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Mammals under pressure: presence data for assessing extinction of endemic, threatened and mammals subject to use in Colombia

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Abstract

We compiled a dataset including 122,336 occurrences corresponding to 129 mammal species from Colombia, of which 38 are endemic, 92 species subject to use by humans and 56 are Data Deficient or are categorized under a threat category in either national or global red lists. The information included records from 30 of the 32 departments of Colombia and constitutes a relevant baseline for future distribution and conservation assessments of 24% of the Colombian mammals. Most of the records (98%) come from non-invasive sampling methods (n=120,835) such as trail cameras. However, we highlight the contribution of museum specimens (n= 1,412) for providing a comprehensive and supported list of mammals, especially small and medium-sized species, many of which have restricted geographic distributions in the country. This dataset is the result of a joint collaborative and interinstitutional effort that serves as the basis for a cooperative work aimed towards a comprehensive assessment of the current conservation status of all mammal species in the country.

Background

Colombia is considered the sixth country in mammal richness worldwide with 543 species and the fourth in America after Brazil, Mexico, and Peru. This high diversity represents a challenge given the responsibility for conservation and management issues. Although in recent years there have been advances in understanding of the systematics, distribution and other aspects of mammalian biology, the book "*Libro Rojo de los Mamíferos de Colombia"* published in 2006 was a massive effort to assess the risk category of mammals of Colombia. To contribute to new risk assessments, species' records are essential to increase the information for this taxonomic group in Colombia, especially for little-documented taxa. This dataset contains the records of 129 mammal species, 24% of those reported across the country by trail cameras and museum specimens provided by 51 institutions. The dataset also includes comments about the occurrences that can be useful for the identification of priority areas for conservation of these species.

New Information

This is the first dataset that provides a complete compilation of mammal records based on trail cameras, human observations and specimens deposited in biological collections in Colombia. We compiled a dataset with unpublished information, including 122,336 records corresponding to 129 species, of which 38 are endemic, 92 identified as species subject to use by humans in the literature,

and 56 are categorized as Data Deficient or threatened according to national or international assessments. The information comes from 30 out of 32 departments of Colombia and constitutes relevant input for future distribution and conservation assessments. Most records (n=120,835, 98%) come from non-invasive sampling methods such as trail cameras. However, we highlight the contribution of museum specimens (n= 1,412), especially for small and medium-sized species, many of them with restricted distributions in the country. This dataset constitutes a joint collaborative and interinstitutional effort that serves as the basis for cooperative work to comprehensively assess the current conservation status of all mammal species in Colombia.

Keywords

Biological Collections, Conservation, Distribution, Departments, Mammalia, Camera trap

Introduction

In Colombia, several initiatives have sought to provide information and legally protect species that have some risk of extinction. The most recent embodied in the Red Book of Mammals of Colombia (Rodríguez-Mahecha et al., 2006) was the input for resolution 1912 of the year 2017 by the Ministry of Environment and Sustainable Development - MADS (MADS, 2017). Since then, the information on threatened species had not been updated or adjusted to recent taxonomic changes in the country (e.g., Ramírez-Chaves et al., 2021) or at the global level (Burgin et al., 2020). Currently, the checklist of mammal species in Colombia supports the presence of 545 species (Ramírez-Chaves et al., 2021), but there is limited knowledge about their ecology or conservation requirements limiting the effectiveness of conservation policies and management actions in the areas where they inhabit. This situation may directly affect the country's mammal conservation strategies. This situation mainly affects species with restricted distributions within the national territory (Ramírez-Chaves et al., 2016). Additionally, some species are subject to use by human communities (Osorno et al., 2014; Racero-Casarrubia & González-Maya, 2014), or have a high risk of extinction due to multiple causes (Rodríguez- Mahecha et al., 2006).

The incipient knowledge of basic biology, population status, and distribution for most mammals in Colombia difficulties the assessment of the threat status, limiting the design of effective conservation strategies at a national scale (Suárez-Castro et al., 2021). This scenario affects most mammal species in the country, and although some larger species might have better information, small-sized species are subject to information gaps. For example, while Colombia has the second-highest number of bats (Chiroptera) in the world (Burgin et al. 2018), none of those species is included in national risk assessments (MADS, 2017). Additionally, several endemic mammals and other species categorized by the Red List of Threatened Species of the International Union for Conservation of Nature – IUCN (e.g., Solari, 2016; Roach & McCay, 2019) are not included in the national red list. This problem has been highlighted in recent works where the urgency of a national risk assessment for all mammals has been mentioned (Cruz-Rodríguez et al., 2018), as well as specific examples for different groups; for example, the inclusion of several species of bats within the list of threatened species of the Ministry of Environment and Sustainable Development (Rodríguez-Posada et al., 2017, 2018; Morales-Martínez & López-Arévalo, 2018; Cruz-Rodríguez et al., 2018; Ramírez-Chaves et al., 2020; Morales-Martínez et al., 2020: Esquivel et al., 2020) or several species of marsupials, shrews, and some endemic rodents (Gardner , 2008; Patton et al., 2015; Díaz-Nieto & Voss, 2016; Noguera-Urbano et al., 2019).

Although there have been advances in understanding mammal distribution of Colombia as is the case of "*Atlas de la Biodiversidad*" (Henao-Díaz et al, 2020; Ramírez-Chaves et al. 2022), there is the need to update its conservation status and to implement management or conservation policies. Therefore, it is imperative to consolidate the most up-to-date ecological and distributional data to update its conservation status that may impact the national risk assessments. In Colombia, these data are dispersed in consultancy reports, theses, and information deposited in biological collections, institutional repositories, and databases such as the Colombian Biodiversity Information System (SiB

Colombia). A compilation of data on the presence of these species from different sources of information is very relevant to facilitate their availability and use for decision-makers. This work presents a data set with 129 species corresponding to endemics, subject to use, and threatened mammals compiled from biological collections, non-governmental organizations, research groups from universities, and independent researchers.

