

DEPARTAMENTO DE EVALUACIÓN DE ESTUDIOS DE IMPACTO AMBIENTAL

Panamá, 24 de mayo de 2023

DEIA-DEEIA- NC-0106-2405-2023

Licenciada

SUSANA SERRACÍN

Presidenta

ALIANZA PARA LA CONSERVACIÓN Y EL DESARROLLO (ACD)

E.S.D.

Hoy: 25 de Mayo de 2023  
Siendo las 2:51 de la tarde  
notifique personalmente a Susana Serracin  
documentación (Anexo) de la presente  
Notificador Susana Serracin  
Notificado 4-246-825

**Respetada Licenciada Sarracín:**

En atención a nota sin número, recibida en nuestra Dirección el 17 de mayo de 2023, en la cual indica "... le enviamos información en progreso sobre la biodiversidad única que puede ser afectada por la construcción de la Carretera Quebrada Ancha – María Chiquita. Estos datos refieren en general a este paisaje de corredor biológico y alta endemidad incluso fuera del Parque Nacional Chagres... Vale aclarar que este documento todavía es preliminar, y existen otros investigadores que aún no han podido incluir sus hallazgos en la preparación del informe final...", adjuntando documento compuesto de 33 páginas, titulado "The Biological Importance and Conservation Value of The Santa Rita Ridge", el cual se encuentra en idioma inglés.

Al respecto, tenemos a bien indicar que, en base a lo dispuesto en el artículo 877 del Código Judicial, el cual señala "... Si los documentos procedentes del extranjero estuvieren escritos en lengua que no sea el español, se presentarán traducidos o se solicitará su traducción por intérprete público y en defecto de éste, por uno ad hoc, nombrado por el tribunal", debe presentar la documentación en idioma español, o en su defecto documento traducido al idioma español por un traductor público autorizado.

Para mayor información contactar al teléfono 500-0855 ext. 6838

Sin otro particular nos suscribimos.

Atentamente,

ANALILIA CASTILLERO P.

Directora de Evaluación de Impacto Ambiental, encargada

ACP/MDG/aa/ma  
NA



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Panamá, 17 de mayo de 2023

**Ingeniero**  
**Domi Luis Domínguez**  
**Director Nacional de Evaluación y Ordenamiento**  
**Ministerio de Ambiente de Panamá**



Estimado Ing. Domínguez:

Dentro del plazo establecido para la consulta pública, y pese a las irregularidades que ha tenido el sistema PREFASIA, le enviamos información en progreso sobre la biodiversidad única que puede ser afectada por la construcción de la **Carretera Quebrada Ancha-María Chiquita**. Estos datos se refieren en general a este paisaje de corredor biológico y alta endemividad incluso fuera del **Parque Nacional Chagres**.

Lamentamos que el equipo consultor no haya contactado a los investigadores que han estado trabajando en la biodiversidad de esta área desde hace más de quince años, y accedido a la información necesaria para una evaluación apropiada; razón por la que consideramos que la línea base de biodiversidad presentada en el estudio de impacto ambiental no es adecuada desde ningún punto de vista.

En nuestra opinión esto invalida por completo el proceso de evaluación de impacto ambiental; pues no es posible identificar impactos ni sugerir su mitigación sin una línea base apropiada que debe involucrar consulta bibliográfica, entrevistas con expertos y muestreo directo tanto en temporada lluviosa como en temporada seca.

Vale aclarar que este documento todavía es preliminar, y que existen otros investigadores que aún no han podido incluir sus hallazgos en la preparación del informe final.

Atentamente,



**Lic. Susan Serracín**  
**Presidente**  
**Alianza para la Conservación y el Desarrollo (ACD)**

# **The biological importance and conservation value of the Santa Rita ridge**

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## 1. Executive summary

This report has been compiled to summarise the biological importance and conservation value of the Santa Rita ridge, specifically citing its significance for on-going scientific research on biodiversity and climate change.

The Santa Rita ridge is a transitional zone between the lowland Canal Zone, the Atlantic slope forests of east Colón province, and the bordering Chagres National Park. Importantly, the Santa Rita ridge includes areas of primary forest, i.e. ancient ecosystems which contain very large trees and support significant biodiversity of different taxonomic groups. The biodiversity of the region is rich in birds, mammals, amphibians, reptiles, and invertebrates, and includes IUCN red-listed species of multiple taxa, such as the Jaguar (near threatened), Baird's Tapir (endangered), Limosa Harlequin Frog (critically endangered), and the Harpy Eagle (vulnerable) (Appendix 1). The unique ridge ecosystem supports a network of pristine streams and rivers which drain south through the Agua Clara and Rio Gatun into Lake Gatun, and north through the Rio Viejo and Rio Mango Indio into the Atlantic. These riverine environments combined with mountainous slopes and primary rainforest provide habitat of the highest conservation value, as well providing clean water for downstream settlements. Encroachment into these areas by infrastructure may be highly damaging due to the need to fell ancient forests, remove critical habitats and degrade the surrounding areas into the future. Roads in particular result in the pollution of surrounding habitat by aerosols from cars and trucks, water runoff filled with heavy metal contamination and litter, and noise. Furthermore, construction in this undeveloped area will likely impact surrounding areas through greater access for illegal hunters and prospectors, and lead to greater development pressure on the landscape.

The Santa Rita ridge and the adjoining forests are key dispersal areas for IUCN red-listed mammals including the Tapir and Jaguar, with research by the Sociedad Mastozoológica de Panamá (SOMASPA) showing that species disperse along the ridge east of the between the Canal Zone and the Chagres National Park (CNP). This area is the last remaining connection of the 'Mesoamerican Biodiversity Corridor', across which biodiversity may disperse both ways along the Isthmus. Construction and developments across this corridor will bisect and isolate populations, impeding their dispersal and affecting the survival of many culturally important Panamanian species.

To date, 24 scientific publications have resulted from research along the Santa Rita ridge including species discoveries and globally relevant climate change research. Namely, the Esteban Alphonso Lee Reserve (EALN) which sits at the headwaters of the Agua Clara, Rio Viejo, and Rio Mango-Indio is a key site of climate change and ecology research. One study undertaken at the site, begun in 2016 (Basham and Scheffers 2020), provided the first ever data to show the vertical movements of amphibians across dry and wet seasons, and planned future research will be the first in the world to measure the vertical movement of amphibians due to climate change. Thus, the Santa Rita ridge has additional value as a site of on-going scientific research.

Lastly, the EALN borders the CNP which extends along the Santa Rita ridge, and was created specifically to protect the forests and rivers which provide water for the Panama Canal, as well as clean water for downstream settlements. The CNP is an area of unspoiled forests, mountains, and rivers, rich in cultural and conservation value. At the Global Climate Summit (COP26) in Glasgow, 2021, Panama was a signatory of the pledge to halt deforestation and continue to reduce carbon emissions. Panama is one of the few countries in the world to claim that it is carbon negative, with its forests sequestering more carbon than the country emits. In summary, developments in this region will work against this pledge by damaging key ecosystems and contributing to climate change, habitat loss and habitat degradation.

## 2. Biodiversity of the Santa Rita ridge

### a. Existing research

The area of the Santa Rita ridge covers a number of ecosystem types across altitudinal zones from 0 - 500 m elevation, including grasslands, plantations, cattle pastures, agriculture, secondary forests, and primary forests, with those south of the ridge lying within the watershed of Lake Gatun and the Panama Canal. There is a large existing body of research on a variety of animal and plant taxa in this region (Table 1), and in addition there have been studies on topics such as Canal Zone biodiversity (Condit et al. 2001; Ibáñez et al. 2002) , ecosystem services (Simonit and Perrings 2013), pollination and biochemistry (Dodson et al. 1969), and drought impacts on forests (Condit 1998).

**Table 1:** List of studies on different taxa conducted along the Santa Rita ridge (not including those conducted in the Chagres National Park).

