* travel long distances using the ground. When disturbed they will either flee using the ground or move into tall trees for safety. For their sleeping sites they require an area with tall trees. *E. patas* needs to drink daily (Struhsaker & Gartlan, 1970; Chism & Rowell, 1988; De Jong *et al.*, 2008). In dry areas, or during the dry season, *E. patas* does not move far from permanent water sources (which can be man-made water sources; Enstam & Isbell, 2004; Isbell & Chism, 2007; De Jong *et al.*, 2008). In their natural habitats, groups have large home ranges varying typically between 23-52 km², depending on their group size, food and water availability (Chism & Rowell, 1988; Enstam & Isbell, 2004; Hall, 1965).

The introduced population of *E. patas* in Puerto Rico occupies substantially smaller home ranges, varying from 3.72 km² to 15.39 km² (González-Martínez, 1998). González-Martínez (1998) suggests that 'the resource availability of Puerto Rico is adequate to sustain high densities in a small home range while maintaining a group size structure similar to that found in the natural habitats.' The Puerto Rican population exhibit territorial behavior, with groups having well established boundaries. Populations occurring in their natural habitats have typically large, highly overlapping home ranges (González-Martínez, 1998).

Reproduction

Sexual, polygenous groups, typically including a variable number of females and one male (Chism & Rowell, 1988; Hall, 1965). Females reach sexual maturity at 2.5-3 years and males reach sexual maturity at 4-4.5 years (Chism *et al.*, 1984). Males leave their natal group around puberty (ca. 3 years; Hall, 1965, Chism *et al.*, 1984, Nakagawa *et al.*, 2003). All-male groups occur. Multi-male influxes into heterosexual groups occur during the mating season (Hall, 1965; Harding & Olson, 1986; Struhsaker & Gartlan, 1970). 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. Their defined reproductive season takes place during the wet summer. Strong correlative findings indicate breeding is largely based on rainfall. After a gestation period that lasts ca. 170 days, females give birth to a single baby, usually every year (González-Martínez, 2004; Gron, 2006).

Nutrition

Erythrocebus patas are omnivorous primates. Their diet varies with changes in food availability due to the seasonality of its environment. *E. patas* primarily feeds on plant material (flowers, fruits, gum, seeds and leaves), insects, and animal material (vertebrates, birds' eggs and nestlings; Isbell, 1998). They catch and eat lizards and fish. In Kenya and Tanzania *E. patas* are strongly associated with *Acacia* woodland (Chism & Rowell, 1988; Isbell, 1998; De Jong *et al.*, 2008; De Jong *et al.*, 2009; Isbell in press). The diet of a population studied on the Laikipia Plateau in Kenya was found to be highly dependent on *Acacia drepanolobium* (feeding on the gum and ants that occupy the swollen thorns of this tree; Isbell, 1998).

In Puerto Rico *E. patas* movement is correlated to the occurrence of their most important food sources: *Tamarindus indica*, *Melicoccus bijugatus*, *Mangifera indica*, *Prosopis juliflora*, *Leucaena leucocephala*, and *Bourrerria succulent*. *E. patas* feeds most often on fruits, seeds or the seed pods of these trees or shrubs. Other items in their diet in Puerto Rico are arthropods and human crops taken from agricultural plots (González-Martínez, 2004; Felix Grana., pers.comm., November 2007).

General Impacts

Erythrocebus patas (individuals originated from Nigeria) were intentionally released to the Islands of Cueva and Guayacan, in Puerto Rico between 1971 and 1981, by the La Parguera Primate Facility. Between 1974-1981 individuals have gradually migrated from the Islands to mainland Puerto Rico and formed free ranging population groups (González-Martínez, 1998). In 1993 the population size on the mainland of Puerto Rico was estimated to be 120 individuals (González-Martínez, 1998). In 2006 the estimated population size was between 514 to 621 individuals (Massanet & Chism, 2008). The rapid expansion of the *E. patas* population in Puerto Rico is due to factors such as lack of non-human predators and abundant resources according to Massanet and Chism (2008).

