

Herpestes javanicus  [简体中文](#) [正體中文](#)

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Mammalia	Carnivora	Herpestidae

Common name newla (Hindi, India), small Indian mongoose (English), Kleiner Mungo (German), mangouste (French), mangus (Hindi), mweyba (Burmese), beji (Bengali)

Synonym

Similar species

Summary

The small Indian mongoose (*Herpestes auropunctatus*) has been introduced to many islands worldwide for control of rats and snakes, mainly in tropical areas, but also to islands in the Adriatic Sea. Moreover, it has been introduced successfully in two continental areas: the northeast coast of South America and a Croatian peninsula. Mongooses are diurnal generalist carnivores that thrive in human-altered habitats. Predation by mongoose has had severe impacts on native biodiversity leading to the decline and extirpation of native mammals, birds, reptiles, and amphibians. At least seven species of native vertebrates, including mammals, birds, reptiles, and amphibians, have almost disappeared on Amami-oshima Island since the introduction of the mongoose in 1979. In addition, mongoose carries human and animal diseases, including rabies and human *Leptospira* bacterium.



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

Species Description

The small Indian mongoose has a slender body with short legs. The head is elongated with a pointed muzzle. The tail is robustly muscular at the base and tapers gradually throughout its length. Length of head and body is 509 to 671mm. Ears are short and project only slightly beyond the fur. Feet have five toes with long sharp non-retractile claws. Hair is short. Both sexes have an extensible anal pad with ducted glands lateral to the anus. Fur is soft, pale to dark brown flecked with golden spots. Underside is paler than rest of body. Eyes are amber/brown but are blue green in young animals. There is distinct sexual dimorphism. Females range in length from 509 to 578mm with a mean of 540mm. Body mass at sexual maturity ranges from 305 to 662 g with a mean of 434g. Males have a wider head and more robust body ranging in length from 544 to 671mm with a mean of 591mm (Nellis, 1989).

Notes

The genus *Herpestes* contains 10 species (Nowak 1999) and is considered the oldest genus within the order Carnivora, dating back approximately 30 million years (Hinton & Dunn 1967). The native distribution of the small Indian mongoose [*Herpestes auropunctatus* (Hodgson 1836)] stretches from Iraq in the west to Myanmar in the east, and from northern Pakistan southwards throughout the Indian subcontinent. East of Myanmar (near the Salween River), the small Indian mongoose is replaced by the Javan mongoose, *Herpestes javanicus* (E. Geoffroy Saint-Hilaire, 1818), which recently has been recognized as a separate species (G. Veron, personal communication). The small Indian mongoose (but not the Javan mongoose) has been introduced to many islands worldwide for control of rats and snakes, mainly in tropical areas, but also to islands in the Adriatic Sea. Moreover, it has been introduced successfully in two continental areas: the northeast coast of South America (Husson 1960) and a Croatian peninsula (Tvrtkovic & Krystufek 1990; Krystufek & Tvrtkovic 1992). Almost all introduced populations arose from very small numbers of founding individuals, and the introduction history is often well documented" (from Thulin *et al* 2006)

Lifecycle Stages

Gestation 42-50 days, weaning 5 weeks, sexual maturity 10 months, total life expectancy in wild animals 3-4 years.

Uses

The small Indian mongoose was introduced as a biocontrol agent to control rats in cane fields but not particularly effective and the enormous cost to native species far outweighed any benefit.

Habitat Description

The small Indian mongoose is reported to prefer dry habitats and this is supported by the observation that trap success falls to zero in rainy weather in most cases. Habitat preferences in the native range have not been investigated but it seems the species prefers grassland and secondary growth to dense forest. Mongooses are also found around human habitation. Studies on Caribbean islands have shown a clear preference for dry natural areas are preferred over rainy areas. Mongooses reach dense population on Hawai'i and in this case they begin to exploit wet areas (Hays and Conant, 2007). In Mauritius tended to be found in rocky areas, riparian habitats and mature forest over scrub, long grass (sugar cane plantations), short grass and paths (Roy *et al.* 2002). In Puerto Rico male mongooses from the rain forest areas were larger than those in dry forests (Vilella, 1998).

Reproduction

Placental, sexual. Breeds two or three times a year, no real season, though there are breeding peaks. Two litters of three youngs per female per year. Females can breed from the age of 10 months.

Nutrition

Small Indian mongoose are generalist carnivores that thrive in human-altered habitats. Diet has not been investigated in the native range but a large number of studies have investigated diet in areas where the species has been introduced. Small Indian mongoose diet normally consists of mammals, birds, herpetofauna, invertebrates and plant material. Proportions of these dietary items vary according to availability and location of the study. Some populations are largely insectivorous; others may eat a diet largely consisting of fruit for part of the year (Hays and Conant, 2007). This high level of dietary flexibility has contributed to the small Indian mongoose's success as an invasive species.

General Impacts

The small Indian mongoose has had a major impact on native species in the areas where it has been introduced. In most cases the native wildlife in these areas evolved in the absence of predatory mammals so they are particularly threatened by mongoose predation. Species considered to have been driven extinct through mongoose predation are the barred-wing rail (see [Nesoclopeus poecilopterus in IUCN Red List of Threatened Species](#)) in Fiji (Hays and Conant, 2007). The Critically Endangered (CR)' and 'Possibly Extinct' Jamaica petrel (see [Pterodroma caribbaea in IUCN Red List of Threatened Species](#)) suffered drastic decline in numbers in the 19th century presumably due to predation by mongoose (capable of taking incubating adults) and rats (BirdLife International 2004). Mongooses have also been implicated in the decline of many other bird, reptile and mammal species. Mongooses also eat invertebrates but the impact of this predation on invertebrate populations has not been studied.

In the Caribbean, mongooses prey on the 'Critically Endangered (CR)' hawksbill turtle (see [Eretmochelys imbricata in IUCN Red List of Threatened Species](#)) eggs in fragmented beach habitat (Leighton *et al* 2008, 2009, 2010, 2011) . Trapping around vulnerable beaches led to much greater breeding success for the turtles (Coblentz and Coblentz, 1985).