General description

Purpose:

This work contains a data set compiling information on 129 mammal species of Colombia listed as threatened, endemic, or subject to use in the country. It also provides valuable information about the presence of several mammal species in Colombia by passive methods such as trail cameras, human observation, and collected specimens that are contained in biological collections across the country.

Sampling methods

Description:

The information seeks to increase the knowledge about the threatened, endemic or subject-to-use mammals in Colombia. Also, it represents the effort to publish information for recognizing the diversity of mammals and to support their presence in the country that allows monitoring changes in species in time and identifying key conservation areas.

Sampling description:

This paper provides records of 129 mammal species, including taxa previously reported under some threat category (Rodríguez-Mahecha et al., 2006; MADS, 2017). Also information on endemic species to Colombia (Solari et al., 2013; Ramírez-Chaves et al., 2016), and species that present some type of use by human communities according to literature (Racero-Casarrubia & González-Maya, 2014) is included. Using the list, we call on the biological collections to the Registro Nacional de Colecciones (RNC), the Colombian Photo-trapping Network, non-governmental organizations, academic institutions, and independent researchers to systematize and release records of the targeted species. Finally, the information received was compiled using a Darwin Core format.

Quality control:

We refined the scientific names to be consistent with current taxonomy based on recent taxonomic treatments (e.g. Burgin et al., 2020), portals with taxonomic information (e.g., Mammal Diversity Database: https://www.mammaldiversity.org/), and following the most updated checklist of mammals of Colombia (Ramírez-Chaves et al., 2021). Additionally, the data set was refined to include only information at the species level, georeferenced localities within the maritime and continental areas of Colombia, and corroborated under the standards of the Biomodelos of the Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (Velásquez-Tibatá et al., 2019, http://biomodelos.humboldt.org.co/).

Step description:

1. We generated a dataset of mammal species to assess extinction risk based on three characteristics:
    a. Species previously reported under some category of threat at the national and global levels (Rodríguez-Mahecha et al., 2006; MADS, 2017; IUCN, 2020).
    b. Species endemic to Colombia (Solari et al., 2013; Ramírez-Chaves et al., 2016, 2020)

    c. Species that present some type of use by human communities (Racero-Casarrubia & González-Maya, 2014).
2. We validated the names according to Burgin et al. (2020; https://www.mammaldiversity.org/). For species not included there, we followed the next information available in portals such as the IUCN Red List (https://www.iucnredlist.org/), Integrated Taxonomic Information System (ITIS; https://www.itis.gov/), Encyclopedia of Life (EOL; https://eol.org/) and BatNames (https://batnames.org/), and the most updated lists of species for the country (Ramírez-Chaves et al., 2016, 2021).
3. For each species on the list, we integrated the trail camera data and information of specimens deposited in biological collections. Data not available in the database of the ´Sistema de Información sobre Biodiversidad de Colombia - SiB Colombia were requested at the species level from the collections attached to the Registro Nacional de Colecciones (RNC), the Colombian Photo-trapping Network, non-governmental organizations, academic institutions, and independent researchers.
4. We compiled all the information at the species level.
5. We organized the information received following the Darwin Core standard for the documentation of biological records.

Geographic coverage

Description:

The study area corresponds to the Colombian territory, specifically reporting records for 2,387 localities distributed in 30 departments and 314 counties of the five natural regions of Colombia excluding the insular region (Archipelago of San Andrés and Providencia in the Caribbean Sea and Malpelo, and Gorgona Islands in the Pacific Ocean) (Fig. 1).

Coordinates:

