

South America (Neotropical)

3.1 Short-eared dog *Atelocynus microtis* (Sclater, 1883) Data Deficient (2004)

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Other names

English: short-eared fox, small-eared dog, small-eared zorro; **French:** renard à petites oreilles; **German:** kurzohriger hund; **Portuguese:** cachorro-do-mato-de-orelhas-curtas; **Spanish:** perro de monte; perro de orejas cortas, zorro negro, zorro ojizarco; **Indigenous names:** Ayoreo: divequena; Chiquitano: nomensarixi; Guarayo: cuachi yaguar; More: quinamco; Ninim, Moseten: achuj jhirith; Siriono: ecoijok; Tsimane: achuj foij (Bolivia); Kaiabi: awara (Brazil); Yucuna: uálaca; Huitoto: urúbui; Yebá masá o Barasana: búyairo; Bora: wipe; Okaima: juhxuutsoonna; Carijona: karejuqué (Colombia); Achuar: kuap yawa; Cofán: tsampi'su ain; Huaorani: babei guinta; Quechua: sacha alcu, jujunda, puma; Iona-Secoya: wë yai (Ecuador); Guarani: aguerau (Paraguay); Amarakaeri: huiwa toto; Matsiguenga: machit; Quechua: monte alcu; Shipibo: caman ino; Cashinawa: kama, kama inu; Amahuaca: kama, shindokama; Sharanahua: padoshoinca (Peru).

Taxonomy

Canis microtis Sclater, 1883. Proc. Zool. Soc. Lond., 1882:631 [1983]. Type locality: “Amazons”, restricted by

Herskovitz (1961) to “south bank of the Rio Amazonas, Pará, Brazil.”

Atelocynus is a monotypic genus. The species *A. microtis* has been placed in the genus *Lycalopex* (Studer 1905), *Cerdocyon* (Pocock 1914), *Dusicyon* (Osgood 1934; Clutton-Brock *et al.* 1976), and *Atelocynus* (Cabrera 1931; Languth 1975; Stains 1975). Van Gelder (1978) considered *Atelocynus* a subgenus of *Canis*. Berta's (1987) phylogenetic analysis showed *Atelocynus microtis* to be a distinct taxon most closely related to another monotypic Amazonian canid genus, *Speothos*, and this hypothesis is now widely accepted (Wozencraft 1993; Nowak 1999).

Chromosome number: $2n=76$ (Wurster and Benirschke 1968). The only individual studied was a female and the karyotype included 36 pairs of acro- or subacrocentric autosomes and one pair of large submetracentric chromosomes, probably X-chromosomes.

Description

The short-eared dog is a medium-sized canid, averaging about 10kg as an adult (Table 3.1.1). According to Herskovitz (1961), a captive adult female was a third larger than a captive adult male. The animal's head is fox-like, with a long, slender muzzle and rounded, relatively short ears. The pelt colour can range from black to brown to rufous grey. Pelage is often darkest in a dorsal line from the head to the tail. However, various colour patterns are observed in different individuals, and it is not clear whether colour varies with age, habitat, or moult; in



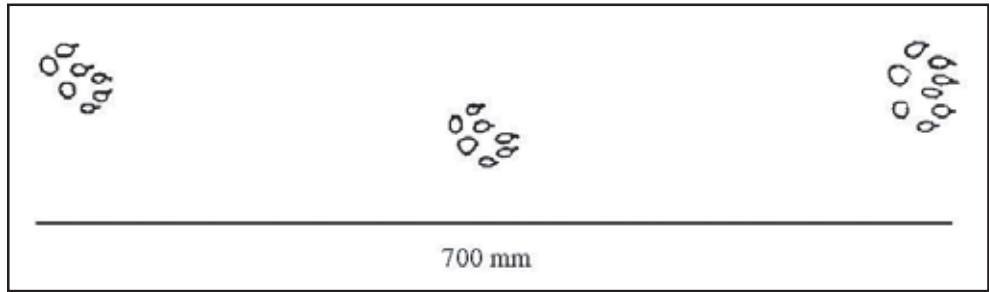
Adult male short-eared dog, taken by automatic camera. Alto Purus, Peruvian Amazon, 2002.