Mongooses on Mauritius have been blamed for the extirpation of introduced game birds and the decline of endemic species such as the 'Endangered (EN)' pink pigeon (see [Nesoenas mayeri in IUCN Red List of Threatened Species](#)) (Roy *et al.* 2002).

At least seven species of native vertebrates, including mammals, birds, reptiles, and amphibians, have almost disappeared on Amami-oshima Island since the introduction of the mongoose in 1979. The mongoose has been shown to have a strong negative effect on the 'Endangered (EN)' Amami rabbit (see [Pentalagus furnessi in IUCN Red List of Threatened Species](#)) (Watari *et al.* 2008).

In addition, mongoose are carriers of human and animal diseases, including rabies and human *Leptospira* bacterium.

Management Info

Physical: Trapping is commonly used to remove small Indian mongooses from sensitive areas. It is often very successful at removing animals in the short term. Unfortunately, trapping programmes need to be run almost constantly as mongooses re-colonise trapped areas very quickly (Roy *et al.* 2003; Hays and Conant, 2007). Fencing has been proposed as a possible control method in Mauritius but predator proof fences are expensive and inflexible should the area that needs to be protected change (Roy *et al.* 2002).

Chemical: Diphacinone anticoagulant poison has been used to control mongooses in Hawai'i (Hays *et al.* 2007). The use of this toxin has been considered in Mauritius but poisoning methods would have to be adapted to prevent poisoning of non-target species (Roy *et al.* 2002).

Integrated management: There is concern in Mauritius that removing mongooses without also removing cats and rats will be disastrous for native species because it may lead to increased rat and cat populations (Roy *et al.* 2002).

Pathway

Introduced for biological control of rats and snakes in agricultural habitats, from which the animals spread throughout local areas within decades.

Principal source:

Compiler: IUCN SSC Invasive Species Specialist Group

Updates with support from the Overseas Territories Environmental Programme (OTEP) project XOT603, a joint project with the Cayman Islands Government - Department of Environment

Review: Dr. Sugoto Roy (Coordinator); Hebridean Mink Project. Central Science Laboratory Sand Hutton, York UK



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Herpestes javanicus*

Publication date: 2011-05-25

ALIEN RANGE

[1] ANTIGUA AND BARBUDA	[1] BAHAMAS
[1] BERMUDA	[1] COLOMBIA
[1] COMOROS	[1] COSTA RICA
[1] CROATIA	[1] CUBA
[1] DOMINICAN REPUBLIC	[2] FIJI
[1] FRENCH GUIANA	[1] GRENADA
[2] GUADELOUPE	[1] GUYANA
[1] HAITI	[1] HONDURAS
[1] INDONESIA	[1] JAMAICA
[2] JAPAN	[1] MARTINIQUE
[1] MAURITIUS	[1] PANAMA
[1] PUERTO RICO	[1] SAINT KITTS AND NEVIS
[1] SAINT LUCIA	[1] SAINT MARTIN (FRENCH PART)
[1] SAINT VINCENT AND THE GRENADINES	[1] SURINAME
[1] TRINIDAD AND TOBAGO	[1] UNITED STATES
[2] VIRGIN ISLANDS, BRITISH	[2] VIRGIN ISLANDS, U.S.

Red List assessed species 11: CR = 3; EN = 1; LC = 7;

[Emoia nigra](#) **LC**

[Eretmochelys imbricata](#) **CR**

[Geotrygon mystacea](#) **LC**

[Porphyrio porphyrio](#) **LC**

[Porzana tabuensis](#) **LC**

[Rallus longirostris](#) **LC**

[Emoia trossula](#) **EN**

[Gallirallus philippensis](#) **LC**

[Hypsirhynchus ater](#) **CR**

[Porzana cinerea](#) **LC**

[Pterodroma phaeopygia](#) **CR**

BIBLIOGRAPHY

139 references found for *Herpestes javanicus*

Management information

Abe S. (2011) Improvement of a kill trap for mongoose eradication projects on two islands in Japan. Island invasives: eradication and management. IUCN, Gland, Switzerland. 522.

Abe S. (2022) Final stage of invasive alien mongoose eradication from Amami-Oshima Island by the Amami Mongoose Busters. Landscape Research. 86(2): 110-113.

Abe S. Yamada F. Handa Y. Takatsuki Y. Abe Y. Yamashita R. and Fukuda M. (2006) Reproductive responses of the mongoose (*Herpestes javanicus*), to control operations on Amami-Oshima Island, Japan. In Koike F. Clout M.N. Kawamichi M. De Poorter M. and Iwatsuk K. (eds), Assessment and Control of Biological Invasion Risks. Shokadoh Book Sellers, Kyoto, Japan and IUCN, Gland, Switzerland, 157-164.

Algar, D. and Burrows, N.D. 2004. Feral cat control research: Western Shield review, February 2003. Conservation Science Western Australia 5:131-163.

Algar, D.; Angus, G.J.; Brazell, R.I.; Gilbert, C. and Withnell, G.B. 2001. Farewell felines of Faure. Report to Australian Wildlife Conservancy. Department of Conservation and Land Management, Wanneroo, Western Australia. 12 pp.

[Atkinson, I. A. E. and Atkinson, T. J. 2000. Land vertebrates as invasive species on islands served by the South Pacific Regional Environment Programme. In: Invasive Species in the Pacific: A Technical Review and Draft Regional Strategy. South Pacific Regional Environment Programme, Samoa: 19-84.](#)

Summary: This report reviews available information on the adverse effects of 14 alien vertebrates considered to be significant invasive species on islands of the South Pacific and Hawaii, supplementing the authors experience with that of other workers.

Barun, A.; Budinski, I. and Simberloff, D. 2008. A ticking time-bomb? The small Indian mongoose in Europe. Aliens 26:14-16.