4°34'15.1" N Latitude; 74°17'50.4" O Longitude

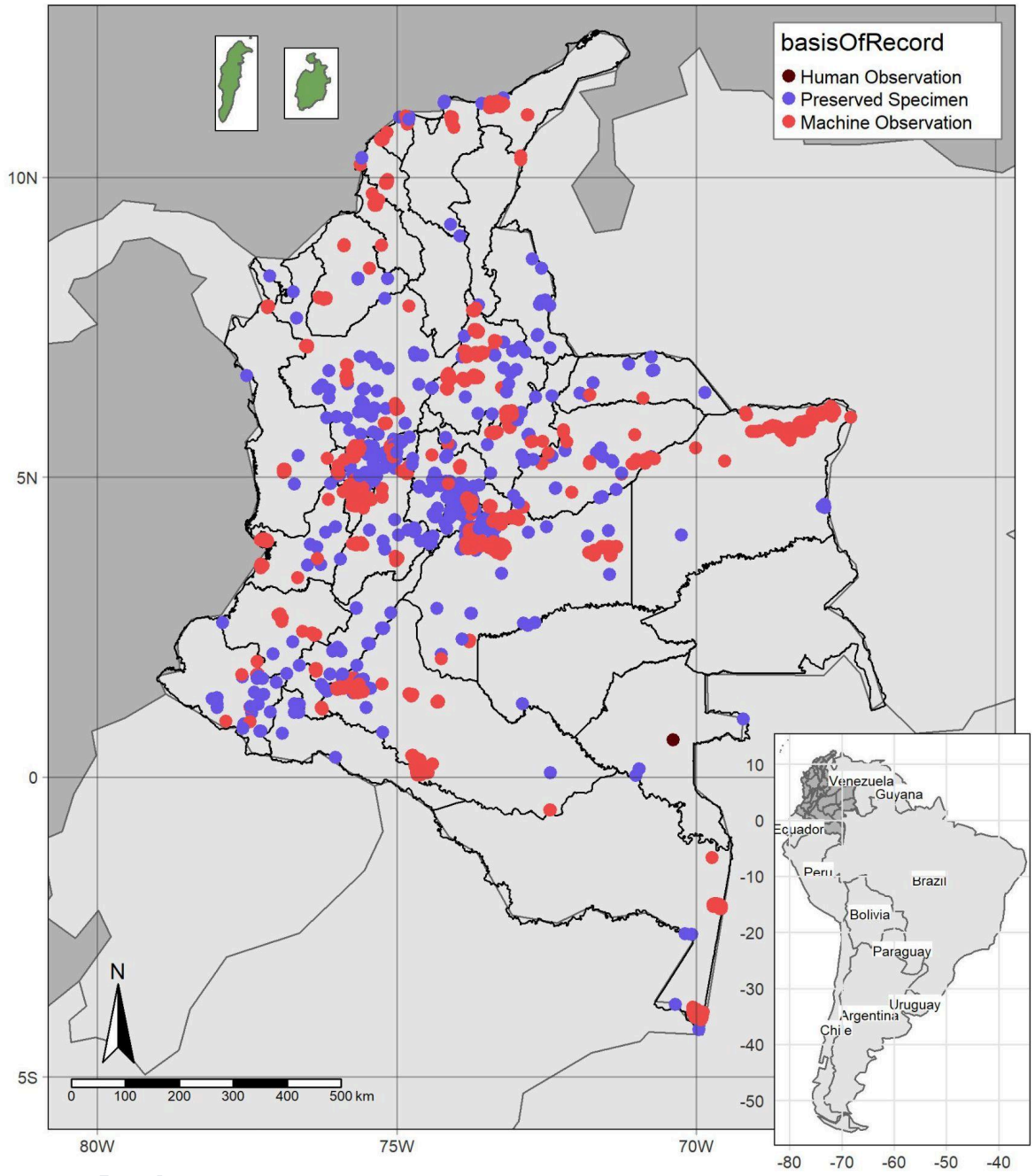

Figure 1. Overview of observations made in Colombia by basis of record

Taxonomic coverage

Description:

The dataset includes records on 129 species of mammals (Mammalia), classified in 32 families and 12 orders (Fig. 2) (Ramírez-Chaves et al., 2016, 2021). The families with the highest number of recorded species were Cricetidae (17 species), Didelphidae (11 species), and Phyllostomidae and Cebidae (nine species respectively). The families with the highest number of records were Dasyproctidae (29075 records), Cuniculidae (16325 records), and Didelphidae (11958 records). Taxonomy follows current national list (Ramírez-Chaves et al., 2016, 2021) and was validated by national experts in mammal taxonomy.

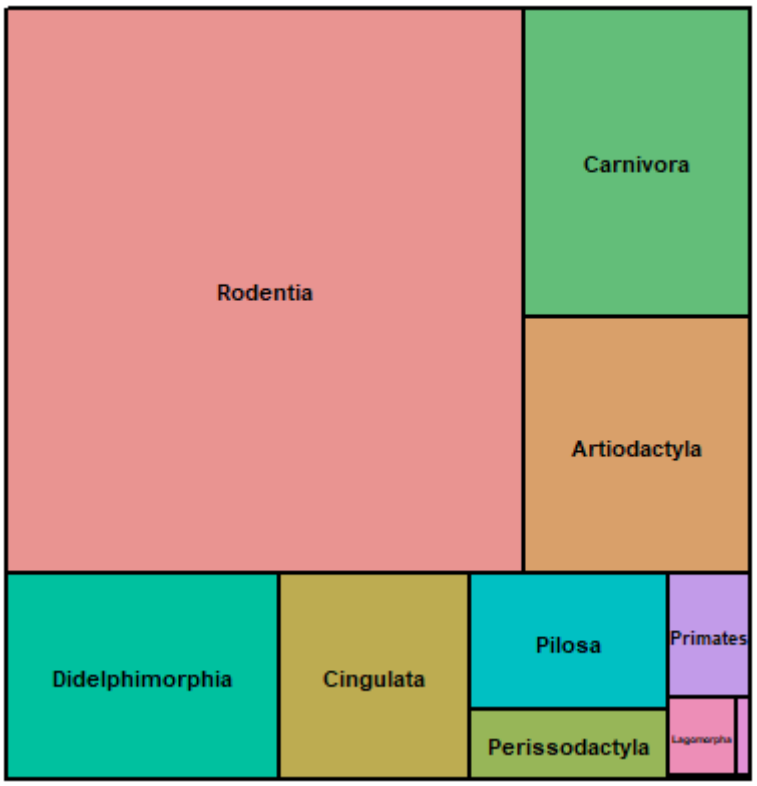

Figure 2. Number of records per taxonomic order

Taxa included:

Rank	Scientific Name
Order	Artiodactyla
Order	Carnivora
Order	Artiodactyla (Cetacea)
Order	Chiroptera
Order	Cingulata
Order	Didelphimorphia
Order	Eulipotyphla
Order	Lagomorpha
Order	Perissodactyla
Order	Pilosa
Order	Primates
Order	Rodentia
Family	Cervidae
Family	Tayassuidae
Family	Canidae
Family	Felidae
Family	Mephitidae
Family	Mustelidae
Family	Procyonidae

Family	Ursidae
Family	Balaenopteridae
Family	Phyllostomidae
Family	Vespertilionidae
Family	Chlamyphoridae
Family	Dasypodidae
Family	Didelphidae
Family	Soricidae
Family	Leporidae
Family	Tapiridae
Family	Bradypodidae
Family	Choloepidae
Family	Cyclopedidae
Family	Myrmecophagidae
Family	Atelidae
Family	Callitrichidae
Family	Cebidae
Family	Pitheciidae
Family	Caviidae
Family	Cricetidae
Family	Cuniculidae
Family	Dasyproctidae
Family	Dinomyidae
Family	Echimyidae
Family	Erethizontidae
Family	Sciuridae
Species	*Mazama rufina* (Pucheran, 1851)
Species	*Mazama sanctaemartae* J. A. Allen, 1915
Species	*Mazama temama* (Kerr, 1792)
Species	*Odocoileus cariacou* (Boddaert, 1784)
Species	*Odocoileus goudotii* (Gay & Gervais, 1846)
Species	*Pudu mephistophiles* (de Winton, 1896)
Species	*Dicotyles tajacu* (Linnaeus, 1758)
Species	*Tayassu pecari* (Link, 1795)
Species	*Atelocynus microtis* (Sclater, 1883)
Species	*Cerdocyon thous* (Linnaeus, 1766)
Species	*Lycalopex culpaeus* (Molina, 1782)
Species	*Speothos venaticus* (Lund, 1842)
Species	*Urocyon cinereoargenteus* (Schreber, 1775)