Taxa		Citations
Vertebrates	Amphibians	(Basham and Scheffers 2020; Basham et al. 2021; Basham et al. 2022)
	Reptiles	(Basham, unpublished data)
	Mammals	(Meyer et al. 2013) (SOMASPA)
	Mammals - bats	(SOMASPA)
	Birds	Sierra Llorona Panama Lodge (eBird data)
Invertebrates	Bees	(Dressler et al. 1968; Dodson et al. 1969; Ricklefs et al. 1969; Roubik 1983; Vit et al. 2018)
	Beetles	(Ratcliffe 1992)
	Mites	Helen Esser (unpublished data)
Plants	Trees/Plants	(McPherson 1988; Condit 1998; Pyke et al. 2001; Pérez et al. 2005; Chust et al. 2006; Dick and Heuertz 2008; Jones et al. 2013)
	Orchids	(Dressler et al. 1968; Dodson et al. 1969)
	Epiphytes	(Gentry 1977)

	Grasses	(Soderstrom 1982)
Fungi	Fungi	(Schappe et al. 2017; Schappe et al. 2020)

### b. Species richness

The Santa Rita ridge is particularly high in species diversity and richness. The EALR supports at least 297 species of birds (ebird data), 48 species of amphibians and 63 species of reptiles alone (Appendix 1), not including the lowland species residing in the forested areas of the Rio Viejo and Rio Mango Indio. Authors of a 2006 study found the forests of Santa Rita as highly distinctive floristically, relative to forests near the Canal (Chust et al. 2006). Indeed, in terms of tree species, single plots in the Canal corridor averaged 84 tree species per ha, whereas those on Santa Rita had 145 tree species per ha (Ibáñez et al. 2002). Another study also identified the Santa Rita ridge as a transitional zone which carries the highest number of species in the Canal watershed, with many species limited to the ridge due to its unique climatic characteristics (Pérez et al. 2005).

**Table 2:** Species diversity in the regions of the Panama Canal watershed, per 40x40 m inventory plot. The sample size, N is the number of plots in the region; Adapted from Perez et al. 2005.

site	species	N
Santa Rita	174.0	2 (1)
Upper Chagres	155.0	4 (0)
Pipeline	99.7	10 (10)
Sherman	94.9	34 (34)
BCNM	92.6	35 (35)
Laguna	87.5	2 (2)
Gamboa	70.7	12 (6)
Pacific	56.7	25 (22)

### c. Primary forest ecosystems

The importance of primary forests is well understood, and not more so than in the EALR. A recent study by Basham et al (2022) demonstrated that the giant Espavé trees found along the rivers and streams of the region support entirely unique communities of amphibians (Figure 1). Research from other forests have also shown the incalculable value of large trees, which take hundreds of years to grow and provide woody materials at various states of decay (Penone et al. 2019), water filled cavities (Yanoviak 2001), epiphyte masses (Woods et al. 2015; Spruch et al. 2019), and



numerous additional microhabitats that may require many years to develop and accumulate (Mahmoud et al. 2015; Lindenmayer 2016). Thus, all efforts should be made to prioritize the conservation of large trees and primary forests.

*linobates fulguritus*) encountered in the



wet season at 22 m aboveground. Three tadpoles sit on the back of the individual, to be transported to a water filled epiphyte nursery. b) The Espavé (*Anacardium excelsum*) tree at which the individual in (a) was found. Diameter at breast height = 1.5 m; tree height = 42 m. Photos © Edmund Basham. Figure reproduced from Basham et al (2021).

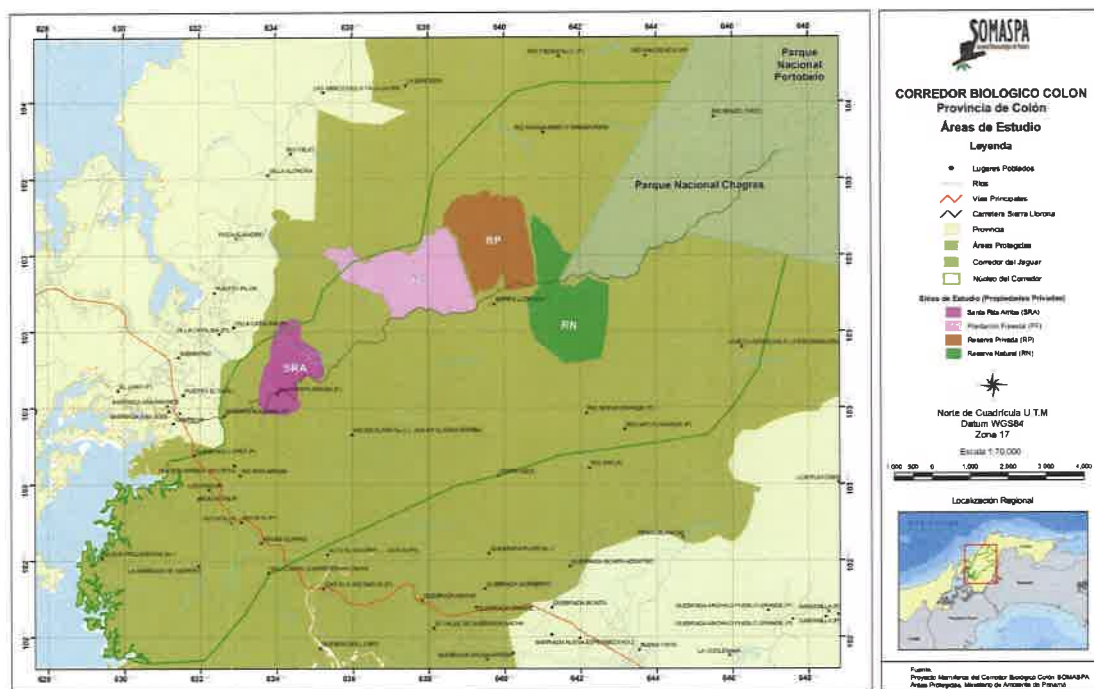
#### **d. Threatened species**

We have established that the region hosts a great richness of biodiversity, but within these ecological communities are some specific species which are under threat of extinction. Panama has a sense of national pride in its biodiversity and the great efforts by which the government and the public take to protect it. The Amphibian Ark project which has worked to save the 'Rana dorada' (*Atelopus zeteki*) and other species of *Atelopus* toads is a great example of this. After the chytrid fungal disease was encountered 30 years ago, a captive breeding program was set up to save many species from extinction. This includes the rare limosa harlequin frog (critically endangered), which still resides in pristine forests found along the Santa Rita ridge. There are also many other species of concern along the ridge (Appendix 1), including the Jaguar (Figure 4), Baird's Tapir (Figure 4), Harpy eagle, Geoffroy's Spider Monkey, and many others. Of the 4

species of primate found along the ridge, all four are listed as species of concern on the IUCN redlist, with Geoffroy's Spider Monkey listed as Endangered. Indeed, other taxa which have not been adequately studied along the ridge, particularly insects, are likely to also be high in richness and contain more species of concern that we currently are unaware of. Thus, it is clear that the matrix of habitats found along the ridge provide habitat for a large number of imperilled species, and must be prioritized for protection.

#### **e. Regional biogeography**

In terms of the wider landscape context, the Panama Canal area is the bottleneck of the Mesoamerican Biological Corridor and presents a barrier for the movements of species along the isthmus (Meyer et al. 2013). The physical structure of the Canal itself, the increasing human population, fragmentation of habitat, forest disturbance and hunting (Wright et al. 2000), all combine to impact the dispersal of biodiversity through this important region. Studies by SOMASPA researchers have shown that large mammals move along the ridge, and this specific corridor has been found to be a link between the Chagres NP and the Soberania NP (USAID 2009). However, the corridor is already under significant pressure because it consists of small patches of forests in a matrix of cattle pastures, with a high human density and with two major roads which make it difficult and dangerous for animals to cross (Figure 2) (Meyer et al. 2013). Thus, landscape connectivity is of great importance for species movement in the region and remaining forests have been noted as top priority for conservation (Condit et al. 2001). Indeed, Condit et al (2001), suggests that the Santa Rita ridge be added to the park system because these would contribute to the forest corridor that runs the length of Central America.