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Figure 3.1.1. Footprint of adult short-eared dog recorded in Cocha Cashu, Peru (Leite 2000).

Figure 3.1.2. Tracks of adult short-eared dog in Cocha Cashu, Peru (Leite 2000).



Cocha Cashu Biological Station, Madre de Dios, Peru, both reddish and black individuals have been observed (Leite 2000). A complete moult lasting three weeks was observed in July 1960, when a captive animal was transported from Colombia to a zoo in the United States. During the moult, large flakes of orange-brown oily exudates appeared with the falling hairs. A subsequent moult was observed in March (Hershkovitz 1961; A. Gardner pers. comm.). The tail is bushy, particularly in comparison to the short pelage on the rest of the body, with a dark mid-dorsal band of thick erectile hairs and light-coloured underside.

The nasals are short; the forehead slightly convex; the frontal sinus small; the presphenoid very narrow with lateral wings and large bulla. The dental formula is 3/3-1/1-4/4-2/3=42. The lower third incisor is short and not caniniform. The upper canines are distinctively long, their tips projecting outside the closed mouth for about 50mm. The upper molars are narrow for their length (Hershkovitz 1961; Berta 1986).

Table 3.1.1. Combined body measurements for the short-eared dog from across the species' range (Nowak 1999).

HB	720–1,000mm
T	250–350mm
E	34–52mm
SH	356mm
WT	9–10kg

Subspecies Monotypic (Berta 1986).

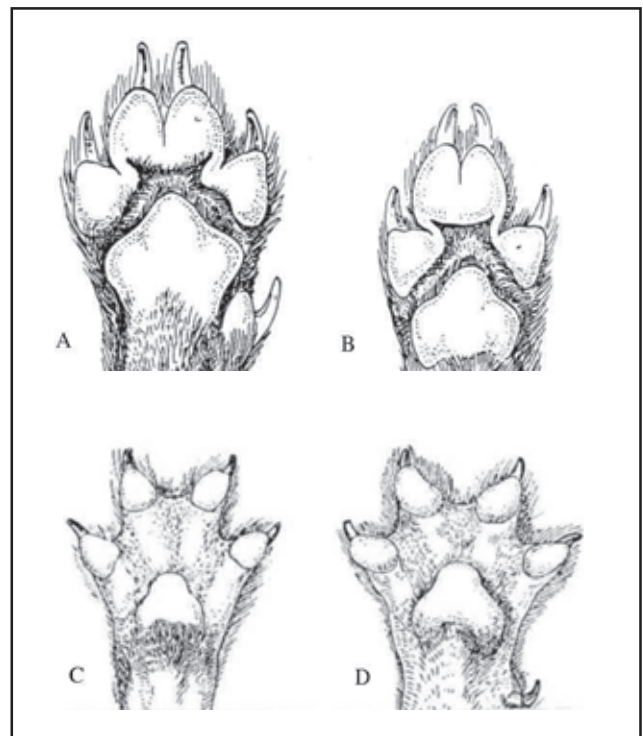
Similar species Only one other species of wild dog is known to inhabit lowland Amazonian forest, namely the bush dog (*Speothos venaticus*). Confusing the two species is unlikely due to unambiguous physical and behavioural differences. Bush dogs are smaller, light-coloured, with a very short muzzle, legs, and tail; they live in packs and are seldom seen alone. Tracks may be distinguished by the bush dog's conspicuous interdigital membrane, with the middle toes fused, whereas the short-eared dog's

interdigital membrane is only partial (Figures 3.1.1, 3.1.2, 3.1.3). The bush dog's stride is also shorter, and its tracks and pads larger than those of the short-eared dog.

