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## CDF Checklist of Galapagos Introduced Vertebrates

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This checklist is automatically generated using Version 3.0 of the online database CDF Galapagos Species Checklist.

Relatively few vertebrate species are known to be introduced to Galapagos. The large majority of vertebrates were brought to Galapagos on purpose. They were introduced for human benefit, such as horses, donkeys, goats, pigs, cattle, dogs and cats. Others, like mice and rats, arrived unintentionally as soon as the first humans explored this archipelago. Although the checklist of introduced vertebrates is quite short and relatively few species were introduced, vertebrates continue to be among the most damaging invaders of the Galapagos natural ecosystems.

Among the worst species are the Norwegian Rat (*Rattus norvegicus*) and the House or Black Rat (*Rattus rattus*); both not only cause economic damage, but they are also effective predators of native species. On many islands introduced rats have caused the extinction of endemic rice rat species. The damage caused by invasive vertebrate species is especially great on the inhabited islands. Cats (*Felis catus*) continue to represent a huge threat to native and endemic bird populations. Feral pigs (*Sus scrofa*) and donkeys (*Equus asinus*) disturb regeneration of natural vegetation, and for many years goats (*Capra hircus*) completely devastated the natural vegetation on most Galapagos Islands.

Introduced already by whalers and pirates, the first human visitors to the Galapagos, the eradication of goats began relatively late. Between 1954 and 1959 goats were first successfully eradicated from Pinta and subsequently on a few of the smaller islands. In 1998, a large-scale eradication project began on the islands of Isabela (Volcán Alcedo) and Santiago. During this Isabela Project, the Charles Darwin Foundation and the Galapagos National Park jointly targeted feral goats with an array of different hunting techniques: using specially trained dogs, small teams of park rangers hunting on foot, tracing sterilized “Judas” goats equipped with radio collars, helped by helicopter hunts and aerial surveys.

Eight years later, in 2006 the project concluded successfully, reporting that all goats had been eradicated from two islands of unprecedented size. This success clearly demonstrates that eradication of vertebrate species is feasible. Unlike invertebrates, which are very difficult to target because of their enormous quantities and effective reproduction strategies and unlike plants, which survive most eradication efforts because of their seed banks, the eradication of vertebrates does not represent such a huge challenge.

Larger animals can be hunted successfully and smaller ones are typically targeted quite effectively with venom. Large scale application of poisoned bait, however, is not without risk for non target species and in 2010/2011 trial eradications of the two introduced rat species are under way for the smaller islands Bartolomé and Rabida.

For marine species distribution data cited in the CDF Galapagos Checklists refer to the five main bioregions of the archipelago (Far Northern, Northern, Western, South Eastern and the Elithabeth Bay Bioregion). For the terrestrial species the more than 120 islands,

islets and small rocks have been aggregated into Islands Groups, thus, for example, the island group “Santa Cruz” includes smaller islands like Santa Fé, Plaza Norte, Plaza Sur, Baltra, Daphne Mayor, Daphne Minor, and others.

Please be aware that the distribution data presented here is automatically generated from specimen records and does not always accurately reflect the known distribution for all species.

IUCN red-list assessments presented here may deviate from the global IUCN list for the following reasons:

- for well known species groups like vascular plants or vertebrates updates proposed to the IUCN are shown instead of the outdated, but currently accepted status;
- for poorly known species groups (e.g., lichenized fungi) a general assessment is currently not possible and the list presented here is a regional red-list list for Galapagos archipelago.

**Names of taxa included in this checklist:** 37 (36 Accepted), 1 rejected.

**Origin of the taxa included:** 16 Accidental, 7 Cultivated, 1 Eradicated, 7 Escaped, 6 Intercepted.

1. *Anas platyrhynchos* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Unknown.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
2. *Anser anser* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Unknown.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
3. *Aratinga erythrogenys* Lesson, 1844  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** San Cristóbal.  
**References:** Jiménez-Uzcátegui, G. et al. (2007), Vargas, H. et al. (1996), Wiedenfeld, D.A. et al. (2006).
4. *Bos taurus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Escaped.  
**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz.  
**References:** Hoeck, H.N. et al. (1984), Jiménez-Uzcátegui, G. et al. (2007), Wolf, T. et al. (1892).
5. *Bubulcus ibis* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Floreana, Santa Cruz.  
**References:** Jiménez-Uzcátegui, G. et al. (2008.), Jiménez-Uzcátegui, G. et al. (2007), Lévêque, R. et al. (1966), Pérez, S. et al. (1987), Swash, A. et al. (2000), Wiedenfeld, D.A. et al. (2006).
6. *Canis lupus familiaris* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Escaped.  
**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz.  
**References:** Barnett B.D. et al. (1986), Gingrich, E.N. et al. (2010), Heyerdahl, T. et al. (1956), Hoeck, H.N. et al. (1984), Jiménez-Uzcátegui, G. et al. (2007), Levy, J.K. et al. (2008), Tapia, W. et al. (2000).
7. *Capra hircus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Escaped.