Barun, A. Hanson, C. Campbell, K. and Simberloff, D. (2011). A review of small Indian mongoose management and eradications on islands. Island invasives: eradication and management. IUCN, Gland, Switzerland. 17-25.

[Barun, A., Simberloff, D., Tvrtkovic, N. & Pascal, M., 2011. Impact of the introduced small Indian mongoose \(*Herpestes auropunctatus*\) on abundance and activity time of the introduced ship rat \(*Rattus rattus*\) and the small mammal community on Adriatic islands, Croatia. NeoBiota 11 \(2011\) : 51-61 doi: 10.3897/neobiota.11.1819](#)

Summary: Available from:

<http://www.pensoft.net/journals/neobiota/article/1819/abstract/impact-of-the-introduced-small-indian-mongoose-herpestes-auropunctatus-on-abundance-and-activity-time-of-the-introduced-> [Accessed December 1 2011]

[Bomford, M., 2003. Risk Assessment for the Import and Keeping of Exotic Vertebrates in Australia. Bureau of Rural Sciences, Canberra.](#)

Summary: Available from: <http://www.feral.org.au/wp-content/uploads/2010/03/PC12803.pdf> [Accessed August 19 2010]

Global Invasive Species Database (GISD) 2026. Species profile *Herpestes javanicus*. Available from:

<https://www.iucngisd.org/gisd/species.php?sc=86> [Accessed 19 April 2026]

Pag. 4

- Campbell, K.J.; Harper, G.; Algar, D.; Hanson, C.C.; Keitt, B.S. and Robinson, S. 2011. Review of feral cat eradications on islands. In: Veitch, C.R.; Clout, M.N. and Towns, D.R. (eds.). *Island invasives: Eradication and Management*, IUCN, (International Union for Conservation of Nature), Gland, Switzerland, pp. XX.
- Coblentz, B. E. and Coblentz, B. A 1985. Control of the Indian mongoose *Herpestes auropunctatus* on St John, US Virgin Islands. *Biological Conservation* 33: 281-288.
- Creekmore, T. E., Linhart, S. B., Corn, J. L., Whitney, M. D., Snyder, B. D. and Nettles, V. F. 1994. Field-evaluation of baits and baiting strategies for delivering oral vaccine to mongooses in Antigua, West Indies. *Journal Of Wildlife Diseases* 30: 497-505.
- Daltry J.C., 2006. Reintroduction of the critically endangered Antiguan racer *Alsophis antiguae* to Green Island, Antigua. *Conservation Evidence*, 2006. 3, 36-38. www.ConservationEvidence.com
- Daltry J.C., 2006. Reintroduction of the critically endangered Antiguan Racer *Alsophis antiguae* to Rabbit Island, Antigua. *Conservation Evidence*, 2006 3, 33-35 www.ConservationEvidence.com.
- Fisher, P. and O'Connor C. 2007. Oral toxicity of paminopropiophenone to ferrets. *Wildlife Research* 34:19-24.
- Funakoshi, K.; Kubo, S.; Nakumo, S.; Shioya, K.; Okada, S., 2007. The distribution of invasive small Indian mongooses, *Herpestes javanicus*, on Amami-Oshima Island based on the use of tracking-tunnels. *Japanese Journal of Conservation Ecology [Jap. J. Conserv. Ecol.]*. Vol. 12, no. 2, pp. 156-162. Nov 2007.
- Genovesi, P. 2007. Limits and potentialities of eradication as a tool for addressing biological invasions. In: Nentwig, W. (ed.). *Biological Invasions, Ecological Studies* 193, Springer, pp 385-400.
- Gorman, M. L. 1976a. A mechanism for individual recognition by odour in *Herpestes auropunctatus* (Carnivora: Viverridae). *Animal Behavior*. 24:141-146.
- Gorman, M. L. 1976b. Seasonal changes in the reproductive pattern of feral *Herpestes auropunctatus* (Carnivora: Viveridae), in the Fijian islands. *Journal of Zoology* 178:237-246.
- Hanson, C. C. 2007. Restoring the Goat Islands for creating a suitable environment for reintroducing Jamaican iguanas: goat, cat, and mongoose eradication plan - 2007-DRAFT-03. Unpublished Report, Island Conservation, Santa Cruz, CA.
- Hays, W.S.T. and Conant, S. 2003. Male social activity in the small Indian mongoose *Herpestes javanicus*. *Acta Theriologica* 48:485-494.
- Henderson, R.W. and Berg, C.S. 2006. The herpetofauna of Grenada and the Grenada Grenadines: Conservation concerns. *Applied Herpetology* 3:197-213.
- Howald, G.; Donlan, C.; Galvan J.; Russel, J.; Parkes, J.; Samaniego, A.; Wang, Y.; Veitch, D.; Genovesi, P.; Pascal, M.; Saunders, A. and Tershy B. 2007. Invasive rodent eradication on islands. *Conservation Biology* 21:1258-1268.
- Ishii, N. 2003. Controlling mongooses introduced to Amami-Oshima Island: a population estimate and program evaluation. *Japanese Journal of Conservation Ecology* 8:73-82.
- [IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4.](http://www.iucnredlist.org/)
- Summary:** The IUCN Red List of Threatened Species provides taxonomic, conservation status and distribution information on taxa that have been globally evaluated using the IUCN Red List Categories and Criteria. This system is designed to determine the relative risk of extinction, and the main purpose of the IUCN Red List is to catalogue and highlight those taxa that are facing a higher risk of global extinction (i.e. those listed as Critically Endangered, Endangered and Vulnerable). The IUCN Red List also includes information on taxa that are categorized as Extinct or Extinct in the Wild; on taxa that cannot be evaluated because of insufficient information (i.e. are Data Deficient); and on taxa that are either close to meeting the threatened thresholds or that would be threatened were it not for an ongoing taxon-specific conservation programme (i.e. are Near Threatened).
- Available from: <http://www.iucnredlist.org/> [Accessed 25 May 2011]
- [IUCN/SSC Invasive Species Specialist Group \(ISSG\), 2010. A Compilation of Information Sources for Conservation Managers.](http://www.iucnredlist.org/)
- Summary:** This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.
- Johnston, M.; Algar, D.; O'Donoghue, M. and Morris, J. 2011. Field efficacy of the Curiosity feral cat bait on three Australian islands. In: Veitch, C.R.; Clout, M.N. and Towns, D.R. (eds.). *Island invasives: Eradication and Management*, IUCN, (International Union for Conservation of Nature), Gland, Switzerland, pp. XX.
- Kotaka, Nobuhiko; Kudaka, Masakazu; Takehara, Kenji; Sato, Hiroki, 2009. Ground use pattern by forest animals and vulnerability toward invasion by *Herpestes javanicus* into Yambaru, northern Okinawa Island, southern Japan. *Japanese Journal of Ornithology*. 58(1). APR 2009. 28-45.
- Kusuda, Satoshi; Hoson, Osamu; Nakaya, Yumiko; Ogura, Go; Oshiro, Seikou; Takara, Junji; Matsuda, Ayano; Doi, Osamu; Nagamine, Takashi; Murata, Koichi, 2010. Induced estrus in female small Asian mongooses (*Herpestes javanicus*) for the purpose of controlling invasive alien species in Okinawa Island Mammal Study. 35(3). SEP 2010. 217-219.
- Leighton, P. A.; Horrocks, J. A.; Kramer, D. L., 2011. Predicting nest survival in sea turtles: when and where are eggs most vulnerable to predation? *Animal Conservation*. 14(2). APR 2011. 186-195.
- Leighton, Patrick A.; Horrocks, Julia A.; Kramer, Donald L., 2009. How depth alters detection and capture of buried prey: exploitation of sea turtle eggs by mongooses. *Behavioral Ecology*. 20(6). NOV-DEC 2009. 1299-1306.
- Leighton, Patrick A.; Horrocks, Julia A.; Kramer, Donald L., 2010. Conservation and the scarecrow effect: Can human activity benefit threatened species by displacing predators? *Biological Conservation*. 143(9). SEP 2010. 2156-2163.
- Leighton, Patrick A.; Horrocks, Julia A.; Krueger, Barry H.; Beggs, Jennifer A.; Kramer, Donald L., 2008. Predicting species interactions from edge responses: mongoose predation on hawksbill sea turtle nests in fragmented beach habitat. *Proceedings of the Royal Society Biological Sciences Series B*. 275(1650). NOV 7 2008. 2465-2472.
- Linhart, S.B. 1993. Bait formulation and distribution for oral rabies vaccination of domestic dogs: an overview. *Onderstepoort Journal of Veterinary Research* 60:479-490.