Species	*Puma concolor* (Linnaeus, 1771)
Species	*Herpailurus yagouaroundi* (É. Geoffroy Saint-Hilaire, 1803)
Species	*Leopardus pardalis* (Linnaeus, 1758)
Species	*Leopardus tigrinus* (Schreber, 1775)
Species	*Leopardus wiedii* (Schinz, 1821)
Species	*Panthera onca* (Linnaeus, 1758)
Species	*Conepatus semistriatus* (Boddaert, 1785)
Species	*Eira barbara* (Linnaeus, 1758)
Species	*Galictis vittata* (Schreber, 1776)
Species	*Lontra longicaudis* (Olfers, 1818)
Species	*Neogale frenata* (Lichtenstein, 1831)
Species	*Pteronura brasiliensis* (Gmelin, 1788)
Species	*Nasua nasua* (Linnaeus, 1766)
Species	*Nasuella olivacea* (Gray, 1865)
Species	*Potos flavus* (Schreber, 1774)
Species	*Procyon cancrivorus* (G. Cuvier, 1798)
Species	*Tremarctos ornatus* (F.G. Cuvier, 1825)
Species	*Balaenoptera edeni* Anderson, 1879
Species	*Balaenoptera musculus* (Linnaeus, 1758)
Species	*Balaenoptera physalus* (Linnaeus, 1758)
Species	*Anoura cadenai* Mantilla-Meluk & Baker, 2006
Species	*Anoura latidens* Handley, 1984
Species	*Desmodus rotundus* (É. Geoffroy Saint Hilaire, 1810)
Species	*Leptonycteris curasoae* Miller, 1900
Species	*Lonchorhina mankomara* Mantilla-Meluk & Montenegro, 2016
Species	*Lonchorhina marinkellei* Hernández-Camacho & Cadena, 1978
Species	*Lonchorhina orinocensis* Linares & Ojasti, 1971
Species	*Vampyressa melissa* Thomas, 1926

Species	*Rhogeessa minutilla* Miller, 1897
Species	*Cabassous centralis* (Miller, 1899)
Species	*Cabassous unicinctus* (Linnaeus, 1758)
Species	*Priodontes maximus* (Kerr, 1792)
Species	*Dasypus novemcinctus* Linnaeus, 1758
Species	*Dasypus pastasae* (Thomas, 1901)
Species	*Caluromys lanatus* (Olfers, 1818)
Species	*Didelphis marsupialis* Linnaeus, 1758
Species	*Didelphis pernigra* J.A. Allen, 1900
Species	*Marmosa robinsoni* Bangs, 1898
Species	*Marmosa xerophila* Handley & Gordon, 1979
Species	*Marmosops caucae* (Thomas, 1900)
Species	*Marmosops chucha* Díaz-Nieto & Voss, 2016
Species	*Marmosops magdalenae* Díaz-Nieto & Voss, 2016
Species	*Metachirus myosuros* (Temminck, 1824)
Species	*Philander andersoni* (Osgood, 1913)
Species	*Philander melanurus* Thomas, 1899
Species	*Cryptotis colombianus* Woodman & Timm, 1993
Species	*Cryptotis medellinius* Thomas, 1921
Species	*Cryptotis squamipes* (J.A. Allen, 1912)
Species	*Cryptotis thomasi* (Merriam, 1897)
Species	*Sylvilagus apollinaris* Thomas, 1920
Species	*Sylvilagus floridanus* (J.A. Allen, 1890)
Species	*Sylvilagus salentus* J.A. Allen, 1913
Species	*Tapirus bairdii* (Gill, 1865)
Species	*Tapirus pinchaque* (Roulin, 1829)
Species	*Tapirus terrestris* (Linnaeus, 1758)
Species	*Bradypus variegatus* Schinz, 1825

Species	*Choloepus didactylus* (Linnaeus, 1758)
Species	*Choloepus hoffmanni* Peters, 1858
Species	*Cyclopes dorsalis* (Gray, 1865)
Species	*Myrmecophaga tridactyla* Linnaeus, 1758
Species	*Tamandua mexicana* (Saussure, 1860)
Species	*Tamandua tetradactyla* (Linnaeus, 1758)
Species	*Alouatta seniculus* Linnaeus, 1766
Species	*Ateles belzebuth* É. Geoffroy Saint Hilaire, 1806
Species	*Ateles fusciceps* Gray, 1866
Species	*Lagothrix lagothricha* Humboldt, 1812
Species	*Cebuella pygmaea* (Spix, 1823)
Species	*Saguinus leucopus* (Günther, 1877)
Species	*Saguinus oedipus* (Linnaeus, 1758)
Species	*Aotus brumbacki* Hershkovitz, 1983
Species	*Aotus griseimembra* Elliot, 1912
Species	*Aotus lemurinus* (I. Geoffroy, 1843)
Species	*Cebus albifrons* (Humboldt, 1812)
Species	*Cebus capucinus* (Linnaeus, 1758)
Species	*Cebus versicolor* Pucheran, 1845
Species	*Saimiri cassiquiarensis* Lesson, 1840
Species	*Sapajus apella* (Linnaeus, 1758)
Species	*Pithecia milleri* J.A. Allen, 1914
Species	*Plecturocebus ornatus* (Gray, 1866)
Species	*Cavia aperea* Erxleben, 1777
Species	*Hydrochoerus hydrochaeris* (Linnaeus, 1766)
Species	*Hydrochoerus isthmius* Goldman, 1912
Species	*Akodon affinis* (J.A. Allen, 1912)
Species	*Handleyomys intectus* (Thomas, 1921)