**Figure 2:** The biological corridor of Colón. SOMASPA

### **3. Impacts of infrastructure development**

The Santa Rita ridge, particularly the EALR, the Chagres NP, and the lowland forests of the Atlantic slope, contain large areas of primary forest. These habitats and the species contained within are the most susceptible to damage by human development. Developments, particularly roads, in tropical forests can cause a wide range of negative impacts, such as habitat loss and fragmentation, disruption of animal movement and population density, and directly by mortality through collisions with vehicles (Baskaran and Boominathan 2010). These effects impact biodiversity across many taxa, from the largest mammals to the smallest insects (Baskaran and Boominathan 2010; Benítez-López et al. 2010). In this section we will cover the basic impacts that would result from development in this region.

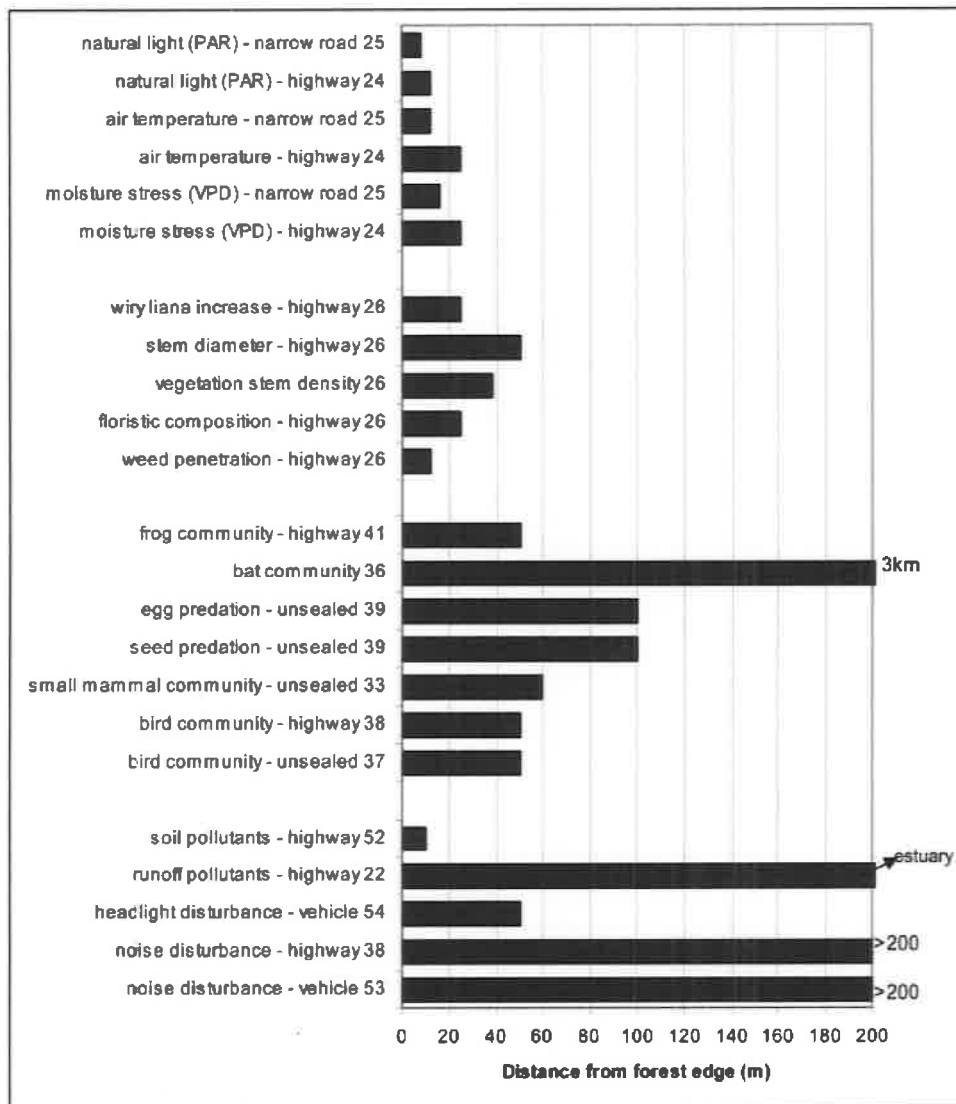
#### **a. Noise pollution**

The clearest impact of development is the removal of forest habitat, however, the impact of construction does not stop at the road edge (Figure 3). The noise generated from traffic, especially from heavy trucks, reduced the capacity of animals to perceive natural sounds, which are fundamental to survival and reproduction of wildlife, as well as dissuading individuals from the area (Francis et al. 2012; Buxton et al. 2017; Sordello et al. 2020). Noise pollution that alters the distribution or behavior of key species such as pollinators or seed dispersers can also in turn impact ecosystem functioning (Francis et al. 2012).

#### **b. Water/aerosol pollution**

A second source of pollution is water runoff from the road surface. Harmful chemicals and heavy metals from the breakdown of the road surface, car tyres, verge maintenance chemicals such as herbicides, and particles produced from exhausts can build up on the road surface, to then be washed into nearby rivers which are contaminated (Goosem 2007). Roadsides may become contaminated with metals sourced from: fuel (Pb); lubricants (Zn, Cd, Ba, Co, Mo); tyres (Ca, Zn); catalysts (Pt, Pd, Cr, Ni); protection equipment (Zn, Ca, Cr, Mn); brakes (Zn, Ca, Cu, Cr, Mn); road construction materials (Fe, Al, Mn, As); and re-suspension of road dust (Pb, Fe, Al, Mn, Zn, Cu, Ni, Mo, As) (Vaiškūnaitė et al. 2012). These chemicals may also directly penetrate the forest as aerosols which can change the soil chemistry of surrounding areas, poison plants, and reduce

photosynthetic rates (Degtjarenko 2016). Furthermore, in seasonal environments, such as the Santa Rita ridge, pollutants can build up during the dry season on the road surface and be washed as a toxic pulse when the first heavy rains arrive, which is very damaging to stream quality and wildlife, particularly amphibians, fish, and freshwater invertebrates (Laurance et al. 2009).



**Figure 3:** Effect of penetration of edge and disturbance effects from rainforest roads. Reproduced from Goosen (2007).

### c. Fragmentation

Aside from the impact of pollutants on the surrounding environment, the physical structure of roads and infrastructure impedes the movement of animals and causes the fragmentation of habitat.

Many animals avoid human areas due to light, noise, and pollution (Figure 3), and tropical species are especially vulnerable to encroachment because they include many ecological specialists that avoid even narrow (<30-m wide) clearings (Laurance et al. 2009). Indeed, a meta-analysis study showed that bird populations were impacted by infrastructure over distances up to about 1 km, and for mammal populations up to about 5 km (Benítez-López et al. 2010). Using this 5 km figure, we can calculate that each single 1 km of road would impact 10 km<sup>2</sup> of habitat for mammals. The movement of individuals between populations which is necessary for gene flow and healthy communities, is strongly impeded, and such changes in the mammal community can effect forest dynamics via changes in predation, herbivory, and seed dispersal (Laurance et al. 2006). In the Santa Rita biological corridor, large developments could sever the connections between the larger Chagres and Soberania National Parks (Figure 2).





**Figure 4:** Photos of a Jaguar (*Panthera onca*), and a Baird's Tapir (*Tapirus bairdii*), taken by trail cameras at the Esteban Alphonso Lee Reserve.

#### **d. Hunting/development pressure**

An indirect impact of opening up undeveloped areas is the increased accessibility for negative human activity, such as illegal prospectors, developers, and hunters (Laurance et al. 2009). Illegal hunters are already active on the Santa Rita ridge and would benefit from greater accessibility. A recent meta-analysis synthesised 176 studies and found that bird and mammal abundances declined by ~58% and by ~83% in hunted areas and suffered some depletion within 7 and 40 km from roads and settlements (Benítez-López et al. 2017). Land around roads is also more likely to be developed

in future, increasing human impact and in the case of Santa Rita, further severing the biological corridor.