**Galapagos Distribution:** Española, Floreana, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, Santa Fé, Santiago.

**References:** Black, J. et al. (1973), Campbell, K. et al. (2004), Hamann, O. et al. (1975), Heyerdahl, T. et al. (1956), Hoeck, H.N. et al. (1984), Jiménez-Uzcátegui, G. et al. (2007).

8. *Cavia porcellus* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Accidental.

**Galapagos Distribution:** Isabela, San Cristóbal, Santa Cruz.

**References:** Hoeck, H.N. et al. (1984), Jiménez-Uzcátegui, G. et al. (2007), Patry, M. et al. (2002).

9. *Columba livia* Gmelin, 1789

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Eradicated.

**Galapagos Distribution:** San Cristóbal, Santa Cruz.

**References:** Harmon, W.M et al. (1987), Jiménez-Uzcátegui, G. et al. (2007), Padilla, L.R. et al. (2004), Parker, P.G. et al. (2006), Wiedenfeld, D.A. et al. (2006).

10. *Coturnix coturnix* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Accidental.

**Galapagos Distribution:** Unknown.

**References:** Jiménez-Uzcátegui, G. et al. (2007).

11. *Crotophaga ani* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Escaped.

**Galapagos Distribution:** Fernandina, Floreana, Genovesa, Marchena, Pinta, Santa Cruz, Unknown.

**References:** Fessl, B. et al. (2002), Harris, M.P. et al. (1973), Jiménez-Uzcátegui, G. et al. (2008.), Jiménez-Uzcátegui, G. et al. (2007), Patry, M. et al. (2002), Tapia, W. et al. (2000), Wiedenfeld, D.A. et al. (2006).

12. *Equus asinus* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Escaped.

**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago.

**References:** Carrión, V. et al. (2006), Coulter, J. et al. (1845), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007).

13. *Equus caballus* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Accidental.

**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz.

**References:** Carrión, V. et al. (2006), Coulter, J. et al. (1845), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007).

14. *Eumeces inexpectatus* Taylor, 1932

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Intercepted.

**Galapagos Distribution:** Santa Cruz.

**References:** Jiménez-Uzcátegui, G. et al. (2007).

15. *Felis catus* Schreber, 1775

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Escaped.

**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz, Unknown.

**References:** Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007), Levy, J.K. et al. (2008), Naveda, B. et al. (1949), Salvin, O. et al. (1876).

16. *Gallus gallus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Santa Cruz.  
**References:** Gottdenker, N.L. et al. (2005), Gottdenker, N.L. et al. (2005), Jiménez-Uzcátegui, G. et al. (2007), Parker, P.G. et al. (2006), Soos, C. et al. (2008), Thiel, T. et al. (2005), Wiedenfeld, D.A. et al. (2006).
17. *Gonatodes caudiscutatus* Günther, 1859  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** San Cristóbal, Santa Cruz.  
**References:** Jiménez-Uzcátegui, G. et al. (2007), Olmedo, L.J. et al. (1994), Olmedo, L.J. et al. (1994), Van Denburgh, J. et al. (1912), Vanzolini, P.E. et al. (1965).
18. *Homo sapiens sapiens* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago, Unknown.
19. *Iguana iguana* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Intercepted.  
**Galapagos Distribution:** Isabela, San Cristóbal, Santa Cruz.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
20. *Lepidodactylus lugubris* Duméril Bibron, 1836  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Isabela, Marchena, San Cristóbal, Santa Cruz, Unknown.  
**References:** Carrillo, E. et al. (2005), Jiménez-Uzcátegui, G. et al. (2007), Olmedo, L.J. et al. (1994), Olmedo, L.J. et al. (1994), Wright, J. et al. (1983).
21. *Meleagris gallopavo* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Unknown.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
22. *Mus musculus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago.  
**References:** Harris, D.B. et al. (2006), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007), Patry, M. et al. (2002).
23. *Numida meleagris* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Unknown.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
24. *Oreochromis niloticus* (Linnaeus, 1758)  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Unknown.  
**References:** Appeltans, W. et al. (2010), Jiménez-Uzcátegui, G. et al. (2007), Toral, V. et al. (2006).
25. *Oryctolagus cuniculus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.