- Linhart, S.B.; Baer, G.M.; Balderas Torres, J.M.; Engeman, R.M.; Collins, E.F.; Meslin, F. X.; Schumacher, C.L.; Taweel (el-), A.H. and Wlodkowski, J.C. 1997. Acceptance of candidate baits by domestic dogs for delivery of oral rabies vaccines. *Onderstepoort Journal of Veterinary Research* 64:115-124.
- Linhart, S.B.; Creekmore, T.E.; Corn, J.L.; Whitney, M.D.; Snyder, B.D. and Nettles, V.F. 1993. Evaluation of baits for oral rabies vaccination of mongooses: Pilot field trials in Antigua, West Indies. *Journal of Wildlife Diseases* 29:290-294.
- Lorvelec, O., Delloue, X., Pascal, M., & mege, S. 2004. Impacts des mammifères allochtones sur quelques espèces autochtones de l'île Fajou (Réserve Naturelle du Grand Cul-de-sac Marin, Guadeloupe), établis à l'issue d'une tentative d'éradication. *Revue D'Ecologie - La Terre et La Vie* 59(1-2): 293-307.
- Summary:** French language. Information about impacts, eradication methodology, results and discussion in French.
- Louette, M. 1987. Poissons dulcaquicoles, batraciens, reptiles et mammifères de l'archipel des Comores. *Ya Mkobe* 3:4-7.
- Marks, C.A.; Johnston, M.J.; Fisher, P.M.; Pontin, K. and Shaw, M.J. 2006. Differential particle size ingestion: promoting target-specific baiting of feral cats. *Journal of Wildlife Management* 70:1119-1124.
- McNair, Douglas. (2003). Population Estimate, Habitat Associations, and Conservation of the St. Croix Ground Lizard *Ameiva polops* at Protestant Cay, United States Virgin Islands. *Caribbean Journal of Science*. 39.
- [Ministry of the Environment, Japan. 2024, September 3. Declaration of the Eradication of the Small Indian Mongoose \(Designated Invasive Alien Species\) in Amami Oshima Island \[Press release\]. https://www.env.go.jp/en/press/press_03205.html](https://www.env.go.jp/en/press/press_03205.html)
- Morikawa M., 2014. Eradication project of invasive alien mongooses in Japan - Okinawa and Amami-oshima Island- Meeting documents - Capacity-building workshop for Small Island Developing States to achieve Aichi Biodiversity Target 9 on Invasive Alien Species. 14 - 15 June 2014 - Montreal, Canada
- Morley, C.G. 2004. Has the invasive mongoose *Herpestes javanicus* yet reached the island of Taveuni, Fiji? *Oryx* 38:457-460.
- Morrison, C.Morrison, C.; Naikatini, A.Naikatini, A.; Thomas, N.Thomas, N.; Rounds, I.Rounds, I.; Thaman, B.Thaman, B.; Niukula, J.Niukula, J., 2004. Rediscovery of an endangered frog *Platymantis vitianus*, on mainland Fiji: implications for conservation and management. *Pacific Conservation Biology*. 10(4). 2004. 237-240.
- Murphy, E.C.; Eason, C.T.; Hix, S. and MacMorran, D. 2007. Developing a new toxin for potential control of feral cats, stoats and wild dogs in New Zealand. In: Witmer, G.W.; Pitt W.C. and Fagerstone K.A. (eds.). *Managing Vertebrate Invasive Species: Proceedings of an International Symposium*. USDA/APHIS Wildlife Services, National Wildlife Research Center, Fort Collins, Colorado, USA.
- Murphy, E.C.; Shapiro, L.; Hix, S.; MacMorran, D. and Eason, C.T. 2011. Control and eradication of feral cats: field trials of a new toxin. In: Veitch, C.R.; Clout, M.N. and Towns, D.R. (eds.). *Island Invasives: Eradication and Management*, IUCN, (International Union for Conservation of Nature), Gland, Switzerland, pp. XX.
- [National Park Service. 1993. Proposal for Inventory and Monitoring Programs: Virgin Islands National Park: Buck Island Reef National Monument; Dry Tortugas National Park. National Park Service.](#)
- Summary:** Available from: http://cars.er.usgs.gov/Coral_Reef_Ecology/Virgin_Islands_Monitoring_Prog/l_m_Proposal.PDF [Accessed 25 May 2011]
- Perry G. & G.P. Gerber, 2006. Conservation of amphibians and reptiles in the British Virgin Islands: Status and patterns. *Applied Herpetology* 3: 237-256
- Peters, D.; Wilson, L.; Mosher, S.; Rohrer, J.; Hanley, J.; Nadig, A.; Silbernagle, M.; Nishimoto, M. and Jeffrey, J. 2011. Small Indian mongoose - management and eradication using DOC 250 kill traps, first lessons from Hawaii. In: Veitch, C.R.; Clout, M.N. and Towns, D.R. (eds.). *Island Invasives: Eradication and Management*. IUCN (International Union for Conservation of Nature), Gland, Switzerland, pp. XX.
- Pimentel, D. 1955b. The control of the mongoose in Puerto Rico. *American Journal of Tropical Medicine and Hygiene* 4:147-151.
- Pitt, W.C. and Sugihara, R.T. 2009. Spatial (foraging distance) and temporal (time and frequency of visitation) responses of marked small Indian mongooses (*Herpestes auro-punctatus*) to selected food baits in Hawaii. USDA, APHIS, WS, NWRC. Hilo, HI, 81 pp.
- Powell, R. and Henderson, R.W. 2005. Conservation status of Lesser Antillean reptiles. *Iguana* 12:2-17.
- [Roy, S. S., C. G. Jones and S. Harris., 2002. An ecological basis for control of mongoose *Herpestes javanicus* in Mauritius: is eradication possible? In *Turning the tide: the eradication of invasive species: 266-273. Veitch, C.R. and Clout, M.N.\(eds\). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.*](#)
- Summary:** Eradication case study in Turning the tide: the eradication of invasive species.
- Roy, Sugoto; Smith, Graham C.; Russell, James C., 2009. The eradication of invasive mammal species: can adaptive resource management fill the gaps in our knowledge? *Human-Wildlife Conflicts*. 3(1). SPR 2009. 30-40.
- Ryoji Fukuhara, Takako Yamaguchi, Hiromi Ukutab, Sugot Roy, Junichi Tanakaa and Go Ogura, 2010. Development and introduction of detection dogs in surveying for scats of small Indian mongoose as invasive alien species. *Journal of Veterinary Behavior: Clinical Applications and Research* Volume 5, Issue 2, March-April 2010, Pages 101-111
- Saito, Mika; Nakata, Katsushi; Nishijima, Taku; Yamashita, Katsuhiko; Saito, Anna; Ogura, Go., 2009. Proposal for Japanese Encephalitis Surveillance Using Captured Invasive Mongooses Under an Eradication Project on Okinawa Island, Japan. *Vector-Borne & Zoonotic Diseases*. 9(3). JUN 2009. 259-266.
- Savarie, P. J.; Ping Pan, H.; Hayes, D. J.; Roberts, J. D.; Dasch, G. L.; Felton, R. and Schafer Jr. E. W. 1983. Comparative acute oral toxicity of paraaminopropiophenone. *Bulletin of Environmental Contamination and Toxicology* 30:122-126.
- Smith, D.G.; Polhemus, J.T. and VanderWerf, E.A. 2000. Efficacy of fish-flavored diphacinone bait blocks for controlling small Indian mongoose (*Herpestes auro-punctatus*) populations in Hawaii. *Elepaio* 60:47-51.
- Soubeyran, Y. 2008. Espèces exotiques envahissantes dans les collectivités françaises d'outre-mer (Etat des lieux et recommandations). *Collection Planète Nature. Comité français de l'UICN. Paris, 202 pp.*
- Stone, C.P.; Dusek, M., and Aeder, M. 1994. Use of an anticoagulant to control mongooses in nene breeding habitat. *Elepaio* 54:73-78.
- Thulin, C.-G.; Gyllenstrand, N.; McCracken, G.; Simberloff, D., 2002. Highly variable microsatellite loci for studies of introduced populations of the small Indian mongoose (*Herpestes javanicus*). *Molecular Ecology Notes*. 2(4). December 2002. 453-455.
- USFWS. 2005. Draft Revised Recovery Plan for Hawaiian Waterbirds, Second Draft of Second Revision. US Fish and Wildlife Service, Portland, Oregon.

