

Large Mammal Observations in the Chiquibul Forest, 1994-96

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Introduction

During two years of living and travelling in the Chiquibul, staff at Las Cuevas have been able to gather a considerable amount of knowledge about the distribution, status and behaviour of the larger mammals of the area. We try here to put down on paper as much as possible about what has been learnt by casual observations, and include details of each sighting of species considered threatened through Central America. The official status of each species included here, as defined by the Convention on International Trade in Endangered Species (CITES) 1988, and given in Emmons and Freer (1990), is given in table 1. Appendix I included species considered to be threatened by extinction, while Appendix II included species likely to be threatened in the future if trade was not regulated.

Table 1: Status of the larger mammals of the Chiquibul

English name	Belizean name	Scientific name
<u>CITES Appendix I</u>		
Jaguar	Tiger	<i>Panthera onca</i>
Puma	Red tiger	<i>Felis concolor</i>
Margay	Tiger cat	<i>Felis wiedii</i>
Jaguarundi	Halari	<i>Felis yagouaroundi</i>
Baird's tapir	Mountain cow	<i>Tapirus bairdii</i>
Southern river otter	Water dog	<i>Lutra longicaudis</i>
Spider monkey	Monkey	<i>Ateles geoffroyi</i>
<u>CITES Appendix II</u>		
Ocelot	Tiger cat	<i>Felis pardalis</i>
Collared peccary	Peccari	<i>Tayassu tajacu</i>
White-lipped peccary	Wari	<i>Tayassu pecari</i>
Howler monkey	Baboon	<i>Alouatta pigra</i>
<u>CITES unclassified for Belize</u>		
Red brocket deer	Antelope	<i>Mazama americana</i>
White-tailed deer	Deer	<i>Odocoileus virginianus</i>
Kinkajou	Night walker	<i>Potos flavus</i>
Coati	Quosh	<i>Nasua narica</i>
Grey fox	Fox	
Skunk	Polecat	<i>Conepatus semistriatus</i>
Tayra	Bush dog	<i>Eira Barbara</i>
Paca	Gibnut	<i>Agouti paca</i>
Agouti	Wild rabbit	<i>Dasyprocta punctata</i>
Brazilian rabbit		<i>Sylvilagus brasiliensis</i>

Variegated squirrel		<i>Sciurus variegatoides</i>
Deppe's squirrel		<i>Sciurus deppei</i>
Northern tamandua	Ant bear	<i>Tamandua mexicana</i>
Armadillo	Dilly	<i>Dasyus novemcinctus</i>
Mouse Opossum		<i>Marmosa mexicana</i>

(During the following discussions of each species, arranged by taxonomic group, the English names are used; for the Belizean and scientific names refer to table 1. The locations given in the following tables refer to the closest camp or other named site; precise notes on locality are given in the Comments columns)

Cats (Carnivora: Felidae)

The five species of cat are among the most threatened large animals in Belize, and over the years populations have suffered due to habitat destruction and hunting over much of their geographic range. Sightings of these elusive animals have been rare, and all reported sightings are listed in Table 2.

Pumas have been reported most frequently, perhaps because they seem to be fairly active during the daytime. Jaguars have been seen active both day and night, although they are believed to be more active at night (-----). There have been no reliable sightings of margay, although it is likely to occur in the area, and there have been a couple of glimpses of fast arboreal animals that were probably indeed a margay.

In addition to the sightings listed, cat tracks, and occasionally scrapes, have been observed frequently on the soft mud roads used by Las Cuevas staff, particularly the track from New Maria camp to the FPMP plot, the track to San Pastor, and the track to Monkey Tail branch. Both jaguar (J.Howell, N., C., N. & M. Bol, Paddy Creek, Sep '94) and puma (A.Howe, T.King, nr. San Luis, Aug '95) have been sighted in the Mountain Pine Ridge.