Two additional species of wild canids whose ranges border Amazonia, the crab-eating fox (*Cerdocyon thous*) and the culpeo (*Pseudalopex culpaeus*), as well as domestic dogs, could potentially be mistaken for the short-eared dog, but none of these have the combination of a slender, long snout, short ears, and a bushy tail. Tayras (*Eira barbara*) are also brownish and have bushy tails, but differ in their much smaller ears, yellowish throat and mostly arboreal habits. The jaguarundi (*Herpailurus yaguarondi*), which is sometimes similar in colour, is smaller, more delicate, and has a very slender tail (Emmons and Feer 1990).

Figure 3.1.3. Comparison of bush dog and short-eared dog feet, based on dried skins (Pocock 1914).

A and B – Right fore foot and hind foot of bush-dog.
C and D – Right hind foot and fore foot of short-eared dog.



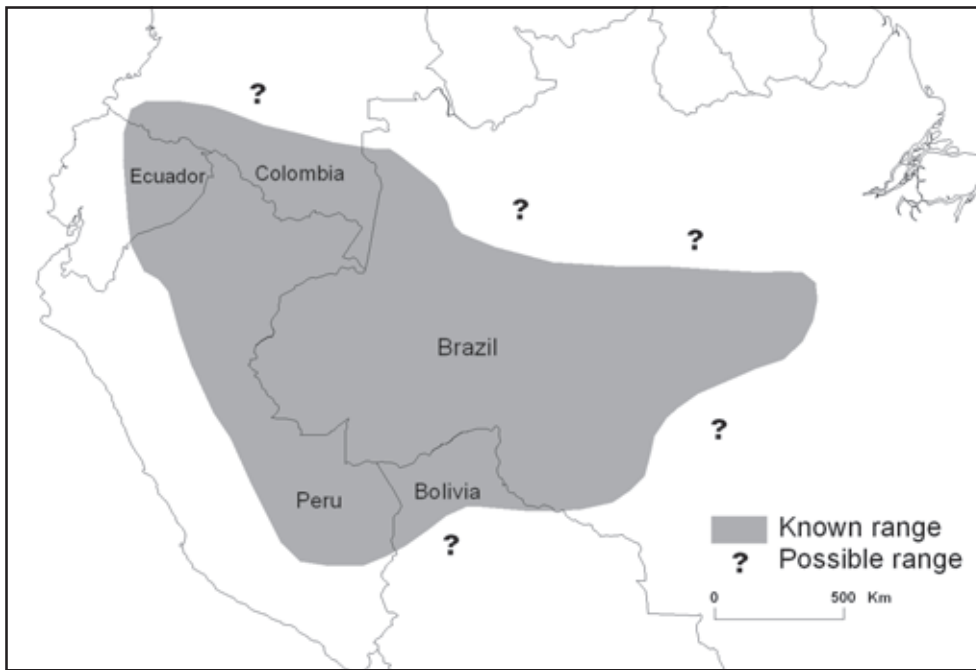


Figure 3.1.4. Current distribution of the short-eared dog.

Current distribution

The short-eared dog has been found in scattered sites from Colombia to Bolivia and Ecuador to Brazil (Figure 3.1.4). Its presence in Venezuela was suggested by Hershkovitz (1961) but never confirmed. Various distributional hypotheses for the species have been published, suggesting the presence of the species throughout the entire Amazonian lowland forest region, as well as Andean forests in Ecuador and savannah regions (Emmons and Feer 1990, 1997; Tirira 1999).

For this study, we rechecked museum specimens and carried out an extensive survey of field biologists doing long-term research in the species' putative range, constructing a new distributional map based only on specimens of proven origin and incontrovertible field sightings. Our results suggest a much smaller distribution range, limited to western lowland Amazonia. The northernmost record is in Mitú, Colombia, at 1°15'57"N, 70°13'19"W (Hershkovitz 1961), the southernmost on the west bank of the river Heath, Pampas del Heath, north-west Bolivia, at 12°57'S, 68°53'W (M. Romo pers. comm.). The easternmost record is from the vicinity of Itaituba, Brazil, at 4°20'S, 56°41'W (M. De Vivo pers. comm.), and the westernmost in the Rio Santiago, Peru, at 4°37'S, 77°55'W (Museum of Vertebrate Biology, University of California, Berkeley, collected 1979). Unfortunately, there is no information on the continuity of the species' distribution within its extent of occurrence; the absence of records from large areas suggests that its distribution may not be continuous throughout its range.