[Varnham, K. 2006. Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough: United Kingdom.](#)

Summary: This database compiles information on alien species from British Overseas Territories.

Available from: <http://www.jncc.gov.uk/page-3660> [Accessed 10 November 2009]

Walsh, M.T. 2007. Island subsistence: hunting trapping and translocation of wildlife in the Western Indian Ocean. *Azania* 42:83-113.

Watari, Yuya; Junco Nagata & Kimitake Funakoshi, 2011. New detection of a 30-year-old population of introduced mongoose *Herpestes auropunctatus* on Kyushu Island, Japan. *Biol Invasions* (2011) 13:269-276

Wegmann, A.; Buckelew, S.; Howald, G.; Helm, J.; and Swinnerton, K. 2011. Rodent eradication campaigns on tropical islands: novel challenges and possible solutions. In: Veitch, C.R.; Clout, M.N. and Towns, D.R. (eds.). *Island Invasives: Eradication and Management*, IUCN, (International Union for Conservation of Nature), Gland, Switzerland, pp. XX.

[Yamada, 2002. Impacts and control of introduced small Indian mongoose on Amami Island, Japan. In *Turning the tide: the eradication of invasive species*: 389-392. Veitch, C.R. and Clout, M.N.\(eds\). IUCN SSC Invasive Species Specialist Group. IUCN. Gland. Switzerland and Cambridge. UK.](#)

Summary: Eradication case study in Turning the tide: the eradication of invasive species.

Fukasawa K. Miyashita T. Hashimoto T. Tatara M. and Abe S. (2013b) Differential population responses of native and alien rodents to an invasive predator, habitat alteration and plant masting. *Proceedings of the Royal Society B: Biological Sciences*, 280, 20132075.

Mizuta T. Takashi M. Torikai H. Watanabe T. and Fukasawa K. (2017) Song-count surveys and population estimates reveal the recovery of the endangered Amami Thrush *Zoothera dauma major*, which is endemic to Amami-Oshima Island in south-western Japan. *Bird Conserv. Int.* 27: 470-482.

Sugimura K. Ishida K. Abe S. Nagai Y. Watari Y. Tatara M. Takashi M. Hashimoto T. and Yamada F. (2013) Monitoring the effects of forest clearing and mongoose *Herpestes auropunctatus* invasion on wildlife diversity on Amami Island, Japan. *Oryx*, 48(2), 241-249.

Watari Y. Nishijima S. Fukasawa M. Yamada F. Abe S. and Miyashita T. (2013) Evaluating the "recovery level" of endangered species without prior information before alien invasion. *Ecol. Evol.* 3: 4711-4721.

Yamada, F. and Sugimura K. (2004) Negative impact of invasive small Indian mongoose *Herpestes javanicus* on native wildlife species and evaluation of its control project in Amami-Oshima Island and Okiwana Island, Japan. *Global Environmental Research* 8: 117-124

General information

Abe, S. Takatsuki Y. Handa Y. and Nigi H. 1991. Establishment in the wild of the mongoose (*Herpestes* sp.) on Amami-Oshima Island. *Honyurui Kagaku*. 31: 23-36.

Amarasekare, Priyanga, 1994. Ecology of Introduced Small Mammals On Western Mauna Kea, Hawaii. *Journey of Mammalogy* 75(1):24-38, 1994

Baldwin, P., Schwartz, C. W. and Schwartz, E. R. 1952. Life history and economic status of the mongoose in Hawaii. *Journal of Mammalogy* 33: 335-356.

Barun, A.; Simberloff, D. and Budinski, I. 2010. Impact of the small Indian mongoose (*Herpestes auropunctatus*) on native amphibians and reptiles of the Adriatic islands, Croatia. *Animal Conservation*. 13:549-555.

[BirdLife International 2004. *Pterodroma caribbaea*. In: IUCN 2007. 2007 IUCN Red List of Threatened Species](#)

Summary: Available from: <http://www.iucnredlist.org/apps/redlist/details/144861/0> [Accessed 12 March 2010]

Borroto-Páez, R. 2009. Invasive mammals in Cuba: an overview. *Biological Invasions* 11:2279-2290.

Borroto-Páez, Rafael. (2011). Los mamíferos invasores o introducidos. In: R. Borroto-Páez and C.A. Manina (eds.), *Mamíferos en Cuba*. UPC Print, Vaasa, Finland.

Bryan, E.H. Jr. 1938. The much maligned mongoose. *Paradise of the Pacific* 50 (4):32-34.

Case, T.J. and Bolger, D.T. 1991. The role of introduced species in shaping the distribution and abundance of island reptiles. *Evolutionary Ecology* 5:272-290.

Ćirović, Duško & Raković, Maja & Milenković, Miroljub & Paunovic, Milan. (2011). Small Indian Mongoose *Herpestes auropunctatus* (Herpestidae, Carnivora): An invasive species in Montenegro. *Biological Invasions*. 13. 393-399. 10.1007/s10530-010-9831-7.

Corn, Joseph L.; Berger, Patrick; Mertins, James W., 2009. Surveys for Ectoparasites on Wildlife Associated With *Amblyomma variegatum* (Acari: Ixodidae)-Infested Livestock in St. Croix, US Virgin Islands. *Journal of Medical Entomology*. 46(6). NOV 2009. 1483-1489.

Daltry, Jennifer C., 2007. An introduction to the herpetofauna of Antigua, Barbuda and Redonda, with some conservation recommendations. *Applied Herpetology*, Volume 4, Number 2, 2007, pp. 97-130(34)

Dickinson, H.C.; Fa, J.E. and Lenton, S.M. 2001. Microhabitat use by a translocated population of St Lucia whiptail lizards (*Cnemidophorus vanzoi*). *Animal Conservation* 4:143-156.

Espeut, W. B. 1882. On the acclimatization of the Indian mongoose in Jamaica. *Proceedings of the Zoological Society of London* 1882: 712-714.

Everard, C. O. R. and Everard, J. D. 1985. Mongoose Rabies in Grenada. In Bacon, P. J. (ed.) *Population Dynamics of Rabies in Wildlife*, Academic Press Inc., London, UK: 43-69.

Fukasawa K. Hashimoto T. Tatara M. and Abe S. (2013a) Reconstruction and prediction of invasive mongoose population dynamics from history of introduction and management: a Bayesian state-space modelling approach. *J Appl. Ecol.* 50: 469-478.

Gorman, M. L. 1975. The diet of feral *Herpestes auropunctatus*. (Carnivora:Viverridae) in the Fijian Islands. *Journal of Zoology*, London 175: 273-278.