In Puerto Rico, *E. patas* is considered a pest on various levels. They frequently invade fruit farms and raid crops. Their size, strength, and lack of fear for humans renders them a potential threat to humans and domestic animals. They may carry diseases that can be passed on to humans. Additionally, they are voracious omnivores and may have an impact on populations of native plants and small animals (Felix Grana., pers.comm., November 2007). There is not enough information about their role as predators on the local avifauna but it is likely that bird species in the Sierra, including the 'Critically Endangered (CR)' Puerto Rican nightjar (see [Caprimulgus noctitherus](#) in IUCN Red List of Threatened Species) and the 'Endangered (EN)' yellow-shouldered blackbird (see [Agelaius xanthomus](#) in IUCN Red List of Threatened Species), could suffer from nest predation by exotic species such as *E. patas* (Aukema *et al.*, 2006).

Management Info

Preventative measures: Restrictions on the importation of *Erythrocebus patas*, as well as suitable enclosures, can prevent their establishment in new locations. Trade and sale of all primates is restricted in Puerto Rico (Felix Grana., pers.comm., November 2007).

Physical: An effort to find an efficient way of eradicating wild populations of patas monkeys in Puerto Rico is underway (Felix Grana., pers.comm., November 2007).



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Erythrocebus patas*

Pathway

E. patas is an internationally popular laboratory species, used for biomedical and behavioural research.

Principal source:

[Isbell, L.A. and Chism, J. 2007. Distribution of patas monkeys \(*Erythrocebus patas*\) in Laikipia, Kenya, 1979- 2004. *Am. J. Primatol.* 2007. Vol. 69, No. 11: 1223-1235.](#)

González-Martínez, J. 1998. The ecology of the introduced patas monkey (*Erythrocebus patas*) population of southwestern Puerto Rico. *Am J Primatol* 1998; 45(4):351-363.

De Jong, Y.A., Butynski, T.M. & Nekaris, K.A. 2008. Distribution and conservation of the patas monkey *Erythrocebus patas* in Kenya. *Journal of East African Natural History* 97: 83-102.

De Jong, Y.A., Butynski, T.M., Isbell, L.A. & Lewis, C. 2009. Decline in the geographical range of the southern patas monkey *Erythrocebus patas baumstarki* in Tanzania. *Oryx* 43: 267-274.

Compiler: National Biological Information Infrastructure (NBII), Felix A. Grana Raffucci, Technical Advisor, Puerto Rico Department of Natural & Environmental Resources & IUCN SSC Invasive Species Specialist Group (ISSG)

Review: Yvonne A. de Jong, Eastern Africa Primate, Diversity and Conservation Program, Nocturnal Primate Research Group, Oxford Brookes University, Nanyuki, Kenya.

Publication date: 2007-11-21

ALIEN RANGE

[1] AUSTRALIA

[7] PUERTO RICO

Red List assessed species 2: EN = 2;

[Agelaius xanthomus](#) EN

[Caprimulgus noctitherus](#) EN

BIBLIOGRAPHY

45 references found for *Erythrocebus patas*

Managment information

[Long, L. John., 2003. Introduced Mammals of the World: Their History, Distribution and Influence. CSIRO Publication. A Sample](#)

Summary: Available from: <http://www.publish.csiro.au/samples/IntroducedMammalsSample.pdf> [Accessed 2008 March 24].

[Massam, Marion and Win Kirkpatrick, Peter Mawson, Norm Press, Tony Bennell and Neil Hamilton., Revised 2007. Importing and keeping introduced mammals, birds, reptiles and amphibians in Western Australia. Bulletin 4604 ISSN 1448-0352 February 2004. Department of Agriculture. Government of Western Australia.](#)

Summary: Available from: <http://www.agric.wa.gov.au/content/AAP/OL/BULLETIN4604.PDF> [Accessed 1 September 2008]

[National Biological Information Infrastructure \(NBII\)., 2002. Non-native mammals in the U.S. and Canada. NBII Invasive Species Information Node.](#)

Summary: Available from: http://invasivespecies.nbio.gov/speciesinfo/mammal_list.html [Accessed 2008 March 24].