#### **e. Climate change**

Panama is currently a carbon negative country because its forests sequester more carbon than the country produces; a huge achievement. This carbon is stored mostly within primary forests such as those in along the Santa Rita ridge and the Atlantic slope towards Portobelo. Removal or degradation of this habitat for developments would release very large quantities of carbon into the atmosphere, in addition to the carbon expended for construction materials and activities themselves. The forests of this area contain hardwood trees hundreds of years old and over 50 m tall, sequestering carbon each year, providing habitat to unique species, and regulating water flow to downstream settlements. Thus, protecting these forests from deforestation and development would not only avoid emissions but also allow on-going carbon sequestration into the future, which is now necessary for the world to keep temperatures below 2 degrees C of warming, as agreed by Panama at COP26 (Mackey et al. 2020).

#### **f. On-going research**

As covered in Section 2 (a), there is a large body of research being conducted along the Santa Rita ridge. The EALR specifically has been a base of operation for scientific exploration and research for almost two decades, and the work produced there includes unique studies on the impacts of seasonality and climate change on rainforest fauna. The matrix of habitats along the ridge also provides a time series of forest regrowth which can be studied to assess the conservation value of naturally regenerating land. In the study of climate change and other slow acting processes, long term data is of the utmost importance (Franklin 1989). Any disturbance therefore to the scientifically important forests of the Santa Rita ridge would imperil the possibility for long term data collection, setting back these scientific research programs by decades.

#### **4. Recommendations**

We recommend that any prospective developmental activities in the region should be assessed with the utmost caution and consideration due to the biological and conservation value of the landscape. Plans should take into account the need for considerable mitigation efforts to limit pollution, reduce and offset carbon emissions, and reduce disturbance to natural ecosystems. Impact assessments in this regard should understand the existing literature and scientific research taking place along the ridge, and should utilise the knowledge of local experts to understand the best methods to limit damage if developments are deemed absolutely necessary.

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## 6. Appendix 1

### Species list

Amphibians	Frogs	Common Name	IUCN Redlist Status
	<i>Agalychnis callidryas</i>	Red-eyed Treefrog	Least Concern
	<i>Allobates talamancae</i>	Talamanca Rocket Frog	Least Concern
	<i>Andinobates fulguritus</i>	Yellow-bellied poison frog	Least Concern
	<i>Andinobates minutus</i>	Blue-bellied poison frog	Least Concern
	<i>Atelopus zeteki</i>	Limosa Harlequin Frog	<b>Critically Endangered</b>
	<i>Cochranella euknemos</i>	San Jose Cochran Frog	Least Concern
	<i>Cochranella granulosa</i>	Grainy Cochran Frog	Least Concern
	<i>Colostethus panamansis</i>	Panama Rocket Frog	Least Concern
	<i>Craugastor crassidigitus</i>	Isla Bonita Robber Frog	Least Concern
	<i>Craugastor fitzingeri</i>	Fitzinger's Robber Frog	Least Concern
	<i>Craugastor gollmeri</i>	Evergreen Robber Frog	Least Concern
	<i>Craugastor opimus</i>	<i>Craugastor opimus</i>	Least Concern
	<i>Craugastor talamancae</i>	Almirante Robber Frog	Least Concern
	<i>Craugastor brandsfordii</i>	Bransford's Robber Frog	Least Concern
	<i>Cruziohyla sylviae</i>	Sylvia's Tree Frog	Least Concern
	<i>Dendrobates auratus</i>	Green and Black Poison Frog	Least Concern
	<i>Diasporus citrinobapheus</i>	Yellow Dink Frog	Least Concern
	<i>Diasporus diastema</i>	Common Dink Frog	Least Concern
	<i>Diasporus vocator</i>	Vocal Dink Frog	Least Concern
	<i>Ecnomiohyla miliaria</i>	Cope's Brown Treefrog	Least Concern
	<i>Engystomops pustulosus</i>	Tungara Frog	Least Concern
	<i>Espadarana prosoblepon</i>	Nicaragua Giant Glass Frog	Least Concern
	<i>Hyalinobatrachium colymbiophyllum</i>	Plantation Glass Frog	Least Concern
	<i>Hyalinobatrachium talamancae</i>	Talamanca Glass Frog	Least Concern
	<i>Hyloscirtus palmeri</i>	Palmer's Treefrog	Least Concern
	<i>Hypsiboas rosenbergi</i>	Rosenberg's Treefrog	Least Concern
	<i>Pristimantis cerasinus</i>	Limon Robber Frog	Least Concern
	<i>Pristimantis cruentus</i>	Chiriqui Robber Frog	Least Concern
	<i>Pristimantis gaigei</i>	Fort Randolph Robber Frog	Least Concern
	<i>Pristimantis pardalis</i>	Leopard Robber Frog	Least Concern
	<i>Pristimantis ridens</i>	Rio San Juan Robber Frog	Least Concern
	<i>Pristimantis taeniatus</i>	Banded Robber Frog	Least Concern
	<i>Rhaebo haematiticus</i>	Truando Toad	Least Concern
	<i>Rhinella alata</i>	<i>Rhinella alata</i>	<b>Data Deficient</b>
	<i>Rhinella horribilis</i>	Giant Toad	Least Concern



Reptiles	<i>Sachatamia albomaculata</i>	White-spotted Cochran Frog	Least Concern
	<i>Sachatamia ilex</i>	Limon Giant Glass Frog	Least Concern
	<i>Silverstoneia flotator</i>	Rainforest Rocket Frog	Least Concern
	<i>Silverstoneia nubicola</i>	Boquete Rocket Frog	<b>Vulnerable</b>
		New Granada Cross-banded Treefrog	Least Concern
	<i>Smilisca phaeota</i>	Panama Cross-banded Treefrog	Least Concern
	<i>Smilisca sila</i>	Chiriqui Glass Frog	Least Concern
	<i>Teratohyla pulverata</i>	Spiny Cochran Frog	Least Concern
	<i>Teratohyla spinosa</i>		
	<b>Caecelians</b>		
	<i>Caecilia volcani</i>	Cocle Caecilian	Least Concern
	<i>Dermophis parviceps</i>	La Loma Caecilian	Least Concern
	<b>Salamanders</b>		
	<i>Bolitoglossa schizodactyla</i>	Cocle Mushroomtongue Salamander	Least Concern
	<i>Oedipina complex</i>	Gamboa Worm Salamander	Least Concern
		Colombian Worm Salamander	Least Concern
	<i>Oedipina parvipes</i>		
	<b>Snakes</b>		
	<i>Amastridium veliferum</i>	Amastridium veliferum	Least Concern
	<i>Bothriechis schlegelii</i>	Eyelash Viper	Least Concern
	<i>Bothrops asper</i>	Terciopelo	Least Concern
	<i>Chironius grandisquamis</i>	Ecuador Sipo	Least Concern
	<i>Coniophanes fissidens</i>	Yellowbelly Snake	Least Concern
	<i>Corallus annulatus</i>	Ringed Tree Boa	Least Concern
	<i>Dendrophidion apharocybe</i>	Forest Racer	<b>Data Deficient</b>
	<i>Dendrophidion percarinatum</i>	South American Forest Racer	Least Concern
	<i>Dipsas articulata</i>	American Snail-eater	Least Concern
	<i>Enuliophis sclateri</i>	Colombian Longtail Snake	Least Concern
	<i>Geophis brachycephalus</i>	Colombian Earth Snake	Least Concern
	<i>Imantodes cenchoa</i>	Imantodes cenchoa	Least Concern
	<i>Leptodeira annulata</i>	Banded Cat-eyed Snake	Least Concern
	<i>Leptodeira septentrionalis</i>	Northern Cat-eyed Snake	Least Concern
	<i>Leptophis ahaetulla</i>	Parrot Snake	Least Concern
	<i>Leptophis riveti</i>	Despax's Parrot Snake	Least Concern
	<i>Micrurus alleni</i>	Allen's Coral Snake	Least Concern
	<i>Micrurus nigrocinctus</i>	Micrurus nigrocinctus	Least Concern
	<i>Ninia maculata</i>	Spotted Coffee Snake	Least Concern
	<i>Nothopsis rugosus</i>	Rough Coffee Snake	Least Concern
	<i>Oxybelis aeneus</i>	Brown Vinesnake	Least Concern
	<i>Oxybelis brevirostris</i>	Cope's Vine Snake	Least Concern
	<i>Oxybelis fulgidus</i>	Green Vine Snake	Least Concern