Hays, W.S.T. and Conant, S. 2007. Biology and impacts of Pacific Island invasive species. 1. A Worldwide review of effects of the small Indian mongoose, *Herpestes javanicus* (Carnivora: Herpestidae). *Pacific Science*, 61: 3-16.

Summary: Comprehensive review of worldwide effects of the small Indian mongoose in its introduced range

Heinz, Heather M.; Maley, Abigail J.; Savit, Aaron Z.; Henderson, Robert W.; Powell, Robert, 2004. Behaviour and time allotment in the West Indian snake *Alsophis rufiventris* (Colubridae) *Herpetological Bulletin*.(89). *FAL* 04. 22-25.

Henderson, R.W. 1992. Consequences of predator introductions and habitat destruction on amphibians and reptiles in the post-Columbus West Indies. *Caribbean Journal of Science* 28:1-10.

Hinton, H.E. and Dunn, A.M.S. 1967. *Mongoose: their Natural History and Behaviour*. Oliver and Boyd Ltd., London, UK.

- Hoagland, D. B., Horst, G. R. and Kilpatrick, C. W. 1989. Biogeography and population ecology of the mongoose in the West Indies. *Biogeography of West Indies 1989*: 6111-6134.
- Hoagland, Donald B.; Kilpatrick, C. William, 1999. Genetic variation and differentiation among insular populations of the small Indian mongoose (*Herpestes javanicus*). *Journal of Mammalogy*. 80(1). Feb., 1999. 169-179.
- Hodgson, B.H. 1836. *Mangusta Auropunctata*. *Journal of Asiatic Society Bengal* 5:235-236.
- Horst, G.R.; Hoagland, D.B. and Kilpatrick, C.W. 2001. The mongoose in the West Indies - the biogeography of an introduced species. In: Woods, C.A. and Sergile, F.E. (eds.). *Biogeography of West Indies: new patterns and perspectives*, CRC Press, Boca Raton, Florida, pp. 407-422.
- [Huber, R., Vincent, G., MacFarland, C. and Meganck, R. Plan and Policy for a System of National Parks and Protected Areas. Department of Regional Development, Grenada.](#)
- Summary:** Inventory and status of the natural and cultural resource base, including the impact of invasive species on Grenada.
- Husson, A.M. 1960. Het voorkomen van de mungo in Suriname. *Lutra* 2:12-13.
- Husson, A.M. 1978. The mammals of Suriname. *Zoologische Monographiën van het Rijksmuseum van Natuurlijke Historie*. Brill, Leiden, Netherlands.
- Ishida K. Murata K. Nishiumi I. Takahashi Y. and Takashi M. (2015) Endemic Amami Jay, invasive Small Indian Mongoose, and other alien organisms: a new century investigation of island aliens towards improved ecosystem management. *J. Ornithol.* 156 (Suppl 1): S209-S216
[ITIS \(Integrated Taxonomic Information System\), 2005. Online Database *Herpestes javanicus*](#)
- 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.cbif.gc.ca/pls/itisca/taxastep?king=every&p_action=containing&taxa=Herpestes+javanicus&p_format=&p_ifx=plgt&p_lang=
[Accessed March 2005]
- Kishida, K. 1931. Professor Watase and the import of mongooses. *Zoological Science* 43:70-78. (in Japanese)
- Kiyoaki Ozaki, Yoshihiro Yamamoto and Satoshi Yamagishi, 2010. Genetic diversity and phylogeny of the endangered Okinawa Rail, *Gallirallus okinawae*. *Genes & Genetic Systems*. Vol. 85 (2010) , No. 1 p.55-63.
- Lorvelec, O., Pascal, M., Delloue, X., Chapuis, J.L. 2007. Les mammifères terrestres non volants des Antilles françaises et l'introduction récente d'un écureuil. *Rev.Ecol. (Terre Vie)*, 62, 295-314
- Summary:** Bilan des introductions des mammifères terrestres dans les Antilles françaises et analyse de leurs impacts.
- [Lorvelec, O., Pascal, M., & Pavis, C. 2001. Inventaire et statut des Mammifères des Antilles françaises \(hors Chiroptères et Cétacés\). In Rapport n° 27 de l'Association pour l'Etude et la Protection des Vertébrés et Végétaux des Petites Antilles, Petit-Bourg, Guadeloupe.](#)