Species	*Nectomys grandis* Thomas, 1897
Species	*Nephelomys childi* (Thomas, 1895)
Species	*Nephelomys pectoralis* (J.A. Allen, 1912)
Species	*Neusticomys mussoi* Ochoa & Soriano, 1991
Species	*Rhipidomys caucensis* J.A. Allen, 1913
Species	*Rhipidomys fulviventer* Thomas, 1896
Species	*Thomasomys bombycinus* Anthony, 1925
Species	*Thomasomys cinereiventer* J.A. Allen, 1912
Species	*Thomasomys dispar* Anthony 1925
Species	*Thomasomys laniger* (Thomas, 1895)
Species	*Thomasomys nicefori* Thomas, 1921
Species	*Thomasomys niveipes* (Thomas, 1896)
Species	*Thomasomys popayanus* J. A. Allen, 1912
Species	*Thomasomys princeps* (Thomas, 1895)
Species	*Zygodontomys brunneus* Thomas, 1898
Species	*Cuniculus paca* (Linnaeus, 1766)
Species	*Cuniculus taczanowskii* (Stolzmann, 1865)
Species	*Dasyprocta fuliginosa* Wagler, 1832
Species	*Dasyprocta punctata* Gray, 1842
Species	*Myoprocta pratti* Pocock, 1913
Species	*Dinomys branickii* Peters, 1873
Species	*Olallamys albicaudus (*Günther, 1879)
Species	*Pattonomys semivillosus* (I. Geoffroy, 1838)
Species	*Proechimys chrysaeolus* (Thomas, 1898)
Species	*Proechimys oconnelli* J.A. Allen, 1913
Species	*Proechimys semispinosus* (Tomes, 1860)
Species	*Coendou longicaudatus* Daudin, 1802
Species	*Coendou vestitus* Thomas, 1899

Species	*Hadrosciurus igniventris (*Wagner, 1842*)*
Species	*Leptosciurus santanderensis* (Hernández-Camacho, 1957)
Species	*Microsciurus flaviventer* (Gray, 1867)
Species	*Syntheosciurus granatensis* (Humboldt, 1811)

Temporal coverage

Data range:

1903 – 2019

Collection Data

Collection name:

Colección Zoológica Universidad de Nariño (PSO-Z); Instituto de Ciencias Naturales (ICN (MHN)), Universidad Nacional de Colombia; Instituto de Investigación de Recursos Biológicos Alexander von Humboldt (IAvH (M)); Instituto Tecnológico Metropolitano (ITM (CSJ-m)); Museo de La Salle - Bogotá (MLS); Universidad de Caldas (MHN-UCa-M); Universidad de Los Andes (UniAndes (ANDES-M)), Universidad Distrital Francisco José de Caldas (UDFJC (MUD)).

Specimen preservation method:

Dried or fluid (ethanol).

Usage license

Usage license:

Creative Commons Public Domain Waiver (CC-Zero)

IP rights notes:

Data resources

Data package title: Mammals under pressure: presence data for assessing extinction of endemic, threatened and mammals subject to use in Colombia

Resource link:

https://datadryad.org/stash/share/Fv-1TVPH0UWTKpmvXj2c1FY6FUz5aYxXFttwEqaM0Xo

Number of data sets: 1

Data set name:

Mammals under pressure: presence data for assessing extinction of endemic, threatened and mammals subject to use in Colombia

Download URL:

https://datadryad.org/stash/share/Fv-1TVPH0UWTKpmvXj2c1FY6FUz5aYxXFttwEqaM0Xo

Data format: Tab separated text file.

Data format version: Darwin Core

Description:

This dataset contains 122,336 records and provides the most complete recompilation of records collected from 51 institutions based on photo-trapping, collections and human observation data by 129 mammal species that are threatened, endemic or subject to use in Colombia between 1903 and 2019. The information increases the knowledge about these species, and it also provides comments or notes about the occurrences that support the records and strengthen the information so that it can be used in other processes such as the national risk assessment of the prioritized species.

Column Label	Column Description
ID	Identify ID to the occurrence assigned by the author
language	Language of the dataset.
type	The nature or genre of the resource.
institutionCode	Acronym of the institution having custody of the data or information referred to in the record.
collectionCode	The name, acronym, coden, or initialism identifying the collection or data set from which the record was derived.
catalogNumber	An identifier (preferably unique) for the record within the data set or collection.
basisOfRecord	The specific nature of the data record.
occurrenceID	Global unique identifier for the occurrence.
recordNumber	An identifier given to the Occurrence at the time it was recorded. Often serves as a link between field notes and an Occurrence record, such as a specimen collector's number.
recordedBy	A list (concatenated and separated) of names of people, groups, or organizations responsible for recording the original Occurrence. The primary collector or observer, especially one who applies a personal identifier (recordNumber), should be listed first.

individualCount	The number of individuals present at the time of the Occurrence.
organismQuantityType	The type of quantification system used for the quantity of organisms.
sex	The sex of the biological individual(s) represented in the Occurrence.
preparations	A list (concatenated and separated) of preparations and preservation methods for a specimen.
occurrenceStatus	A statement about the presence or absence of a Taxon at a Location.
occurrenceRemarks	Comments or notes about the occurrence.
eventID	An identifier for the set of information associated with an Event (something that occurs at a place and time). May be a global unique identifier or an identifier specific to the data set.
day	The integer day of the month on which the occurrence was recorded.
month	The integer month in which the occurrence was recorded.
year	The four-digit year in which the occurrence was recorded, according to the Common Era Calendar.
eventDate	Date when the occurrence was recorded. Date conforms to ISO 8601-1:2019.
eventTime	The time or interval during which an occurrence was recorded.
samplingProtocol	The methods or protocols used during sampling.
samplingEffort	The amount of effort expended during a sampling event.
habitat	A category or description of the habitat in which the Event occurred.
continent	The name of the continent in which the Location occurs.
countryCode	The standard code for the country in which the Location occurs. The code conforms to ISO 3166-1-alpha-2 country codes.
country	The name of the country or major administrative unit in which the Location occurs.
stateProvince	The name of the next smaller administrative region than country (state, province, canton, department, region, etc.) in which the Location occurs.
county	The full, unabbreviated name of the next smaller administrative region than stateProvince (county, shire, department, etc.) in which the Location occurs.
municipality	The full, unabbreviated name of the next smaller administrative region than county (city, municipality, etc.) in which the Location occurs. Do not use this term for a nearby named place that does not contain the actual location.
locality	The specific description of the place.