<i>Oxyrhopus petolarius</i>	Forest Flame Snake	Least Concern
<i>Phrynonax poecilonotus</i>	Puffing Snake	Least Concern
<i>Pliocercus euryzonus</i>	Cope's False Coral Snake	Least Concern
<i>Porthidium nasutum</i>	Hognosed Pit Viper	Least Concern
	Adorned Graceful Brown Snake	Least Concern
<i>Rhadinaea decorata</i>		Least Concern
<i>Sibon argus</i>	Argus Snail Sucker	Least Concern
<i>Sibon nebulatus</i>	Cloudy Snail-eating Snake	Least Concern
<i>Siphlophis cervinus</i>	Panama Spotted Night Snake	Least Concern
<i>Spelodes pulatus</i>	Chicken Snake	Least Concern
	Degenhardt's Scorpion-eating Snake	Least Concern
<i>Stenorrhina degenhardtii</i>		Least Concern
<i>Tantilla ruficeps</i>	<i>Tantilla ruficeps</i>	Least Concern
<b>Turtles</b>		
<i>Rhinoclemmys annulata</i>	Brown Wood Turtle	<b>Near Threatened</b>
<b>Lizards</b>		
<i>Amphisbaena fuliginosa</i>	Speckled Worm Lizard	Least Concern
<i>Anolis kunayalae</i>	<i>Anolis kunayalae</i>	Least Concern
<i>Anolis vittigerus</i>	Garland Anole	Least Concern
<i>Basiliscus basiliscus</i>	Common Basilisk	Least Concern
<i>Corytophanes cristatus</i>	Smooth Helmeted Iguana	Least Concern
<i>Diploglossus monotropis</i>	Escorpión Coral	Least Concern
<i>Enyaloides heterolepis</i>	Bocourt's dwarf iguana	Least Concern
<i>Holcosus festivus</i>	Middle American Ameiva	Least Concern
<i>Lepidoblepharis emberawoundule</i>	<i>Lepidoblepharis emberawoundule</i>	<b>Data Deficient</b>
<i>Lepidoblepharis sanctamartae</i>	<i>Lepidoblepharis sanctamartae</i>	<b>Data Deficient</b>
<i>Lepidoblepharis xanthostigma</i>	<i>Lepidoblepharis xanthostigma</i>	<b>Data Deficient</b>
<i>Lepidophyma flavimaculatum</i>	Yellow-spotted Night Lizard	Least Concern
<i>Leposoma rugiceps</i>	<i>Loxopholis rugiceps</i>	Least Concern
<i>Marisora unimarginata</i>	Central American Mabuya	Least Concern
<i>Morunasaurus groi</i>	Dunn's Spinytail Iguana	<b>Endangered</b>
<i>Norops biporcatus</i>	Giant Green Anole	Least Concern
<i>Norops capito</i>	<i>Anolis capito</i>	Least Concern
<i>Norops humilis</i>	Humble Anole	Least Concern
<i>Norops lemurinus</i>	<i>Anolis lemurinus</i>	Least Concern
<i>Norops limifrons</i>	Border Anole	Least Concern
<i>Norops oxylophus</i>	<i>Anolis oxylophus</i>	Least Concern
<i>Norops polylepis</i>	Many-scaled Anole	Least Concern
<i>Norops vittigerus</i>	Garland Anole	Least Concern
<i>Polychrus gutturosus</i>	Berthold's Bush Anole	Least Concern

<b>Birds</b>	<i>Ptychoglossus festae</i>	Peracca's Largescale Lizard	Least Concern
	<i>Ptychoglossus plicatus</i>	Taylor's Largescale Lizard	Least Concern
	<i>Sphaerodactylus homolepis</i>	Caribbean Least Gecko	Least Concern
	<i>Thecadactylus rapicauda</i>	Turniptail Gecko	Least Concern
	<b>Birds</b>		
	<i>Amazilia tzacatl</i>	Rufous-tailed Hummingbird	Least Concern
	<i>Amazona autumnalis</i>	Red-lored Parrot	Least Concern
	<i>Amazona farinosa</i>	Mealy Parrot	<b>Near Threatened</b>
	<i>Anthracothonax nigricollis</i>	Black-throated Mango	Least Concern
	<i>Antrostomus carolinensis</i>	Chuck-will's-widow	<b>Near Threatened</b>
	<i>Antrostomus rufus</i>	Rufous Nightjar	Least Concern
	<i>Ardea alba</i>	Great White Egret	Least Concern
	<i>Arremonops conirostris</i>	Black-striped Sparrow	Least Concern
	<i>Attila spadiceus</i>	Bright-rumped Attila	Least Concern
		Buff-throated Foliage-gleaner	Least Concern
	<i>Automolus ochrolaemus</i>		Least Concern
	<i>Baryphthengus martii</i>	Rufous Motmot	Least Concern
	<i>Basileuterus delatirii</i>	Chestnut-capped Warbler	Least Concern
	<i>birdKlais guimeti</i>	Violet-headed Humming	Least Concern
	<i>Brotogeris jugularis</i>	Orange-chinned Parakeet	Least Concern
	<i>Bubulcus ibis</i>	Cattle Egret	Least Concern
	<i>Buteo albonotatus</i>	Zone-tailed Hawk	Least Concern
	<i>Buteo brachyurus</i>	Short-tailed Hawk	Least Concern
	<i>Buteo nitidus</i>	Grey-lined Hawk	Least Concern
	<i>Buteo platypterus</i>	Broad-winged Hawk	Least Concern
	<i>Buteo swainsoni</i>	Swainson's Hawk	Least Concern
	<i>Buteogallus anthracinus</i>	Common Black Hawk	Least Concern
	<i>Buteogallus urubitinga</i>	Great Black Hawk	Least Concern
	<i>Butorides striata</i>	Striated Heron	Least Concern
	<i>Butorides virescens</i>	Green Heron	Least Concern
	<i>Cacicus uropygialis</i>	Scarlet-rumped Cacique	Least Concern
	<i>Campephilus haematogaster</i>	Crimson-bellied Woodpecker	Least Concern
		Crimson-crested	
	<i>Campephilus melanoleucos</i>	Woodpecker	Least Concern
		Southern Beardless-	
	<i>Camptostoma obsoletum</i>	Tyrannulet	Least Concern
	<i>Cantorchilus elutus</i>	Isthmian Wren	Least Concern
	<i>Cantorchilus leucotis</i>	Buff-breasted Wren	Least Concern
	<i>Cantorchilus nigricapillus</i>	Bay Wren	Least Concern
	<i>Capsiempis flaveola</i>	Yellow Tyrannulet	Least Concern
	<i>Caracara plancus</i>	Crested Caracara	Least Concern
	<i>Cardellina canadensis</i>	Canada Warbler	Least Concern