[Vertebrate Pests Committee \(VPC\)., 2006. List of Exotic Vertebrate Animals in Australia](#)

Summary: Available from: http://www.feral.org.au/feral_documents/VPCListJan06.pdf [Accessed 2008 March 24].

General information



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Erythrocebus patas*

Aukema, J.E., Carlo, T.A. Tossas, A.G. & Anad?n-Irizarry, V. 2006. A Call to Protect Sierra Bermeja for Future Generations. Sociedad Ornitol?gica Puertorrique?a, San Juan, Puerto Rico.

[Bonadio, C. 2000. *Erythrocebus patas* \(on-line\). *Animal Diversity Web*.](#)

Summary: Informative profile on *Erythrocebus patas*.

Available from: http://animaldiversity.ummz.umich.edu/site/accounts/information/Erythrocebus_patas.html [Accessed 23 May 2008].

[Cawthon Lang KA. 2005 July 20. Primate Factsheets: Rhesus macaque \(*Macaca mulatta*\) Taxonomy, Morphology, & Ecology.](#)

Summary: Available from: http://pin.primate.wisc.edu/factsheets/entry/rhesus_macaque [Accessed 2008 March 24].

Chism, J., Olson, D., & Rowell, T. 1984. Life history patterns of female Patas Monkeys. In: M.D. Small (Ed.). *Female Primates: Studies by Women Primatologists* (pp. 175-190). New York: Alan R. Liss.

Chism, J. & Rowell, T. E. 1988. The natural history of Patas Monkeys. In: A. Gautier-Hion, F. Bourli?re, J.-P. Gautier, & J. Kingdon (Eds.). *A Primate Radiation: Evolutionary Biology of the African Guenons* (pp. 412-438). New York: Cambridge University Press.

De Jong, Y.A., Butynski, T.M., Isbell, L.A. & Lewis, C. 2009. Decline in the geographical range of the southern patas monkey *Erythrocebus patas baumstarki* in Tanzania. *Oryx* 43: 267-274.

De Jong, Y.A., Butynski, T.M. & Nekaris, K.A. 2008. Distribution and conservation of the patas monkey *Erythrocebus patas* in Kenya. *Journal of East African Natural History* 97: 83-102.

Dekeyser, P.L. 1950. Contribution ? l'?tude de l'A?r. Mammif?res. M?m. *Bulletin de l'Institut Fran?ais d'Afrique Noire* 10: 388-455.

[Enstam, K.L. and Isbell, L.A. 2004. Microhabitat preference and vertical use of space by patas monkeys \(*Erythrocebus patas*\) in relation to predation risk and habitat structure. *Folia Primatol. \(Basel\)*. Vol. 75, No. 2: 70-84.](#)

Summary: Abstract only

Available from:

[http://www.ncbi.nlm.nih.gov/pubmed/15010579?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=4&log\\$=relatedarticles&logdbfrom=pubmed](http://www.ncbi.nlm.nih.gov/pubmed/15010579?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=4&log$=relatedarticles&logdbfrom=pubmed) [Accessed 23 May 2008].

Enstam, K.L. & Isbell, L.A. 2004. Microhabitat preferences and vertical use of space by Patas Monkeys (*Erythrocebus patas*) in relation to predation risk and habitat structure. *Folia Primatologica* 75: 70-84.

Fedigan, L.M. 1992. *Primate paradigms: sex roles and social bonds*. London: The University of Chicago Press.