Table 2: Reported sightings of cats

Date	Location	Comments	Observers
<u>Jaguar</u>			
Nov '94	San Pastor	one jumping across track at San Pastor camp, mid-morning	N.Bol, A.Monro
end Feb '95	Las Cuevas	one stalking white-lipped peccaries in FPMP Las Cuevas plot, 10:30	W.Thevenin
Apr '95	Monkey Tail	one on east side of Monkey Tail branch seen while trail-cutting	Raleigh International
15 Sep '95	Las Cuevas	one jumping across road at bottom of small hill 1.5km north of Las Cuevas, 19:30	N.Bol, Polly King
end Apr '96	Gravel Hill	one female with two cubs at top of Gravel Hill, just south of Millionario/Caracol junction, dusk	N.Bol

<u>Puma</u>			
early '94	Las Cuevas	one a short distance along track to Monkey Tail	A.Monro
Feb '95	Millionario	one on road just south of Millionario	N.Bol
Feb '95	Millionario	one on road just south of Millionario, pm	N.Bol, T.King, J.Beard
Feb '95	Millionario	one jumping across road just south of Millionario, followed closely by Red Brocket deer, pm	D.Froehlich, E.Burroughs
Jun '95	New Maria	one near New Maria camp on track to FPMP plot, 08:00	A.Howe, T.King
Jun '95	New Maria	one lying in road near New Maria camp, midday	A.Smith, M.McCutcheay
29 Jul '95	Christina	one on road near Christina camp, midday	T.King, J.Beard
Nov '95	San Pastor	one in brocadeer for FPMP San Pastor plot, midday	C.Lyal
May '96	Monkey Tail	one at Monkey Tail branch, where track crosses the river, midday	S.Hudson
Jun '96	Las Cuevas	one at new generator shed at Las Cuevas, early morning	N.Bol
<u>Ocelot</u>			
Feb '95	Las Cuevas	one at quarry on road just west of Las Cuevas, 21:00	P.Champlin, T.Crowningshield
'94 - '96	Las Cuevas	one seen on several occasions in the Las Cuevas clearing, often foraging at the rubbish dump, usually at night but once mid-morning	N.Bol, C.Bol
<u>Jaguarundi</u>			
Feb '95	Grano de Oro	one seen on road north of Grano de Oro, midday	W.Thevenin
Dec '95	Los Lirios	one seen on road to Grano de Oro between Los Lirios and San Pastor, mid-morning	T.King

Weasel family (Carnivora: Mustelidae)

Three species of the family Mustelidae have been recorded, tayra, skunk and southern river otter. Tayra have been observed fairly frequently in most parts of the Chiquibul, including the Las Cuevas clearing, near Millionario, the San Pastor FPMP plot, at the observation tower on top of San Pastor hill, Puente Natural, along the track to Monkey Tail and several times in the area of the Grano de Oro FPMP plot. On one occasion in this plot in January 1996 one was observed trotting nose to ground

following precisely the trail of a young brocket deer which had shot past a few minutes earlier (A.Howe, T.King). They have often been seen climbing easily and rapidly up and down trees, possibly looking for honey (A.Howe) or fruit. Tayra have proved time and again to be unafraid of human observers, rather either seemingly oblivious to their presence or very inquisitive about them.

There has been just one sighting of a skunk, on 23 June 1996 at 20:30, about 1km from Las Cuevas along the track to Monkey Tail (N.Bol, C.Bol, F.Ryland, T.King). The distinctive smell has been smelt in the Grano de Oro FPMP plot (A.Howe) and in the Las Cuevas clearing where there has been evidence of digging around the base of the pole for the wind-sock (N.Bol).

The status of the southern river otter over its range is unclear (Emmons & Freer 1990), but it is considered an endangered species and is classified in CITES Appendix I. It is obviously confined to riverine areas, although it has a preference for clear, fast-flowing rivers and streams (Matola *et al.* 1994). Healthy populations have been shown to occur on the Raspaculo river (Hartop 1994, Matola *et al.* 1994). Table 3 gives details of the three occasions on which the otter has been reported, at the Guacamallo bridge on the Macal River, and at Puente Natural on the Chiquibul branch.