<i>Cathartes aura</i>	Turkey Vulture	Least Concern
<i>Catharus fuscescens</i>	Veery	Least Concern
<i>Catharus minimus</i>	Grey-cheeked Thrush	Least Concern
<i>Catharus ustulatus</i>	Swainson's Thrush	Least Concern
<i>Celeus loricatus</i>	Cinnamon Woodpecker	Least Concern
<i>Ceratopipra mentalis</i>	Red-capped Manakin	Least Concern
<i>Cercomacroides tyrannina</i>	Dusky Antbird	Least Concern
<i>Chaetura brachyura</i>	Short-tailed Swift	Least Concern
<i>Chaetura pelagica</i>	Chimney Swift	<b>Vulnerable</b>
<i>Chaetura sp.</i>	Chaetura sp.	Least Concern
<i>Chaetura spinicaudus</i>	Band-rumped Swift	Least Concern
<i>Chalybura buffonii</i>	White-vented Plumeleteer	Least Concern
<i>Chalybura urochrysa</i>	Bronze-tailed Plumeleteer	Least Concern
<i>Chiroxiphia lanceolata</i>	Lance-tailed Manakin	Least Concern
<i>Chlorestes julie</i>	Violet-bellied Hummingbird	Least Concern
<i>Chlorophanes spiza</i>	Green Honeycreeper	Least Concern
<i>Chlorostilbon assimilis</i>	Garden Emerald	Least Concern
<i>Chordeiles acutipennis</i>	Lesser Nighthawk	Least Concern
<i>Chordeiles minor</i>	Common Nighthawk	Least Concern
<i>Chrysuronia</i>	Sapphire-throated	
<i>coeruleogularis</i>	Hummingbird	Least Concern
<i>Ciccaba nigrolineata</i>	Black-and-white Owl	Least Concern
<i>Ciccaba virgata</i>	Mottled Owl	Least Concern
<i>Circus hudsonius</i>	Northern Harrier	Least Concern
<i>Claravis pretiosa</i>	Blue Ground Dove	Least Concern
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo	Least Concern
<i>Coereba flaveola</i>	Bananaquit	Least Concern
<i>Colonia colonus</i>	Long-tailed Tyrant	Least Concern
<i>Columba livia</i>	Rock Dove	Least Concern
<i>Columbina talpacoti</i>	Ruddy Ground Dove	Least Concern
<i>Contopus cinereus</i>	Tropical Pewee	Least Concern
<i>Contopus cooperi</i>	Olive-sided Flycatcher	<b>Near Threatened</b>
<i>Contopus sordidulus</i>	Western Wood-Pewee	Least Concern
<i>Contopus virens</i>	Eastern Wood-Pewee	Least Concern
<i>Coragyps atratus</i>	American Black Vulture	Least Concern
<i>Crotophaga ani</i>	Smooth-billed Ani	Least Concern
<i>Crypturellus soui</i>	Little Tinamou	Least Concern
<i>Cyanerpes cyaneus</i>	Red-legged Honeycreeper	Least Concern
<i>Cyanerpes lucidus</i>	Shining Honeycreeper	Least Concern
<i>Cyanocorax affinis</i>	Black-chested Jay	Least Concern
<i>Cyanoloxia cyanoides</i>	Blue-black Grosbeak	Least Concern
<i>Cymbilaimus lineatus</i>	Fasciated Antshrike	Least Concern

Cyphorhinus	Song Wren	Least Concern
phaeocephalus	Black Swift	<b>Vulnerable</b>
Cypseloides niger	Blue Dacnis	Least Concern
Dacnis cayana	Scarlet-thighed Dacnis	Least Concern
Dacnis venusta	Plain-brown Woodcreeper	Least Concern
Dendrocincla fuliginosa	Northern Barred-	
Dendrocolaptes	Woodcreeper	Least Concern
sanctithomae	Bobolink	Least Concern
Dolichonyx oryzivorus	Lineated Woodpecker	Least Concern
Dryocopus lineatus	Spot-crowned Antvireo	Least Concern
Dysithamnus puncticeps	Little Blue Heron	Least Concern
Egretta caerulea	Snowy Egret	Least Concern
Egretta thula	Lesser Elaenia	Least Concern
Elaenia chiriquensis	Yellow-bellied Elaenia	Least Concern
Elaenia flavogaster	Swallow-tailed Kite	Least Concern
Elanoides forficatus	Broad-billed Motmot	Least Concern
Electron platyrhynchum	Alder Flycatcher	Least Concern
Empidonax alnorum	Willow Flycatcher	Least Concern
Empidonax traillii	Acadian Flycatcher	Least Concern
Empidonax virescens	Checker-throated	
Epinecrophylla fulviventris	Stipplethroat	Least Concern
Eucometis penicillata	Grey-headed Tanager	Least Concern
Euphonia fulvicrissa	Fulvous-vented Euphonia	Least Concern
Euphonia laniirostris	Thick-billed Euphonia	Least Concern
Euphonia luteicapilla	Yellow-crowned Euphonia	Least Concern
Euphonia minuta	White-vented Euphonia	Least Concern
Falco columbarius	Merlin	Least Concern
Falco peregrinus	Peregrine Falcon	Least Concern
Falco rufigularis	Bat Falcon	Least Concern
Falco sparverius	American Kestrel	Least Concern
Florisuga mellivora	White-necked Jacobin	Least Concern
Formicarius analis	Black-faced Antthrush	Least Concern
Fregata magnificens	Magnificent Frigatebird	Least Concern
Geothlypis trichas	Common Yellowthroat	Least Concern
Geotrygon montana	Ruddy Quail-Dove	Least Concern
Glaucidium griseiceps	Central American Pygmy-Owl	Least Concern
Glyphorhynchus spirurus	Wedge-billed Woodcreeper	Least Concern
Gymnopithys bicolor	Bicoloured Antbird	Least Concern
Harpia harpyja	Harpy Eagle	<b>Vulnerable</b>
Habia fuscicauda	Red-throated Ant-Tanager	Least Concern
Harpagus bidentatus	Double-toothed Kite	Least Concern
Heliomaster longirostris	Long-billed Starthroat	Least Concern

<i>Heliothryx barroti</i>	Purple-crowned Fairy	Least Concern
<i>Henicorhina leucosticta</i>	White-breasted Wood-Wren	Least Concern
<i>Herpetotheres cachinnans</i>	Laughing Falcon	Least Concern
<i>Heterospingus rubrifrons</i>	Sulphur-rumped Tanager	Least Concern
<i>Hirundinidae</i> sp.	swallow sp.	Least Concern
<i>Hirundo rustica</i>	Barn Swallow	Least Concern
<i>Hydropsalis cayennensis</i>	White-tailed Nightjar	Least Concern
<i>Hylopezus perspicillatus</i>	Streak-chested Antpitta	Least Concern
<i>Hylophilus flavipes</i>	Scrub Greenlet	Least Concern
<i>Hylophylax naevioides</i>	Spotted Antbird	Least Concern
<i>Icterus chrysater</i>	Yellow-backed Oriole	Least Concern
<i>Icterus galbula</i>	Baltimore Oriole	Least Concern
<i>Icterus mesomelas</i>	Yellow-tailed Oriole	Least Concern
<i>Ictinia mississippiensis</i>	Mississippi Kite	Least Concern
<i>Ictinia plumbea</i>	Plumbeous Kite	Least Concern
<i>Jacamerops aureus</i>	Great Jacamar	Least Concern
<i>Laniocera rufescens</i>	Speckled Mourner	Least Concern
<i>Legatus leucophaeus</i>	Piratic Flycatcher	Least Concern
<i>Leiothlypis peregrina</i>	Tennessee Warbler	Least Concern
<i>Lepidocolaptes souleyetii</i>	Streak-headed Woodcreeper	Least Concern
<i>Lepidothrix coronata</i>	Blue-crowned Manakin	Least Concern
<i>Leptodon cayanensis</i>	Grey-headed Kite	Least Concern
<i>Leptotila cassinii</i>	Grey-chested Dove	Least Concern
<i>Leptotila verreauxi</i>	White-tipped Dove	Least Concern
<i>Leucopternis</i> <i>semitlumbeus</i>	Semiplumbeous Hawk	Least Concern
<i>Lophornis delattrei</i>	Rufous-crested Coquette	Least Concern
<i>Lophotrix cristata</i>	Crested Owl	Least Concern
<i>Loriotus luctuosus</i>	White-shouldered Tanager	Least Concern
<i>Lurocalis semitorquatus</i>	Short-tailed Nighthawk	Least Concern
<i>Malacoptila panamensis</i>	White-whiskered Puffbird	Least Concern
<i>Manacus vitellinus</i>	Golden-collared Manakin	Least Concern
<i>Megarynchus pitangua</i>	Boat-billed Flycatcher	Least Concern
<i>Megascops choliba</i>	Tropical Screech-Owl	Least Concern
<i>Melanerpes pucherani</i>	Black-cheeked Woodpecker	Least Concern
<i>Melanerpes rubricapillus</i>	Red-crowned Woodpecker	Least Concern
<i>Micrastur semitorquatus</i>	Collared Forest-Falcon	Least Concern
<i>Microcerculus marginatus</i>	Scaly-breasted Wren	Least Concern
<i>Microrhopias quixensis</i>	Dot-winged Antwren	Least Concern
<i>Milvago chimachima</i>	Yellow-headed Caracara	Least Concern
<i>Mimus gilvus</i>	Tropical Mockingbird	Least Concern
<i>Mionectes oleagineus</i>	Ochre-bellied Flycatcher	Least Concern
<i>Mniotilta varia</i>	Black-and-white Warbler	Least Concern