Fouquet, Antoine.; Measey, G. John., 2006. Plotting the course of an African clawed frog invasion in Western France. *Animal Biology*, Vol. 56, No. 1, pp. 95-102 (2006)

Gonz?lez-Mart?nez, J. 1998. The ecology of the introduced patas monkey (*Erythrocebus patas*) population of southwestern Puerto Rico. *Am. J. Primatol.* 1998; 45(4):351-363

Summary: Good biological and distribution information.

[Gonz?lez-Mart?nez, J. 2004. The introduced free-ranging rhesus and patas monkey populations of southwestern Puerto Rico. *P. R. Health Sci. J.* Vol. 23, No. 1: 39-46.](#)

Summary: Abstract only.

Available from:

[http://www.ncbi.nlm.nih.gov/pubmed/15125218?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=5&log\\$=relatedarticles&logdbfrom=pubmed](http://www.ncbi.nlm.nih.gov/pubmed/15125218?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=5&log$=relatedarticles&logdbfrom=pubmed) [Accessed 22 May 2008]

[Gron K.J. 2006 December 18. Primate Factsheets: Patas monkey \(*Erythrocebus patas*\) Taxonomy, Morphology, & Ecology.](#)

Summary: Available from: http://pin.primate.wisc.edu/factsheets/entry/patas_monkey [Accessed 2008 March 24].

Groves, C. 2001. *Primate Taxonomy*. New York: Smithsonian Institution Press, New York.

Groves, C.P. 2005. Order Primates. In D.E. Wilson & D.M. Reeder (Eds.). *Mammal species of the world: a taxonomic and geographic reference*. (pp. 111-184). United States of America: The John Hopkins University Press.

Grubb, P., Butynski, T.M., Oates, J.F., Bearder, S.K., Disotell, T.R., Groves, C.P., & Struhsaker, T.T. 2003. Assessment of the diversity of African primates. *International Journal of Primatology* 24: 1301-1357.

Hall, K.R.L. 1965. Behavior and ecology of the wild Patas Monkey, *Erythrocebus patas*, in Uganda. *Journal of Zoology* 148: 15-87.

Harding, R.S.O. & Olson, D.K. 1986. Patterns of mating among male Patas Monkeys (*Erythrocebus patas*). *American Journal of Primatology* 11: 343-358.

Hill, W.C.O. 1966. *Primates. Comparative Anatomy and Taxonomy. Vol. VI, Catarrhini Cercopithecoidea Cercopithecinae*. Edinburgh: Edinburgh University Press.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Erythrocebus patas*

[Isbell, L.A. 1998. Diet for a small primate: insectivory and gummivory in the \(large\) patas monkey \(*Erythrocebus patas pyrrhonotus*\) Am. J. Primatol. 1998. Vol. 45, No. 4: 381-398.](#)

Summary: Abstract only.

Available from:

[http://www.ncbi.nlm.nih.gov/pubmed/9702283?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=2&log\\$=relatedarticles&logdbfrom=pubmed](http://www.ncbi.nlm.nih.gov/pubmed/9702283?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DiscoveryPanel.Pubmed_Discovery_RA&linkpos=2&log$=relatedarticles&logdbfrom=pubmed) [Accessed 22 May 2008].

[Isbell, L.A. and Chism, J. 2007. Distribution of patas monkeys \(*Erythrocebus patas*\) in Laikipia, Kenya, 1979- 2004. Am. J. Primatol. 2007. Vol. 69, No. 11: 1223-1235.](#)

Summary: This study examines a populations of patas monkeys in Laikipia, Kenya.

Available from: <http://tpyoung.ucdavis.edu/publications/2007IsbellChismAJP.pdf> [Accessed 23 May 2008].

Isbell, L.A. (in press). Patas monkey *Erythrocebus patas*. In: (T.M. Butynski, J. Kingdon & J. Kalina (Eds.). *The Mammals of Africa*: Amsterdam, Netherlands: Elsevier.