Range countries Bolivia, Brazil, Colombia, Ecuador, Peru (M.R.P. Leite unpubl.).

Relative abundance

The short-eared dog is notoriously rare, and sightings are uncommon across its range. However, this may not always have been the case. The first biologists to study the species found it relatively easy to trap during mammal surveys around Balta, Amazonian Peru, in 1969 (A.L. Gardner and J.L. Patton pers. comm.). Grimwood (1969) reported collecting specimens around the same time in Peru's Manu basin (now Manu National Park), suggesting that the species was also relatively common in that area.

Following these reports, the species went practically unrecorded in the Peruvian Amazon until 1987, despite intensive, long-term field surveys of mammals in the intervening years (Terborgh *et al.* 1984; Jason and Emmons 1990; Woodman *et al.* 1991; Pacheco *et al.* 1993, 1995). Even Louise Emmons, who carried out long-term projects monitoring and trapping ocelots (*Leopardus pardalis*) and other mammals at the Cocha Cashu Biological Station in Manu, never saw or trapped the short-eared dog (L. Emmons pers. comm.). For whatever reason, the species appears to have temporarily vanished from the region between 1970 and 1987.

Over the last decade, it appears that the species may be recovering in southern Peru and eastern Ecuador, with increasing numbers of sightings in recent years at both sites. Between 1987 and 1999, biologists working in the Peruvian department of Madre de Dios, mostly in the vicinity of Cocha Cashu Biological Station, have reported 15 encounters with the short-eared dog (M.R.P. Leite *et al.* unpubl.).

Estimated populations/relative abundance and population trends In an ongoing field study initiated at

Cocha Cashu in 2000, Leite and colleagues have sighted and followed five individuals in an area of 10km², giving an estimated density of 0.5 individuals/km². However, far too little is known about the species to extrapolate this estimate (itself preliminary) to the rest of the species' range. For the time being, the short-eared dog must be considered extremely rare throughout its range and certainly one of the rarest carnivores wherever it occurs.

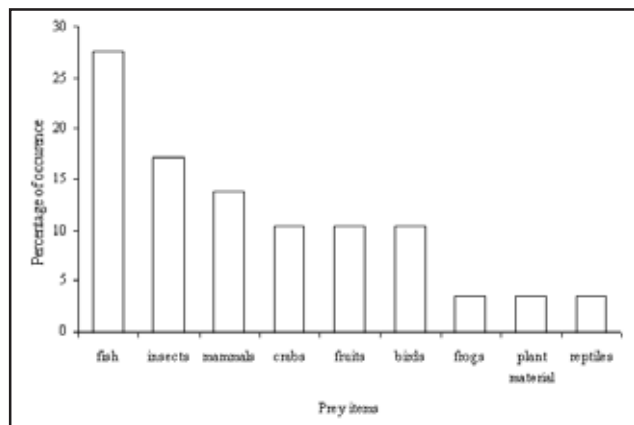
Habitat

The short-eared dog favours undisturbed rainforest in the Amazonian lowlands. The species has been recorded in a wide variety of lowland habitats, including terra firme forest, swamp forest, stands of bamboo, and primary succession along rivers (M.R.P. Leite unpubl.). At Cocha Cashu, sightings and tracks of the species are strongly associated with rivers and creeks, and there are five reliable reports of short-eared dogs swimming in rivers. Records are very rare in areas with significant human disturbance, i.e., near towns or in agricultural areas. It is unclear whether the short-eared dog is able to utilise habitats outside wet lowland forests. One sighting in Rondonia, Brazil, was in lowland forest bordering savannah (M. Messias pers. comm.). Another, at the highest elevation yet documented for the species, was at 1,200m a.s.l. in the Ecuadorian Andes, in a transitional zone between lowland forest and cloud forest (Pitman 2002). Two specimens collected in 1930 are allegedly from even higher elevations in the same region – above 2,000m on Volcan Pichincha and Antisana (near Quito) – but the absence of any other reports from these well-studied areas leads us to believe that these represent mislabelled specimens.