minimumElevationInMeters	The lower limit of the range of elevation (altitude, usually above sea level), in meters.
maximumElevationInMeters	Maximum Elevation In Meters
decimalLatitude	The geographic latitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic centre of a Location.
decimalLongitude	The geographic longitude (in decimal degrees, using the spatial reference system given in geodeticDatum) of the geographic centre of a Location.
geodeticDatum	The ellipsoid, geodetic datum, or spatial reference system (SRS) upon which the geographic coordinates given in decimalLatitude and decimalLongitude are based.
verbatimLongitude	The verbatim original longitude of the Location. The coordinate ellipsoid, geodeticDatum, or full Spatial Reference System (SRS) for these coordinates should be stored in verbatimSRS and the coordinate system should be stored in verbatimCoordinateSystem.
verbatimLatitude	The verbatim original latitude of the Location. The coordinate ellipsoid, geodeticDatum, or full Spatial Reference System (SRS) for these coordinates should be stored in verbatimSRS and the coordinate system should be stored in verbatimCoordinateSystem.
verbatimCoordinateSystem	The coordinate format for the verbatimLatitude and verbatimLongitude or the verbatimCoordinates of the Location.
verbatimElevation	The original description of the elevation (altitude, usually above sea level) of the Location.
verbatimSRS	The ellipsoid, geodetic datum, or spatial reference system (SRS) upon which coordinates given in verbatimLatitude and verbatimLongitude, or verbatimCoordinates are based.
verbatimCoordinates	The verbatim original spatial coordinates of the Location. The coordinate ellipsoid, geodeticDatum, or full Spatial Reference System (SRS) for these coordinates should be stored in verbatimSRS and the coordinate system should be stored in verbatimCoordinateSystem.
identifiedBy	A list (concatenated and separated) of names of people, groups, or organizations who assigned the Taxon to the subject.
dateIdentified	The date on which the subject was determined as representing the Taxon.
verbatimIdentification	A string representing the taxonomic identification as it appeared in the original record.
scientificName	The full scientific name, with authorship and date information, if known.
kingdom	The full scientific name of the kingdom in which the taxon is classified.

phylum	The full scientific name of the phylum or division in which the taxon is classified.
class	The full scientific name of the class in which the taxon is classified.
order	The full scientific name of the order in which the taxon is classified.
family	The full scientific name of the family in which the taxon is classified.
genus	The full scientific name of the genus in which the taxon is classified.
specificEpithet	The name of the first or species epithet of the scientificName.
taxonRank	The taxonomic rank of the most specific name in the scientificName.
scientificNameAuthorship	The authorship information for the scientificName formatted according to the conventions of the applicable nomenclaturalCode.
vernacularName	A common or vernacular name.
taxonomicStatus	The status of the use of the scientificName as a label for a taxon. Requires taxonomic opinion to define the scope of a taxon. Rules of priority then are used to define the taxonomic status of the nomenclature contained in that scope, combined with the experts opinion. It must be linked to a specific taxonomic reference that defines the concept.
identificationVerificationStatus	A categorical indicator of the extent to which the taxonomic identification has been verified to be correct.
taxonRemarks	Comments or notes about the taxon or name.

Acknowledgements

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Additional Information

Order and family to the species included in the dataset. Also contains theirs categories according the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Cites); the threatened extinction risk adopted by the the International Union for Conservation of the Nature (UICN) an the resolution 1912 of 2017 at the Ministry of Environment and Sustainable Development (MADS) and species that are endemic to our country (Endemic). Finally include the number of records per specie which basis of record were: Human Observation (HO), Machine Observation (MO) and Preserved Specimen (PS)

Order	Family	Scientific Name	Cites	IUCN	MADS	Endemic	Basis of Record		
							HO	MO	PS
Artiodactyla	Cervidae	*Mazama rufina* (Pucheran, 1851)	-	VU	-	-	-	704	10
		Mazama sanctaemartae J. A. Allen, 1915	-	-	-	-	-	375	-
		Mazama temama (Kerr, 1792)	III, NC	DD	-	-	-	334	-
		Odocoileus cariacou (Boddaert, 1784)	-	-	-	-	-	21	4
		Odocoileus goudotii (Gay & Gervais, 1846)	-	-	-	-	-	823	1
		Pudu mephistophiles (de Winton, 1896)	II	VU	-	-	-	1	-
	Tayassuidae	*Dicotyles tajacu* (Linnaeus, 1758)	II	LC	-	-	6	5.271	8
		Tayassu pecari (Link, 1795)	II	VU	-	-	11	4.895	5
Carnivora	Canidae	*Atelocynus microtis* (Sclater, 1883)	-	NT	-	-	-	38	-
		Cerdocyon thous (Linnaeus, 1766)	II	LC	-	-	-	2.309	16
		Lycalopex culpaeus (Molina, 1782)	II	LC	VU	-	-	1	-
		Speothos venaticus (Lund, 1842)	I	NT	-	-	-	10	-
		Urocyon cinereoargenteus (Schreber, 1775)	-	LC	-	-	-	1	1