[ITIS \(Integrated Taxonomic Information System\), 2007. Online Database *Erythrocebus patas* \(Schreber, 1775\)](#)

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=573015 [Accessed 18 November 2007]

[Jensen K, Alvarado-Ramy F, Gonz?lez-Mart?nez J, Kraiselburd E, Rull?n J. 2004. B virus and free-ranging macaques, Puerto Rico. Emerg Infect Dis \[serial online\] 2004 Mar](#)

Summary: Available from: <http://www.cdc.gov/ncidod/EID/vol10no3/03-0257.htm> [Accessed 2008 March 24].

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

Kepler, Cameron B. 1978. The Breeding Ecology of Sea Birds on Monito Island, Puerto Rico. *The Condor*, Vol. 80, No. 1. (Spring, 1978), pp. 72-87.

Kingdon, J. 1997. *The Kingdon Field Guide to African Mammals*. New York: Academic Press.

[Kingdon, J., Butynski, T.M. & De Jong, Y. 2008. *Erythrocebus patas*. In: IUCN 2009. IUCN Red List of Threatened Species. Version 2009.2.](#)

Summary: Available from <http://www.iucnredlist.org/apps/redlist/details/8073/0> [Accessed 16 Febuary, 2010]

Lardner, S., Larner, K. 2007. A Guide to the Control Over the Possession, Trade and Movement of Declared Pest Animals. State of Victoria Department of Primary Industries.

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.

Lernould, J.M. 1988. Classification and geographical distribution of guenons: a review. A. In: Gautier-Hion, F. Bourli?re, J.-P. Gautier, & J. Kingdon (Eds.). *A Primate Radiation: Evolutionary Biology of the African Guenons* (pp. 54-78). New York: Cambridge University Press.

[Lutwick, Larry., Robert O Deaner., 2006. Herpes B. IN eMedicine \(Eds\) Thomas J Marrie, Francisco Talavera, Charles V Sanders, Eleftherios Mylonakis, Burke A Cunha.](#)

Summary: Available from: <http://www.emedicine.com/Med/topic3367.htm> [Accessed 2008 March 24].

Massanet, M. & Chism, J. 2008. The abundance, distribution and habitat use of the introduced patas monkey (*Erythrocebus patas*) population in Puerto Rico. *American Society of Primatologists Conference*.

[McCormack, Gerald., 2007. Cook Islands Biodiversity Database, Version 2007.2. Cook Islands Natural Heritage Trust, Rarotonga.](#)

Summary: Available from: <http://cookislands.bishopmuseum.org> [Accessed 11 May, 2010].

Nakagawa, N. 2003. Difference in food selection between patas monkeys (*Erythrocebus patas*) and tantalus monkeys (*Cercopithecus aethiops tantalus*) in Kala Maloue National Park, Cameroon, in relation to nutrient content. *Primates* 44: 3-11.

Nakagawa, N., Ohsawa, H., & Muroyama, Y. 2003. Life history parameters of a wild group of West African Patas Monkeys (*Erythrocebus patas patas*). *Primates* 44: 281-290.

Struhsaker, T. T. & Gartlan, J. S. 1970. Observations on the behaviour and ecology of the Patas Monkey (*Erythrocebus patas*) in the Waza Reserve, Cameroon. *Journal of Zoology (London)* 161: 49-63.

Taub D.M; Mehlman P., 1989. Development of the Morgan Island rhesus monkey colony.. P R Health Sci J. 1989 Apr;8(1):159-69.

[UNEP-WCMC Species Database, undated. *Erythrocebus patas* \(Schreber, 1775\)](#)

Summary: Available from:

<http://sea.unep-wcmc.org/isdb/Taxonomy/tax-species-result.cfm?displaylanguage=eng&source=animals&Genus=Erythrocebus&Species=patas&Country=&tabname=names> [Accessed 18 November 2007]



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Erythrocebus patas*

Wolfheim, J.H. 1983. *Primates of the World: Distribution, Abundance, and Conservation*. Seattle: University of Washington Press.