Food and foraging behaviour

Food An ongoing study of the short-eared dog's diet, based on scat samples collected at Cocha Cashu since 2000 (M.R.P. Leite unpubl.), shows the species to be a generalist carnivore (Figure 3.1.5). Fish appear to be the most

Figure 3.1.5. Frequency of occurrence of various prey items in 21 scat samples from Cocha Cashu, Peru (Leite 2000).



important item in their diet (present in 28% of samples; n=21). Defler and Santacruz (1994) had previously suggested that fish form part of the short-eared dog's diet, based on the discovery of a cestode (*Diphyllobothrium latum*) in a museum specimen's intestine (the parasite requires a fish as its intermediate host). Insects (mainly Coleoptera) were the second most important item in their diet (17% of samples), while mammal remains (agoutis, marsupials and small rodents) were present in 13% of the scats collected in Cocha Cashu. This corroborates earlier anecdotal evidence that small rodents, agoutis (*Dasyprocta* spp.), pacas (*Agouti paca*), and acouchis (*Myoprocta* spp.) are important components of the diet (Peres 1992; Defler and Santacruz 1994).

The remains of fruits, including *Borismenia japurensis*, *Strychnos asperula*, *Unonopsis floribunda*, *Pouteria procera*, *Sciadotenia toxifera*, *Socratea exorrhiza*, *Astrocaryum murumuru*, *Euterpe precatória*, *Trattinnickia* sp., and various Cucurbitaceae and Moraceae were found in 10% of samples. Fruits of the palm *Euterpe precatória* were found germinating in two scats. Defler and Santacruz (1994) report short-eared dogs eating fallen *Brosimum* fruits and the Cofan Indians of Ecuador report them being attracted to fallen bananas (R. Borman pers. comm.).

Close to 4% of droppings contained the remains of frogs, including *Osteocephalus taurinus* (see below). Parker and Bailey (1990) reported seeing a short-eared dog with a frog in its mouth in Madidi National Park in Bolivia. Crabs (10.3% of samples), birds (10.3%), reptiles (3.4%) and vegetable fibre (3.4%) were other components of the diet at Cocha Cashu.

Foraging behaviour The short-eared dog has been reported hunting alone and in pairs (Peres 1992; M.R.P. Leite unpubl.). Y. Campos (pers. comm.) described two adults hunting either a fish or a frog in a water hole in Ecuador; Peres (1992) observed an individual hunting a rodent (*Proechmys* sp.). M.R.P. Leite (unpubl.) observed an adult chasing a squirrel on the ground, and found a small waterhole where another adult had apparently killed, but not eaten, dozens of frogs (*Osteocephalus taurinus*).

Both diurnal and nocturnal activity patterns have been observed. Field reports (n=30) appear to indicate a diurnal or at least partly diurnal animal, with 95% of the observations made in daylight hours. However, the species has also been photographed at night walking on trails of Madidi National Park, Bolivia (R. Wallace pers. comm.), and one animal was captured swimming after a paca, in a river at 03:00 in Colombia (Defler and Santacruz 1994).

Damage to livestock or game A. Salas (pers. comm.) has documented a wild short-eared dog eating chickens near Tambopata National Reserve, Peru, and P. Santos *et al.* (unpubl.) reported two captive individuals in Brazil also killing poultry.

Adaptations

There is evidence, including the partial interdigital membrane, sleek, thick coat, and sightings on rivers, to suggest that the short-eared dog may be at least partly aquatic (Berta 1986). The short limbs (though not so short as those of the bush dog) likely facilitate movement in dense forests (Hershkovitz 1961).

Social behaviour

The short-eared dog is mainly solitary, although observations have been made of two adult animals walking together in October in Peru and between January and March in Ecuador (M.R.P. Leite unpubl.; Y. Campos pers. comm.). Since 2000, three individuals of adult size have been observed to use a 1.6km stretch of white sandy beach near Cocha Cashu, where two latrines are used infrequently by both short-eared dogs and river otters (*Lontra longicaudis*).