- Summary:** Article de synthèse sur les mammifères (hors chiroptères et cétacés) des Antilles françaises. L'origine des espèces introduites et leurs impacts avérés ou potentiels sont discutés.
- Available from: http://www.fnh.org/francais/fnh/uicn/pdf/biodiv_mammiferes_antilles.pdf [Accessed 9 April 2008]
- Macmillan, A. 1914. *Mauritius Illustrated*. W.H. & L. Collingridge, London, UK.
- Morley, Craig G.; McLenachan, Patricia A.; Lockhart, Peter J., 2007. Evidence for the presence of a second species of mongoose in the Fiji Islands. *Pacific Conservation Biology*. 13(1). MAR 2007. 29-34.
- Nagayama, Yasuhiko; Ogura, Go; Kawashima, Yoshitsugu, 2001. Morphometry of skulls and statistical verification of mongoose (*Herpestes javanicus*) on Okinawa and Amami Ohshima Islands. *Honyurui Kagaku*. 41(2). December, 2001. 159-169.
- Nakama, H. and Komizo, K. 2009. On the mongoose in Kiire-sesekushi-cho Kagoshima city, Kagoshima prefecture. *Bulletin of the Kagoshima Prefectural Museum*. 28:103-104. (in Japanese)
- Nellis, D.W. 1982. Mongoose influence on the ecology of islands. *Transactions of the International Congress of Game Biologists*. 14:311-314.
- Nellis, D.W. 1989. *Herpestes auropunctatus*. *Mammalian Species* 442: 1-6
- Nellis, D. W. and Everard, C. O. R. 1983. The biology of the mongoose in the Caribbean. *Studies on the fauna of Curacao and other Caribbean Islands* 64: 1-162.
- Nellis, D. W. and Small, V. 1983. Mongoose predation on sea turtle eggs and nests. *Biotropica* 15: 159-160.
- Nellis, D.W.; Eichholz, N.F.; Regan, T.W. and Feinstein, C. 1978. Mongoose in Florida. *Wildlife Society Bulletin* 6:249-250.
- Ogura, Go; Sakashita, Mitsuhiro; Kawashima, Yoshitsugu, 1998. External morphology and classification of mongoose on Okinawa Island. *Honyurui Kagaku*. 38(2). 1998. 259-270.
- Ogura, Go; Sasaki, Takeshi; Toyama, Masanao; Takehara, Kenji; Nakachi, Manabu; Ishibashi, Osamu; Kawashima, Yoshitsugu; Oda, Sen-ichi, 2002. Food habits of the feral small Asian mongoose (*Herpestes javanicus*) and impacts on native species in the northern part of Okinawa Island. *Honyurui Kagaku*. 42(1). June, 2002. 53-62.
- Ozaki, Kiyoaki; Baba, Takao; Komeda, Shigemoto; Kinjo, Michio; Toguchi, Yutaka; Harato, Tetsujiro, 2002. The declining distribution of the Okinawa Rail *Gallirallus okinawae*. *Journal of the Yamashina Institute for Ornithology*. 34(1). 25 October, 2002. 136-144.
- Pascal, M.; Barré, N.; Feldmann, P.; Lorvelec, O. and Pavis, C. 1996. Faisabilité écologique d'un programme de piégeage de la Mangouste dans la Réserve Naturelle de la Caravelle (Martinique). *Rapport AEVA* 12:1-14.
- Patou, M.L.; McLenachan, P.A.; Morley, C.G.; Couloux, A.; Cruaud, C.; Jennings, A.P. and Veron, G. 2009. Molecular phylogeny of the Herpestidae (Mammalia, Carnivora) with a special emphasis on the Asian *Herpestes*. *Molecular Phylogenetics and Evolution* 53:69-80
- Pearson, O. P. and Baldwin, P. H. 1953. Reproduction and age structure in a mongoose population in Hawaii. *Journal of Mammalogy* 34: 436-447.
- Pimentel, D. 1955a. Biology of the Indian mongoose in Puerto Rico. *Journal of Mammalogy* 36:62-68.
- Powell, Robert, 2006. Conservation of the herpetofauna on the Dutch Windward Islands: St. Eustatius, Saba, and St. Maarten. *Applied Herpetology* 3: 293-306
- Savit, Aaron Z.; Maley, Abigail J.; Heinz, Heather M.; Henderson, Robert W.; Powel, Robert, 2005. Distribution and activity periods of *Alsophis rufiventris* (Colubridae) on The Quill, St. Eustatius, Netherlands Antilles. *Amphibia-Reptilia*. 26(3). SEP 2005. 418-421.
- Seaman, G. A. and Randall, J. E. 1962. The mongoose as a predator in the Virgin Islands. *Journal of Mammalogy* 43: 544-546.