Table 3: Reported sightings of southern river otters

Date	Location	Comments	Observers
7 Mar '95	Puente Natural	one swimming slowly downstream, diving often, presumably foraging, undisturbed by human presence on other bank	T.King, A.Howe, C.Lyal, D.Hollis, A.Watt
Apr '95	Guacamallo bridge	one in the river	N.Bol, C.Bol
Sep '95	Guacamallo bridge	one in the river during the large flood, with the bridge 30 feet underwater	N.Bol, C.Bol, Natalie Bol, M.Bol, N.Rosado

Raccoon family (Carnivora: Procyonidae)

Two members of the raccoon family are common in the Chiquibul. Kinkajous are strictly nocturnal so often overlooked, but have been observed feeding on fruit of the large fig tree (*Ficus* sp.) just west of the Las Cuevas clearing. They have also been reported from along the Monkey Tail track, at the bottom of San Pastor hill, and along Mengel Creek near the Macal river.

Coati have been observed commonly during the day around Las Cuevas, New Maria and Grano de Oro throughout the two year period. They are encountered either as single males, which are often oblivious to human presence while foraging on the ground, or tentatively inquisitive, or as large groups of females with young which make quite a noise of rustling and squeaking as they move through the forest

foraging. They are good climbers; one male was observed descending the mat of vines from the large Barbajolote tree (*Pithecellobium arboreum*) in the middle of the San Pastor FPMP treatment plot.

Fox (Carnivora: Canidae)

Grey foxes have been observed on a number of occasions along the Chiquibul road between Las Cuevas and the Guacamallo bridge, and once in the Grano de Oro FPMP plot. They are normally seen singly, but on one occasion a pair was observed near Millionario. They have been observed active both day and night.

Monkeys (Primates: Cebidae)

Both species of monkeys in Belize occur in the Chiquibul. Howler monkeys have only been seen on two occasions, both in the New Maria FPMP plot (Manomet Observatory Mar '95, A.Howe & T.King May '95), but have been heard frequently near all the regularly visited FPMP plots at Grano de Oro, San Pastor and Las Cuevas. In the vicinity of Las Cuevas, howler monkeys have been heard regularly, both day and night, often with three separate troops being audible at one time. Hortop (1994) and Matola *et al.* (1994) also report hearing howlers frequently along the Raspaculo river. It appears that howler monkeys are fairly widespread in the Chiquibul but rarely seen.

All reported sightings of spider monkeys are given in Table 4. In every case that the observers were able to get close, the monkeys were very inquisitive about their human intruders, and appeared annoyed, shaking branches and thin trees violently, sometimes urinating and defaecating. In some instances they would follow the observers for several minutes before leaving them alone. Spider monkeys have been seen more frequently than howlers, but many of the sightings are of a single troop living around the San Pastor hill which lies partly within the San Pastor FPMP plot. This troop has been observed on eight occasions from March 1995 to May 1996. Spider monkeys have been seen on only two other occasions, at Puente Natural (Apr '96) and New Maria FPMP plot (May '96). Matola *et al.* (1994) report encountering a single troop along the Lower Raspaculo river. It is probable that spider monkeys are less widespread than the howlers.

Table 4: Reported sightings of Spider monkeys

Date	Location	Comments	Observers
Mar '95	San Pastor	five in San Pastor FPMP plot, 08:30	E.Burroughs, A.Howe, T.King
Mar '95	San Pastor	troop in San Pastor FPMP plot	P.Champlin, T.Crowningshi eld
21 Mar '95	San Pastor	troop in San Pastor FPMP plot, pm	C.Lyal, L.Curran
Jul '95	San Pastor	troop in San Pastor FPMP plot, 16:30	A.Howe,