According to Hershkovitz (1961) and A.L. Gardner (pers. comm.), most observations of wild and captive individuals indicate that the species is very docile around humans, with the exceptions of a captive male in the Schönbrunner Zoo and a female in the Brookfield Zoo, which growled, snarled and attempted to bite when frightened. In addition, when a Brazilian hunting party with six domestic dogs found a pair of short-eared dogs with two puppies, “the mother protected the babies fiercely, having attacked one of the domestic dogs.” Another female and two puppies were sufficiently docile to allow them to be carried in a basket with no attempt being made to bite the hunters (P. Santos *et al.* unpubl.). Hershkovitz (1961) and A.L. Gardner (pers. comm.) reported a strong musky odour in males for both wild and captive animals, this being hardly noticeable in females.

Reproduction and denning behaviour

Based on the fresh carcass of a three- or four-month-old juvenile found in September 2000 at Cocha Cashu Biological Station, short-eared dogs give birth in May or June in Peru. Breeding time is not known precisely, but pups have been found throughout the range in April to May, June, September, and November to December, suggesting that parturition occurs in the dry season.

Three dens have been found inside hollow logs, one of them containing two adults and two pups, another, the female and two pups (Defler and Santacruz 1994; P. Santos *et al.* unpubl.). Another den, containing three pups, was found in a paca burrow (M.R.P. Leite unpubl.). At Cocha Cashu Biological Station, the short-eared dog was found also to use several paca burrows along the steep banks of a creek.

Competition

Considering the short-eared dog’s generalist diet, it is likely that all medium-sized sympatric carnivores,

frugivorous monkeys, rodents, and ungulates, are competitors to some extent. Paca dens seem to be used often by short-eared dogs.

Mortality and pathogens

Natural sources of mortality Very little is known. Ocelot tracks found around the corpse of a dead juvenile in Cocha Cashu suggest it is a possible predator. Jaguars (*Panthera onca*) and pumas (*Puma concolor*) are also potential predators.

Persecution There are only a few reports of the short-eared dog being hunted by man. In one case, the species was reportedly killed and eaten by the Yora indigenous people of Peru (Museum of Vertebrate Zoology, Berkeley, California MVZ No.: 181288 Accn No.: 12921). In another, A. Salas (pers. comm.) reported that villagers injured a male short-eared dog (which subsequently died) as it was killing chickens in the Tambopata river region, Peru. A recently captured and radio-collared animal was shot and killed by a hunter in the Alto Purus region of south-eastern Peru. The hunter claimed it was mistakenly shot.

Hunting and trapping for fur There are no known reports of the species being hunted or trapped for its fur.

Road kills The species avoids developed areas, and there are no known cases of road kills, so the impact of vehicles on population numbers is probably minimal.

Pathogens and parasites To date, no diseases have been reported in wild short-eared dogs. Common viral diseases such as canine distemper virus and canine parvovirus are widespread among domestic dogs in South America, even in the most pristine areas of the Amazon (Leite Pitman *et al.* 2003). Domestic dogs are kept throughout the region as pets or hunting companions and occur in a feral state around villages. Since potentially all wild canid species are susceptible to distemper, it is feasible that epidemics could occur, decimating or even locally eliminating populations of wild canids. P. Santos *et al.* (unpubl.) report the death of a captive, one year-old short-eared dog by canine distemper virus, and the possible death of another captive individual by the same means. These and other infectious diseases may represent a serious threat to wild populations of Neotropical canids. For example, one hypothesis to explain why this species largely disappeared from the Peruvian Amazon during the 1970s and 1980s (see Relative abundance) is that epidemics started by domestic dogs decimated the population over large areas. Clearly, the current and potential impacts of these diseases require further study.

The cestode, *Diphyllobothrium latum*, was found as an intestinal parasite of the short-eared dog (Defler and

Santacruz 1994). This tapeworm can cause pernicious anaemia and occasionally death in domestic dogs, as it competes with the host for vitamin B12.