- Galapagos Distribution:** Santa Cruz.  
**References:** Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007).
26. *Ovis ariens* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Cultivated.  
**Galapagos Distribution:** Unknown.  
**References:** Hoeck, H.N. et al. (1984), Jiménez-Uzcátegui, G. et al. (2007), Patry, M. et al. (2002).
27. *Pavo muticus* Linnaeus, 1766  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Unknown.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
28. *Phyllodactylus reissi* Peters, 1862  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Santa Cruz, Unknown.  
**References:** Carrillo, E. et al. (2005), Garman, S. et al. (1892), Jiménez-Uzcátegui, G. et al. (2007), Olmedo, L.J. et al. (1994), Olmedo, L.J. et al. (1994), Slevin, J.R. et al. (1935).
29. *Podocnemis unifilis* Troschel, 1848  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Intercepted.  
**IUCN Red List:** Vulnerable.  
**Galapagos Distribution:** San Cristóbal.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
30. *Rattus norvegicus* Berkenhout, 1769  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz, Santiago, Unknown.  
**References:** Harris, D.B. et al. (2006), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007).
31. *Rattus rattus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Accidental.  
**Galapagos Distribution:** Floreana, Isabela, Marchena, Pinzón, San Cristóbal, Santa Cruz, Santiago, Unknown.  
**References:** Harris, D.B. et al. (2006), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007).
32. *Rhinella marina* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
 Syn.: Bufo sp.; Bufo angustipes Taylor Smith, 1945; Bufo marinus (Linnaeus, 1758), Bufo pythecodactylus Werner, 1961  
**Origin:** Introduced, Intercepted.  
**IUCN Red List:** Least Concern.  
**Galapagos Distribution:** San Cristóbal.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
33. *Saguinus oedipus* Linnaeus, 1758  
**Taxon status:** Accepted name; taxon occurs in Galapagos.  
**Origin:** Introduced, Intercepted.  
**Galapagos Distribution:** San Cristóbal.  
**References:** Jiménez-Uzcátegui, G. et al. (2007).
34. *Scinax quinquifasciatus* Fowler, 1913  
**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Accidental.

**Galapagos Distribution:** Isabela, San Cristóbal, Santa Cruz, Unknown.

**References:** Jiménez-Uzcátegui, G. et al. (2007), Patry, M. et al. (2002), Snell, H.L. et al. (1999), Snell, H.L. et al. (1999), Tapia, W. et al. (2000), Vintimilla, J.E. et al. (2005).

35. *Sus scrofa* Linnaeus, 1758

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Escaped.

**Galapagos Distribution:** Floreana, Isabela, San Cristóbal, Santa Cruz.

**References:** Cruz, F. et al. (2005), Hoeck, H.N. et al. (1984), Jácome, M. et al. (1989), Jiménez-Uzcátegui, G. et al. (2007), Wolf, T. et al. (1892).

36. *Trachemys scripta* Schoepff, 1792

**Taxon status:** Accepted name; taxon occurs in Galapagos.

**Origin:** Introduced, Intercepted.

**IUCN Red List:** Least Concern.

**Galapagos Distribution:** San Cristóbal, Santa Cruz, Unknown.

**References:** Jiménez-Uzcátegui, G. et al. (2007).

### **Rejected Taxa:**

1. *Phyllodactylus tuberculosus* Wiegmann, 1835

Two specimens collected from San Cristobal in 1888 by J.R. Slevin (see Van Denburgh, 1912), and it had a mistake in the identification (see Taylor 1942). Also, J. Olmedo collected on the same Island a juvenile specimen (?) in 1992, but it was a bad identification (Olmedo's thesis did't present this record).

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9. Fessl, B., Tebbich, S. (2002) *Philornis downsi - a recently discovered parasite on the Galápagos archipelago - a threat to Darwin's finches?* *Ibis* 144: 445-451.

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