<i>Molothrus oryzivorus</i>	Giant Cowbird	Least Concern
<i>Momotus subrufescens</i>	Whooping Motmot	Least Concern
<i>Myiarchus crinitus</i>	Great Crested Flycatcher	Least Concern
<i>Myiarchus panamensis</i>	Panama Flycatcher	Least Concern
<i>Myiarchus sp.</i>	<i>Myiarchus sp.</i>	Least Concern
<i>Myiarchus tuberculifer</i>	Dusky-capped Flycatcher	Least Concern
<i>Myiodynastes luteiventris</i>	Sulphur-bellied Flycatcher	Least Concern
<i>Myiodynastes maculatus</i>	Streaked Flycatcher	Least Concern
<i>Myiopagis caniceps</i>	Grey Elaenia	Least Concern
<i>Myiopagis gaimardii</i>	Forest Elaenia	Least Concern
<i>Myiornis atricapillus</i>	Black-capped Pygmy-Tyrant	Least Concern
<i>Myiozetetes cayanensis</i>	Rusty-margined Flycatcher	Least Concern
<i>Myiozetetes similis</i>	Social Flycatcher	Least Concern
<i>Myrmotherula axillaris</i>	White-flanked Antwren	Least Concern
<i>Myrmotherula pacifica</i>	Pacific Antwren	Least Concern
<i>Notharchus hyperrhynchus</i>	White-necked Puffbird	Least Concern
<i>Notharchus pectoralis</i>	Black-breasted Puffbird	Least Concern
<i>Notharchus tectus</i>	Pied Puffbird	Least Concern
<i>Nyctibius grandis</i>	Great Potoo	Least Concern
<i>Nyctibius griseus</i>	Common Potoo	Least Concern
<i>Nyctidromus albicollis</i>	Common Pauraque	Least Concern
<i>Oncostoma olivaceum</i>	Southern Bentbill	Least Concern
<i>Ornithion brunneicapillus</i>	Brown-capped Tyrannulet	Least Concern
<i>Ortalis cinereiceps</i>	Grey-headed Chachalaca	Least Concern
<i>Pachyramphus</i>		
<i>cinnamomeus</i>	Cinnamon Becard	Least Concern
<i>Pachyramphus</i>		
<i>polychopterus</i>	White-winged Becard	Least Concern
<i>Pachysylvia aurantiifrons</i>	Golden-fronted Greenlet	Least Concern
<i>Pachysylvia decurtata</i>	Lesser Greenlet	Least Concern
<i>Pandion haliaetus</i>	Osprey	Least Concern
<i>Panyptila cayennensis</i>	Lesser Swallow-tailed Swift	Least Concern
<i>Parkesia noveboracensis</i>	Northern Waterthrush	Least Concern
<i>Patagioenas cayennensis</i>	Pale-vented Pigeon	Least Concern
<i>Patagioenas nigrirostris</i>	Short-billed Pigeon	Least Concern
<i>Patagioenas speciosa</i>	Scaled Pigeon	Least Concern
<i>Pelecanus occidentalis</i>	Brown Pelican	Least Concern
<i>Petrochelidon pyrrhonota</i>	Cliff Swallow	Least Concern
<i>Phaenostictus mcleannani</i>	Ocellated Antbird	Least Concern
<i>Phaethornis guy</i>	Green Hermit	Least Concern
<i>Phaethornis longirostris</i>	Long-billed Hermit	Least Concern
<i>Phaethornis sp.</i>	hermit sp.	Least Concern
<i>Phaethornis striigularis</i>	Stripe-throated Hermit	Least Concern

<i>Pheucticus ludovicianus</i>	Rose-breasted Grosbeak	Least Concern
<i>Pheugopedius fasciatoventris</i>	Black-bellied Wren	Least Concern
<i>Piaya cayana</i>	Squirrel Cuckoo	Least Concern
<i>Pionus menstruus</i>	Blue-headed Parrot	Least Concern
<i>Piranga flava</i>	Hepatic Tanager	Least Concern
<i>Piranga olivacea</i>	Scarlet Tanager	Least Concern
<i>Piranga rubra</i>	Summer Tanager	Least Concern
<i>Pitangus lictor</i>	Lesser Kiskadee	Least Concern
<i>Pitangus sulphuratus</i>	Great Kiskadee	Least Concern
<i>Platyrinchus coronatus</i>	Golden-crowned Spadebill	Least Concern
<i>Poliocrania exsul</i>	Chestnut-backed Antbird	Least Concern
<i>Polioptila bilineata</i>	White-browed Gnatcatcher	Least Concern
<i>Polyerata amabilis</i>	Blue-chested Hummingbird	Least Concern
<i>Progne chalybea</i>	Grey-breasted Martin	Least Concern
<i>Protonotaria citrea</i>	Prothonotary Warbler	Least Concern
<i>Psarocolius decumanus</i>	Crested Oropendola	Least Concern
	Chestnut-headed Oropendola	Least Concern
<i>Psarocolius wagleri</i>	Oropendola	Least Concern
<i>Pseudastur albicollis</i>	White Hawk	Least Concern
<i>Pteroglossus torquatus</i>	Collared Aracari	Least Concern
<i>Pulsatrix perspicillata</i>	Spectacled Owl	Least Concern
<i>Pyrilia haematotis</i>	Brown-hooded Parrot	Least Concern
<i>Querula purpurata</i>	Purple-throated Fruitcrow	Least Concern
<i>Quiscalus mexicanus</i>	Great-tailed Grackle	Least Concern
<i>Ramphastos ambiguus</i>	Yellow-throated Toucan	<b>Near Threatened</b>
<i>Ramphastos sulfuratus</i>	Keel-billed Toucan	<b>Near Threatened</b>
<i>Ramphocaenus melanurus</i>	Long-billed Gnatwren	Least Concern
<i>Ramphocelus dimidiatus</i>	Crimson-backed Tanager	Least Concern
<i>Ramphocelus flammigerus</i>	Flame-rumped Tanager	Least Concern
<i>Rhynchocyclus olivaceus</i>	Olivaceous Flatbill	Least Concern
<i>Rhytipterna holerythra</i>	Rufous Mourner	Least Concern
<i>Riparia riparia</i>	Sand Martin	Least Concern
<i>Rupornis magnirostris</i>	Roadside Hawk	Least Concern
<i>Saltator grossus</i>	Slate-coloured Grosbeak	Least Concern
<i>Saltator striatipectus</i>	Streaked Saltator	Least Concern
<i>Sarcoramphus papa</i>	King Vulture	Least Concern
<i>Saucerottia edward</i>	Snowy-bellied Hummingbird	Least Concern
<i>Sclerurus guatemalensis</i>	Scaly-throated Leaf-tosser	Least Concern
<i>Seiurus aurocapilla</i>	Ovenbird	Least Concern
<i>Setophaga castanea</i>	Bay-breasted Warbler	Least Concern
<i>Setophaga cerulea</i>	Cerulean Warbler	<b>Near Threatened</b>
<i>Setophaga fusca</i>	Blackburnian Warbler	Least Concern