Oct '95	San Pastor	troop at top of steep hill on north boundary of San Pastor FPMP plot, feeding on fruit of Pimentillo	T.King A.Howe, T.King
Feb '96	San Pastor	troop near observation tower on San Pastor hill	N.Bol, C.Bol
Apr '96	San Pastor	troop on San Pastor hill, lower than observation tower	A.Monro, V.Persson
28 Apr '96	Puente Natural	one troop on steep hillside at Puente Natural	N.Bol, J.Howell, G.Baker, S.Baker
May '96	New Maria	two in New Maria FPMP plot, 16:30	A.Howe, T.King
May '96	San Pastor	troop (four or five?) on top of steep hill on north boundary of San Pastor FPMP plot	F.Ryland, T.King
30 July '96	San Pastor	heard just west of observation tower on San Pastor hill, 10:00	A.Howe, T.King

Tapir (*Perissodactyla: Tapiridae*)

Baird's tapir is a threatened species in Central America, but appears to have a relatively healthy population in Belize currently (Matola *et al.* 1994). Reported sightings of tapir in the Chiquibul from July 1994 to July 1996 are given in table 5. The most frequent observations have been made in or near the Monkey Tail branch, and this river is obviously an important area for the tapir. The Raspaculo and Macal rivers have already been shown to be areas favoured by tapir, with very high frequency of observations during relatively short sampling trips (Matola *et al.* 1994, Hortop 1994). Other rivers are likely to be similarly favourable areas for tapir, for example the Smokey Branch where tapirs have also been regularly sighted (B.Johnston, pers. comm.). However, it is clear from table 5 and additional frequent observations of tracks (and occasional unreported sightings) on many of the dirt roads throughout the Chiquibul show that tapir use the extensive road system for travelling around both day and night, and during the wetter times of year may base themselves in wet areas some distance from a river (eg Los Lirios, August - September 1995).

Table 5: Reported sightings of tapir

Date	Location	Comments	Observers
Jul '94	Millionario junction	one in water hole beside road to Caracol, midday	J.Beard, C.Lyal
Oct '94	Millionario junction	one seen on several occasions on road near Millionario/Caracol junction	J.Howell
Nov '94	Millionario	one on road to Grano de Oro between Millionario and San Pastor, 07:00	E.Guerra, T.King, J.Martin

Feb '95	Las Cuevas	one on road just west of Las Cuevas, 21:00	Manomet
Mar '95	Las Cuevas	one on road just west of Las Cuevas, 21:00	T.King, K.Richter
Mar '95	Monkey Tail	one near Monkey Tail branch, 18:00	N.Bol, C.Bol, T.King
Mar '95	New Maria	one on road near New Maria camp, 06:00	Manomet
Aug '95	Los Lirios	a pair grazing roadside vegetation at Los Lirios, then move into overgrown ponds and wallow for sometime, 10:00	A.Howe, T.King
Aug '95	Los Lirios	one on road at Los Lirios	B.Johnston
Sep '95	Los Lirios	one on road to Grano de Oro, north of Los Lirios, 16:30	A.Howe, T.King
1 Jan '96		one on Chiquibul road, 19:00	N.Bol, C.Bol, Natalie Bol
5 Jan '96	Millionario	one large tapir found dead in burnt area between Millionario and Las Cuevas	I.Howell, C.Bol
Feb '96	Las Cuevas	one on Monkey Tail trail, just east of Las Cuevas, 20:30	A.Howe, T.King
Mar '96	New Maria	one on road near New Maria camp	Manomet
Apr '96	Monkey Tail	one in pool at Monkey Tail branch, late afternoon	J.Arnold
Apr '96	Monkey Tail	one in pool at Monkey Tail branch	J.Howell
4 May '96	Monkey Tail	one on bank of Monkey Tail branch	S.Daniell
early May '96	Monkey Tail	one at Monkey Tail branch	A.Monro, E.Watson
23 Jun '96	Monkey Tail	one female on track near Monkey Tail ruins, feeding on roadside vegetation, 20:30	N.Bol, C.Bol, F.Ryland, T.King
24 Jun '96	Monkey Tail	one big male on track at top of hill by Monkey Tail branch, 18:00	D.Sutton, A.Robertson
Jul '96	Monkey Tail	one sleeping at ruins on top of hill overlooking Monkey Tail branch, daytime	N.Bol, A.Howe