Felidae	*Puma concolor* (Linnaeus, 1771)	I, II	LC	-	-	-	530	3
	Herpailurus yagouaroundi (É. Geoffroy Saint-Hilaire, 1803*)*	I, II	LC	-	-	-	321	-
	Leopardus pardalis (Linnaeus, 1758)	I	LC	-	-	-	2.388	10
	Leopardus tigrinus (Schreber, 1775)	I	VU	VU	-	-	190	4
	Leopardus wiedii (Schinz, 1821)	I	NT	-	-	-	119	3
	Panthera onca (Linnaeus, 1758)	I	NT	VU	-	-	96	2
Mephitidae	*Conepatus semistriatus* (Boddaert, 1785)	-	LC	-	-	-	59	-
Mustelidae	*Eira barbara* (Linnaeus, 1758)	III	LC	-	-	-	1.645	7
	Galictis vittata (Schreber, 1776)	III	LC	-	-	-	82	-
	Lontra longicaudis (Olfers, 1818)	I	NT	VU	-	-	30	3
	Neogale frenata Lichtenstein, 1831	-	LC	-	-	-	35	15
	Pteronura brasiliensis (Gmelin, 1788)	I	EN	EN	-	-	11	-
Procyonidae	*Nasua nasua* (Linnaeus, 1766)	III, NC	LC	-	-	5	1.020	15
	Nasuella olivacea (Gray, 1865)	-	NT	-	-	-	218	-
	Potos flavus (Schreber, 1774)	III	LC	-	-	-	24	21
	Procyon cancrivorus (G. Cuvier, 1798)	-	LC	-	-	-	1.374	7
Ursidae	*Tremarctos ornatus* (F.G. Cuvier, 1825)	I	VU	VU	-	-	4.308	19

Cetacea	Balaenopteridae	*Balaenoptera edeni* Anderson, 1879	I	DD	-	-	-	-	1
		Balaenoptera musculus (Linnaeus, 1758)	I	EN	EN	-	-	-	1
		Balaenoptera physalus (Linnaeus, 1758)	I	VU	EN	-	-	-	2
Chiroptera	Phyllostomidae	*Anoura cadenai* Mantilla-Meluk & Baker, 2006	-	-	-	x	-	-	18
		Anoura latidens Handley, 1984	-	LC	-	-	-	-	1
		Desmodus rotundus (É. Geoffroy Saint Hilaire, 1810)	-	LC	-	-	-	49	134
		Leptonycteris curasoae Miller, 1900	-	VU	-	-	-	-	8
		Lonchorhina mankomara Mantilla-Meluk & Montenegro, 2016	-	-	-	x	-	-	3
		Lonchorhina marinkellei Hernández-Camacho & Cadena, 1978	-	VU	-	x	-	-	1
		Lonchorhina orinocensis Linares & Ojasti, 1971	-	VU	-	-	-	-	10
		Vampyressa melissa Thomas, 1926	-	VU	-	-	-	-	7
	Vespertilionidae	*Rhogeessa minutilla* Miller, 1897	-	VU	-	-	-	-	2
Cingulata	Chlamyphoridae	*Cabassous centralis* (Miller, 1899)	III	DD	-	-	-	165	-
		Cabassous unicinctus (Linnaeus, 1758)	-	LC	-	-	-	166	1
		Priodontes maximus	I	VU	EN	-	2	236	3

		(Kerr, 1792)							
	Dasypodidae	*Dasypus novemcinctus* Linnaeus, 1758	-	LC	-	-	3	7.652	21
		Dasypus pastasae (Thomas, 1901)	-	LC	-	-	-	159	-
Didelphimorphia	Didelphidae	*Caluromys lanatus* (Olfers, 1818)	-	LC	-	-	-	18	-
		Didelphis marsupialis Linnaeus, 1758	-	LC	-	-	-	7.896	34
		Didelphis pernigra J.A. Allen, 1900	-	LC	-	-	-	540	14
		Marmosa robinsoni Bangs, 1898	-	LC	-	-	-	16	-
		Marmosa xerophila Handley & Gordon, 1979	-	VU	-	-	-	-	1
		Marmosops caucae (Thomas, 1900)	-	-	-	-	-	-	17
		Marmosops chucha Díaz-Nieto & Voss, 2016	-	-	-	x	-	-	6
		Marmosops magdalenae Díaz-Nieto & Voss, 2016	-	-	-	x	-	-	1
		Metachirus myosuros (Temminck, 1824)	-	LC	-	-	-	705	-
		Philander andersoni (Osgood, 1913)	-	LC	-	-	-	24	-
		Philander melanurus Thomas, 1899	-	-	-	-	-	2.686	-
Eulipotyphla	Soricidae	*Cryptotis colombianus* Woodman & Timm, 1993	-	-	-	x	-	-	35
		Cryptotis medellinius Thomas, 1921	-	-	-	x	-	-	5

		Cryptotis squamipes (J.A. Allen, 1912)	-	LC	-	X	-	-	2
		Cryptotis thomasi (Merriam, 1897)	-	LC	-	x	-	-	39
Lagomorpha	Leporidae	*Sylvilagus apollinaris* Thomas, 1920	-	-	-	x	-	182	-
		Sylvilagus floridanus (J.A. Allen, 1890)	-	LC	-	-	-	910	-
		Sylvilagus salentus J.A. Allen, 1913	-	-	-	x	-	-	25
Perissodactyla	Tapiridae	*Tapirus bairdii* (Gill, 1865)	I	EN	-	-	-	1	-
		Tapirus pinchaque (Roulin, 1829)	I	EN	EN	-	-	53	1
		Tapirus terrestris (Linnaeus, 1758)	II	VU	CR	-	3	2.911	2
Pilosa	Bradypodidae	*Bradypus variegatus* Schinz, 1825	II	LC	-	-	-	6	7
	Choloepidae	*Choloepus didactylus* (Linnaeus, 1758)	-	LC	-	-	-	21	7
		Choloepus hoffmanni Peters, 1858	-	LC	-	-	-	-	20
	Cyclopedidae	*Cyclopes dorsalis* (Gray, 1865)	-	-	-	-	-	-	1
	Myrmecophagidae	*Myrmecophaga tridactyla* Linnaeus, 1758	II	VU	VU	-	3	2.371	4
		Tamandua mexicana (Saussure, 1860)	III	LC	-	-	-	1.534	-
		Tamandua tetradactyla (Linnaeus, 1758)	-	LC	-	-	-	1.755	4
Primates	Atelidae	*Alouatta seniculus* Linnaeus, 1766	II	LC	-	-	-	11	-
		Ateles belzebuth É. Geoffroy Saint Hilaire, 1806	II	EN	VU	-	-	1	8