<i>Setophaga magnolia</i>	Magnolia Warbler	Least Concern
<i>Setophaga palmarum</i>	Palm Warbler	Least Concern
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler	Least Concern
<i>Setophaga petechia</i>	Yellow Warbler	Least Concern
<i>Setophaga ruticilla</i>	American Redstart	Least Concern
<i>Sirystes albogriseus</i>	Choco Sirystes	Least Concern
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker	Least Concern
<i>Spinus psaltria</i>	Lesser Goldfinch	Least Concern
<i>Spiza americana</i>	Dickcissel	Least Concern
<i>Spizaetus tyrannus</i>	Black Hawk-Eagle	Least Concern
<i>Sporophila corvina</i>	Variable Seedeater	Least Concern
<i>Sporophila funerea</i>	Thick-billed Seed-Finch	Least Concern
<i>Sporophila nigricollis</i>	Yellow-bellied Seedeater	Least Concern
	Southern Rough-winged Swallow	Least Concern
<i>Stelgidopteryx ruficollis</i>	Swallow	Least Concern
<i>Stilpnia larvata</i>	Golden-hooded Tanager	Least Concern
<i>Streptoprocne zonaris</i>	White-collared Swift	Least Concern
<i>Sturnella magna</i>	Eastern Meadowlark	<b>Near Threatened</b>
<i>Tachyphonus delatrii</i>	Tawny-crested Tanager	Least Concern
<i>Tangara gyrola</i>	Bay-headed Tanager	Least Concern
<i>Tangara inornata</i>	Plain-coloured Tanager	Least Concern
<i>Tangara lavinia</i>	Rufous-winged Tanager	Least Concern
<i>Terenotriccus erythrurus</i>	Ruddy-tailed Flycatcher	Least Concern
<i>Thalurania colombica</i>	Crowned Woodnymph	Least Concern
<i>Thamnophilus atrinucha</i>	Black-crowned Antshrike	Least Concern
<i>Thamnophilus doliatus</i>	Barred Antshrike	Least Concern
<i>Thraupis episcopus</i>	Blue-grey Tanager	Least Concern
<i>Thraupis palmarum</i>	Palm Tanager	Least Concern
<i>Thryophilus rufalbus</i>	Rufous-and-white Wren	Least Concern
<i>Tiaris olivaceus</i>	Yellow-faced Grassquit	Least Concern
<i>Tigrisoma fasciatum</i>	Fasciated Tiger-Heron	Least Concern
<i>Tinamus major</i>	Great Tinamou	Least Concern
<i>Tityra inquisitor</i>	Black-crowned Tityra	Least Concern
<i>Tityra semifasciata</i>	Masked Tityra	Least Concern
<i>Todirostrum cinereum</i>	Common Tody-Flycatcher	Least Concern
<i>Tolmomyias assimilis</i>	Yellow-margined Flycatcher	Least Concern
<i>Tolmomyias sulphurens</i>	Yellow-olive Flycatcher	Least Concern
<i>Trochilidae</i> sp.	hummingbird sp.	Least Concern
<i>Troglodytes aedon</i>	House Wren	Least Concern
<i>Trogon caligatus</i>	Gartered Trogon	Least Concern
<i>Trogon chionurus</i>	White-tailed Trogon	Least Concern
<i>Trogon massena</i>	Slaty-tailed Trogon	Least Concern
<i>Trogon melanurus</i>	Black-tailed Trogon	Least Concern

<b>Mammals</b>	Trogon rufus	Black-throated Trogon	Least Concern
	Turdus grayi	Clay-coloured Thrush	Least Concern
	Tyrannulus elatus	Yellow-crowned Tyrannulet	Least Concern
	Tyrannus melancholicus	Tropical Kingbird	Least Concern
	Tyrannus tyrannus	Eastern Kingbird	Least Concern
	Tyrannus vociferans	Cassin's Kingbird	Least Concern
	Vanellus chilensis	Southern Lapwing	Least Concern
	Vireo flavifrons	Yellow-throated Vireo	Least Concern
	Vireo flavoviridis	Yellow-green Vireo	Least Concern
	Vireo olivaceus	Red-eyed Vireo	Least Concern
	Vireolanius pulchellus	Green Shrike-Vireo	Least Concern
	Volatinia jacarina	Blue-black Grassquit	Least Concern
	Xenops minutus	Plain Xenops	Least Concern
	Xiphorhynchus lachrymosus	Black-striped Woodcreeper	Least Concern
	Xiphorhynchus susurrans	Cocoa Woodcreeper	Least Concern
	Zimmerius parvus	Mistletoe Tyrannulet	Least Concern
	<b>Primates</b>		
	Alouatta palliata	Mantled Howler Monkey	<b>Vulnerable</b>
	Aotus zonalis	Panamanian Night Monkey	<b>Near Threatened</b>
	Ateles geoffroyi	Geoffroy's Spider Monkey	<b>Endangered</b>
		Colombian White-throated Capuchin	<b>Vulnerable</b>
	Cebus capucinus		
	<b>Rodents</b>		
	Agouti paca	Agouti	Least Concern
	Coendou mexicanus	Coendou mexicanus	Least Concern
	Dasyprocta punctata	Central American agouti	Least Concern
	Hoplomys gymnurus	Armored spiny rat	Least Concern
	Proechimys semispinosus	Spiny rat	Least Concern
	Sciurus granatensis	Red-tailed squirrel	Least Concern
	Sciurus variegatoides	Sciurus variegatoides	Least Concern
	<b>Carnivora</b>		
	Nasua narica	White-nosed coati	Least Concern
	Eira barbara	Tayra	Least Concern
	Herpailurus yagouaroundi	Jaguarundi	Least Concern
	Leopardus pardalis	Ocelot	Least Concern
	Leopardus wiedii	Margay	<b>Near Threatened</b>
	Lontra longicaudis	Neotropical Otter	<b>Near Threatened</b>
	Panthera onca	Jaguar	<b>Near Threatened</b>
	Puma concolor	Puma	Least Concern
	<b>Bats</b>		
	Artibeus phaeotis	Pygmy Fruit-eating Bat	Least Concern
	Artibeus watsoni	Thomas's Fruit-eating Bat	Least Concern

<i>Carollia castanea</i>	Chestnut Short-tailed Bat	Least Concern
<i>Vampyressa thylene</i>	<i>Vampyressa thylene</i>	Least Concern
<b>Other Mammals</b>		
<i>Bradypus variegatus</i>	Brown-throated Sloth	Least Concern
<i>Cabassous centralis</i>	Naked-tailed armadillo	<b>Data Deficient</b>
<i>Choloepus hoffmanni</i>	Hoffmann's Two-toed Sloth	Least Concern
<i>Dasypus novemcinctus</i>	Nine-banded armadillo	Least Concern
<i>Didelphis marsupialis</i>	Common opossum	Least Concern
<i>Mazama temama</i>	Red-brocket deer	<b>Data Deficient</b>
<i>Metachirus nudicaudatus</i>	Brown four-eyed opossum	Least Concern
<i>Pecari tajacu</i>	Collared peccary	Least Concern
<i>Potos flavus</i>	Kinkajou	Least Concern
<i>Procyon cancrivorus</i>	Crab-eating racoon	Least Concern
<i>Tamandua mexicana</i>	Vested anteater	Least Concern
<i>Tapirus bairdii</i>	Baird's Tapir	<b>Endangered</b>
<i>Tayassu tajacu</i>	White-lipped Peccary	<b>Vulnerable</b>