Peccaries (*Artiodactyla: Tayassuidae*)

Of the two species of peccary, the collared has been encountered on many more occasions than the white-lipped, but in much smaller herds. While white-lipped peccaries are rarely seen in groups of less than twenty-five or so, collared peccaries have been seen singly and in pairs, most frequently in groups of three to eight, and a maximum group size of fourteen which visited the clearing at Las Cuevas in February 1995. Members of this group were seen commonly in and around Las Cuevas from December 1994 to April 1995. Since then, sightings of collared peccaries in the

clearing have been rare, the most recent being Christmas day 1995, and once in March 1996, but small groups have been sighted fairly close to Las Cuevas on several occasions. They have also been recorded in and around the New Maria, San Pastor and Las Cuevas FPMP plots, and near Monkey Tail branch. Hortop (1994) and Matola *et al.* (1994) both report sightings of collared peccary along the Raspaculo river. The population of collared peccary in the Chiquibul appears to be fairly healthy, although group sizes seem small.

When disturbed, collared peccaries have tended to bolt in all directions, although sometimes will return after a period of several minutes; if not disturbed, they often wander within a couple of metres of humans, before turning away unalarmed. There have been no instances of collared peccaries behaving aggressively to humans.

White-lipped peccaries have never entered the clearing at Las Cuevas, but have been seen very close by in the mud-holes beside the road just west of Las Cuevas on a couple of occasions, and close to the Monkey Tail track just east of the clearing. They have also been seen along the roads to Grano de Oro, New Maria FPMP plot, and Monkey Tail, while evidence of them bathing in mud-holes have been frequently observed on each of these roads and also the road to San Pastor. One morning in December 1995, two large herds were observed bathing in mud-holes along the road to Grano de Oro within 5km of each other (A.Howe, T.King). Although observed less frequently than collared peccaries, group sizes are large and the Chiquibul population can probably be considered fairly healthy and widespread.

White-lipped peccaries are considered the most dangerous mammal in the forest because of their reputation for aggressiveness towards humans, particularly when being stalked by jaguar. However, in March 1995, W.Thevenin was watching a jaguar in the Las Cuevas FPMP plot when he stumbled across a large group of white-lipped peccary, one facing him less than ten metres away, and they did not react aggressively towards him. When disturbed by field-workers on foot, white-lipped peccaries have tended to retreat into the surrounding vegetation, usually rushing around, barking and knocking their tusks together making an alarming racket but without making any move towards the humans. There tends to be one quiet, and often fairly small, individual who stands facing the humans for a short while before moving off, followed by the rest of the group. On only one occasion has this individual charged Las Cuevas field workers, in May 1996 near New Maria FPMP plot (A.Howe, T.King); King climbed the nearest thick liana while Howe stood his ground smacking his machete against wood and ground. The peccary stopped, then retreated and the rest of the group dispersed. Field workers on foot should never meet a herd of white-lipped peccary unaware, as they exude a very strong and pungent odour which can be smelt from tens of metres away or more, and also while foraging they tend to make low-pitched grunts which can be heard from a distance of about twenty metres away.

Deer (*Artiodactyla: Cervidae*)

Of the two species of deer in the Chiquibul, both appear to occur throughout the region and into the Mountain Pine Ridge, but the brocket deer is more elusive and

probably less common than the white-tailed deer. Nevertheless, brocket deer have been seen fairly regularly, sometimes entering the Las Cuevas clearing during the early hours of the morning. A family of three (two adults and one young) frequented the clearing several times during April and May 1996. Three pairs of adults were seen in the space of three days at the beginning of April 1996, one in the Grano de Oro FPMP plot (A.Howe, T.King) and two on the road near New Maria (A.Howe, T.King), and during the same period one adult with one young was observed on the road near the Millionario/Caracol junction (T.King, S.Hudson). A very young brocket deer fawn was observed lying motionless in leaf litter in Grano de Oro FPMP plot in November 1995 (A.Howe, T.King, C.Lyal), and then in January 1996 also in the Grano de Oro FPMP plot a larger fawn was observed being chased by a tayra (A.Howe, T.King).