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Herpestes javanicus*

- Simberloff, D., Dayan, T., Jones, C. and Ogura, G. 2000. Character displacement and release in the small Indian mongoose, *Herpestes javanicus*. *Ecology* 81: 2086-2099.
- Skeels A. Margaret, 1962. Nesting Behavior of *Sylvilagus audubonii neomexicanus*. *Journal of Mammalogy*, Vol. 43, No. 4 (Nov., 1962), pp. 542-544
- Tomich, P. Q. 1969. Movement patterns of the mongoose in Hawaii. *Journal of Wildlife Management* 33: 576-584.
- Townsend, Jason, 2006. Predation of a Golden swallow (*Tachycineta euchrysea*) nest by the Indian mongoose (*Herpestes javanicus*) in the Sierta De Bahoruco, Dominican Republic. *J. Carib. Ornithol.* 19:108-109, 2006.
- Tvrtkovic, N. and Kryštufek, B. 1990. Small Indian mongoose, *Herpestes auropunctatus* (Hodgson 1836) on the Adriatic islands of Yugoslavia. *Bonner Zoologische Beiträge* 41:3-8.
- Urich, J.W. 1931. The mongoose in Trinidad. *Tropical. Agriculture* 8: 95-97.
- Veron, Geraldine; Patou, Marie-Lilith; Pothet, Geraldine; Simberloff, Daniel; Jennings, Andrew P., 2007. Systematic status and biogeography of the Javan and small Indian mongooses (Herpestidae, Carnivora) *Zoologica Scripta*. 36(1). JAN 2007. 1-10.
- Veron, G.; Patou, M.L.; Pothet, G.; Simberloff, D. and Jennings, A.P. 2007. Systematic status and biogeography of the Javan and small Indian mongooses (Herpestidae, Carnivora). *Zoologica Scripta* 36:1-10.
- Vilella, Francisco J. , 1998. Biology of the mongoose (*Herpestes javanicus*) in a rain forest of Puerto Rico. *Biotropica*. 30(1). March, 1998. 120-125.
- Watari, Y., Takatsuki, S., Miyachita, T. 2008. Effects of exotic mongoose (*Herpestes javanicus*) on the native fauna of Amamai-Oshima Island, southern Japan, estimated by distribution patterns along the historical gradient of mongoose invasion. *Biological Invasions* 18: 7-17.
- Williams C.B. 1918. Food of the mongoose in Trinidad. *Bulletin of the Department of Agriculture, Trinidad* 17:167-186.
- Windsor Research Centre, undated. Non-native invasive species.
- Summary:** A summary of the impact of invasive species on Jamaica.
- [Wozencraft, C., Duckworth, J.W., Choudury, A., Muddapa, D., Yonzon, P., Kanchanasaka, B., Jennings A. & Veron, G. 2008. *Herpestes javanicus*. In: IUCN 2010. IUCN Red List of Threatened Species. Version 2010.4.](#)
- Summary:** Available from: <http://www.iucnredlist.org/apps/redlist/details/41614/0> [Accessed 25 May 2011]