		Ateles fusciceps Gray, 1866	-	-	EN	-	-	-	3
		Lagothrix lagothricha Humboldt, 1812	II	VU	VU	-	-	-	2
	Callitrichidae	*Cebuella pygmaea* (Spix, 1823)	-	LC	-	-	-	-	2
		Saguinus leucopus (Günther, 1877)	I	EN	VU	x	-	-	9
		Saguinus oedipus (Linnaeus, 1758)	I	CR	CR	x	-	-	2
	Cebidae	*Aotus brumbacki* Hershkovitz, 1983	-	VU	VU	x	-	-	2
		Aotus griseimembra Elliot, 1912	-	VU	VU	x	-	7	-
		Aotus lemurinus (I. Geoffroy, 1843)	-	VU	VU	-	-	-	6
		Cebus albifrons (Humboldt, 1812)	II	LC	-	-	-	48	-
		Cebus capucinus (Linnaeus, 1758)	II	-	-	-	-	22	1
		Cebus versicolor Pucheran, 1845	-	EN	-	-	-	1.185	1
		Saimiri cassiquiarensis Lesson, 1840	-	-	-	-	-	594	-
		Sapajus apella (Linnaeus, 1758)	-	LC	-	-	-	227	-
	Pitheciidae	*Pithecia milleri* J.A. Allen, 1914	II	DD	VU	-	-	-	2
		Plecturocebus ornatus (Gray, 1866)	II	VU	VU	x	-	24	3
Rodentia	Caviidae	*Cavia aperea* Erxleben, 1777	-	LC	-	-	-	1.368	4
		Hydrochoerus hydrochaeris (Linnaeus, 1766)	-	LC	-	-	-	4.234	7
		Hydrochoerus	-	DD	-	-	-	6	-

	isthmius Goldman, 1912							
Cricetidae	*Akodon affinis* (J.A. Allen, 1912)	-	LC	-	x	-	-	19
	Handleyomys intectus (Thomas, 1921)	-	LC	-	x	-	-	3
	Nectomys grandis Thomas, 1897	-	DD	-	x	-	-	6
	Nephelomys childi (Thomas, 1895)	-	-	-	x	-	-	54
	Nephelomys pectoralis (J.A. Allen, 1912)	-	-	-	x	-	-	5
	Neusticomys mussoi Ochoa & Soriano, 1991	-	EN	-	-	-	-	1
	Rhipidomys caucensis J.A. Allen, 1913	-	LC	-	x	-	-	19
	Rhipidomys fulviventer Thomas, 1896	-	LC	-	x	-	-	9
	Thomasomys bombycinus Anthony, 1925	-	DD	-	x	-	-	26
	Thomasomys cinereiventer J.A. Allen, 1912	-	LC	-	x	-	-	124
	Thomasomys dispar Anthony 1925	-	-	-	x	-	-	40
	Thomasomys laniger (Thomas, 1895)	-	LC	-	x	-	-	93
	Thomasomys nicefori Thomas, 1921	-	-	-	x	-	-	27
	Thomasomys niveipes (Thomas, 1896)	-	LC	-	x	-	-	179
	Thomasomys popayanus J. A.	-	DD	-	x	-	-	19

	Allen, 1912							
	Thomasomys princeps (Thomas, 1895)	-	-	-	x	-	-	4
	Zygodontomys brunneus Thomas, 1898	-	LC	-	x	-	-	3
Cuniculidae	*Cuniculus paca* (Linnaeus, 1766)	III	LC	-	-	23	15.014	11
	Cuniculus taczanowskii (Stolzmann, 1865)	-	NT	-	-	-	1.194	83
Dasyproctidae	*Dasyprocta fuliginosa* Wagler, 1832	-	LC	-	-	33	4.851	12
	Dasyprocta punctata Gray, 1842	III	LC	-	-	-	24.095	-
	Myoprocta pratti Pocock, 1913	-	LC	-	-	-	84	-
Dinomyidae	*Dinomys branickii* Peters, 1873	-	VU	VU	-	-	23	16
Echimyidae	*Olallamys albicaudus* (Günther, 1879)	-	DD	-	x	-	86	3
	Pattonomys semivillosus (I. Geoffroy, 1838)	-	LC	-	x	-	1	-
	Proechimys chrysaeolus (Thomas, 1898)	-	DD	-	x	-	2.727	5
	Proechimys oconnelli J.A. Allen, 1913	-	DD	-	x	-	81	5
	Proechimys semispinosus (Tomes, 1860)	-	LC	-	-	-	2.502	1
Erethizontidae	*Coendou longicaudatus* Daudin, 1802	-	LC	-	-	-	38	-

		Coendou vestitus Thomas, 1899	-	DD	-	x	-	1	-
	Sciuridae	*Hadrosciurus igniventris* (Wagner, 1842)	-	-	-	-	-	1.991	-
		Leptosciurus santanderensis (Hernández-Camacho, 1957)	-	DD	-	x	-	4	-
		Microsciurus flaviventer (Gray, 1867)	-	DD	-	-	-	12	-
		Syntheosciurus granatensis (Humboldt, 1811)	-	-	-	-	-	3.115	-
12 orders	32 families	129 species				Total:	89	120.835	1.412