White-tailed deer have visited the clearing at Las Cuevas more frequently than brocket deer, and have been seen on many occasions on the roads in the area. An adult with young was observed near Millionario on 2 July 1996 (T.King).

Rodents (Rodentia)

Several small rodents have been observed around Las Cuevas and on the Chiquibul road, but not effort has been made to identify them. Two species of squirrel have been seen, Deppe's squirrel being the smallest and most often seen, and a larger and darker squirrel (Variegated squirrel?) being less frequently seen. Three large rodents have been seen occasionally, but their elusive behaviour, particularly of the nocturnal paca, makes determination of their status in the Chiquibul difficult without recording other data such as tracks.

In August 1994, a group of four paca were observed on several nights foraging for fallen avocado fruit in the Las Cuevas clearing (N.Bol, C.Bol). Since then there has been only one more sighting, that being when one was disturbed during the day in the burnt area between Las Cuevas and Millionario in June 1996 (A.Ibanez-Garcia).

Agouti have been observed on the Chiquibul road several times particularly in the area between New Maria and Christina camps, and also along the track between New Maria camp and FPMP plot.

Brazilian rabbits have been reported on five occasions, twice near the Guacamallo bridge in July 1995 (N., C., N., & M.Bol, N.Rosado), then once near New Maria camp at night in May 1996 (N.Bol, T.King), once near the Ceiba tree near Christina camp at night on 1st July 1996 (T.King, F.Ryland, A.Robertson), and again near Guacamallo bridge in July 1996 (N.Bol, A.Howe).

Anteater and armadillo (Xenarthra)

There has been just one report of an anteater sighting, that of the Northern tamandua crossing the road at New Maria camp around midday in November 1995 (J.Howell, I.Howell).

Armadillos have been seen on three occasions, all at night: one in July 1994 in the Las Cuevas clearing (N.Bol, C.Bol, C.Lyal, J. Beard, E.Valdez), and two separately on the 15th September 1995, one on the road between Millionario and Cubetas (T.King) and one at Millionario (N.Bol, C.Bol, A.Howe).

Opossums (Marsupialia: Didelphidae)

Little effort has been made to identify or record opossums; however a mouse opossum, presumably the mexican mouse opossum, was observed at night near Las Cuevas in June 1996 (T. King and A. Howe). From looking at the distribution maps in Emmons and Freer (1990), other opossums that are likely to be present in the Chiquibul include Common opossum (*Didelphis marsupialis*), Virginia opossum (*Didelphis virginiana*), Common gray four-eyed opossum (*Philander opossum*), and possibly Water opossum (*Chironectes minimus*), Woolly mouse opossum (*Micoureus cinereus*) and Central American woolly opossum (*Caluromys derbianus*).

Recommendations for future work at Las Cuevas

Even without specific studies into the mammals of the Chiquibul, a wealth of data can be collected by casual observations by the long-term and continuous presence of staff and visitors at Las Cuevas. This information should be recorded in a single book as it is observed, and should include notes on date, time of day, locality, numbers of individuals, sex, age and condition if obvious, behaviour, evidence of feeding, any other information that may be of interest, and the names of the observers. For threatened species, particularly tapir, otter, cats and perhaps also white-lipped peccary, observations on tracks and signs would be very useful to help ascertain more fully distribution and status in the Chiquibul. Vocalisations of howler monkeys could also be recorded, as sightings are rare. If anybody visits Las Cuevas who can identify small mammals, including bats, all information they can provide would be very valuable. This information should then be processed at regular intervals, at least every year or two, and made available.

References

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