Longevity Most captive animals survive for less than a year, with the exception of two animals that lived for nine years (Anon. 2000) and eleven years (Jones 1982). There is no data on longevity in the wild.

Historical perspective

The short-eared dog generally is poorly known by indigenous peoples of the Amazon basin and is not known to hold any special significance for them. Several Huaorani in Ecuador stated that it was one of the animals they did not hunt, but they could not offer a clear reason. The Amarakaeri indigenous people of Peru call the short-eared dog “huiwa toto”, meaning solitary devil, and believe that it will attack men by biting their testicles (M. Swarner pers. comm.).

Conservation status

Threats Diseases from domestic dogs (see above) and habitat loss. There are no reports of widespread persecution of the species. An ongoing distribution survey (M.R.P. Leite unpubl.) suggests that the short-eared dog is rare throughout its range and threatened by the large-scale forest conversion underway in Amazonia.

Commercial use Reports of commercial use are scattered and few. In some cases, wild individuals have been captured for pets and occasionally for sale to local people and zoos.

Occurrence in protected areas The short-eared dog is likely to occur in most protected areas that encompass large tracts of undisturbed forest in western Amazonia. During the last decade, its presence has been confirmed in the following protected areas:

- *Bolivia*: Madidi National Park, Tahuamanu Ecological Reserve and Estación Biológica Beni;
- *Brazil*: Guajara Mirim State Park, Cristalino Reserve. The species has never been reported from Xingu National Park, Amanã Reserve, Mamirauá Reserve, Jaú National Park and Serra do Divisor National Park, but sightings close to these areas suggest the species is present at very low densities (M.R.P. Leite unpubl.);
- *Ecuador*: Yasuní National Park, Reserva Ecológica Cofanes de Bermejo and the Cuyabeno Wildlife Reserve;
- *Peru*: Manu National Park, Tambopata National Reserve, Alto Purus Reserved Zone, and Manu Wildlife Research Center.

Protection status CITES – not listed.

The species is on the Brazilian list of endangered species (see: www.ibama.gov.br/fauna/extincao.htm) and on the

preliminary list of Colombian endangered species (Rodriguez 1998).

Current legal protection Protected by law in Brazil. Recently removed from the list of protected species in Peru.

Conservation measures taken Although protected on paper in some Amazonian countries, this has not yet been backed up by specific conservation action.

Occurrence in captivity

No short-eared dogs are known to be currently held in captivity, and only a dozen confirmed records of captive animals exist. The first recorded captive short-eared dog (eventually the holotype) was kept at the Zoological Society of London late in the 19th century (Sclater 1883). At around the same time, two males were kept at the Zoological Gardens of Para, Brazil, and in 1933 another one was present in the Schönbrunner Tiergarten, Germany (Hershkovitz 1961). Since then, individuals have been held in several U.S. zoos (including the Lincoln Park Zoo, the National Zoo, the Brookfield Zoo, the Oklahoma City Zoo, and the San Antonio Zoo), mostly during the 1960s and 1970s. Over the last decade, sporadic reports of captive animals have come from Peru (Pucallpa and Puerto Maldonado), Colombia (Medellin), Ecuador (Quito), and Brazil (Canaria and Itaboca in the Amazon).

Current or planned research projects

M.R.P. Leite (Duke University Center for Tropical Conservation, USA) is conducting an ongoing research programme on the ecology and conservation of the short-eared dog at Cocha Cashu Biological Station and the Alto Purus Reserved Zone, in south-eastern Peru. The project is currently seeking funding to establish a domestic dog vaccination programme in the Amazonian protected areas of Peru and to expand field work to other sites within the species' range, including western Brazil, Ecuador, Bolivia, Colombia, and northern Peru.

Gaps in knowledge

The biology, pathology, and ecology of the species are virtually unknown. Especially lacking is any estimate of population density and an understanding of the species' habitat requirements.

Core literature

Berta 1986; Defler and Santacruz 1994; Leite 2000; Peres 1992.

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