List of Mammals which have become Extinct or are Possibly Extinct since 1600

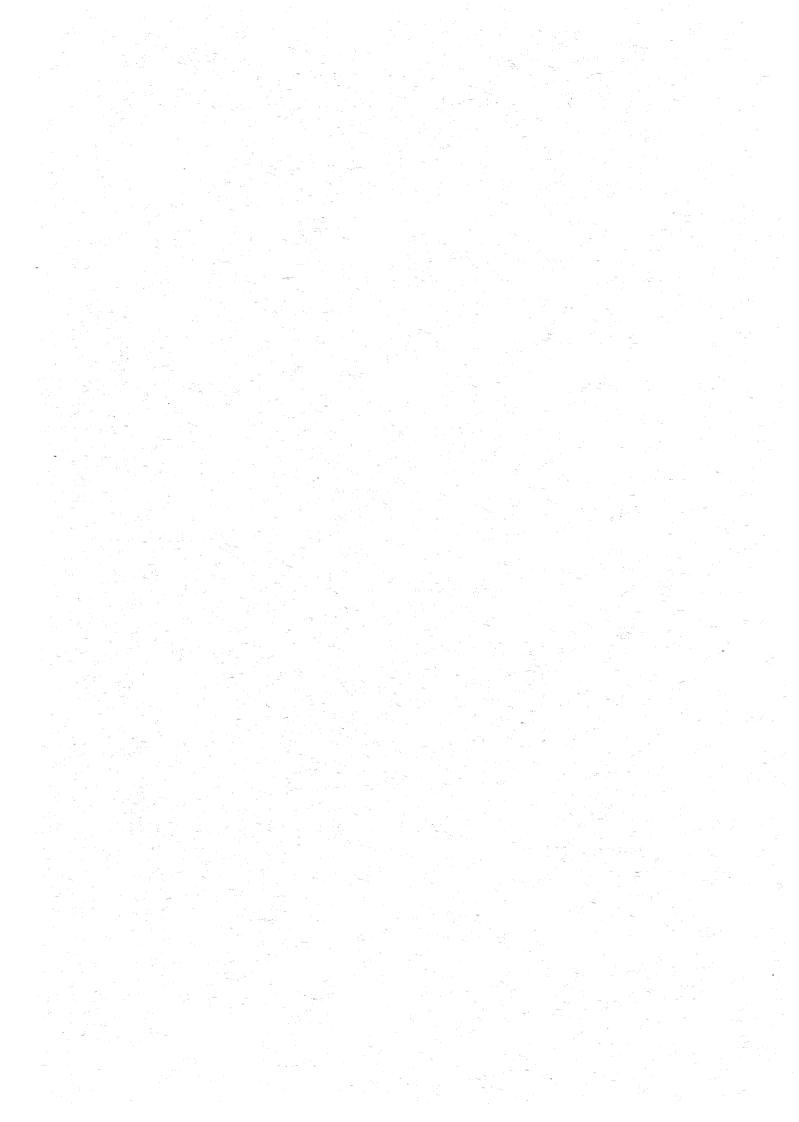
compiled by

H. A. Goodwin and J. M. Goodwin



IUCN OCCASIONAL PAPER NO. 8

INTERNATIONAL UNION FOR CONSERVATION OF NATURE AND NATURAL RESOURCES MORGES, SWITZERLAND, 1973



LIST OF MAMMALS WHICH HAVE BECOME EXTINCT OR ARE POSSIBLY EXTINCT SINCE 1600

Compiled by H.A. Goodwin and J.M. Goodwin

Prepared for the Survival Service Commission of IUCN as an extension and up-dating of the list drawn up by the late James Fisher in 1968

IUCN Occasional Paper No. 8

International Union for Conservation of Nature and Natural Resources Morges, Switzerland, 1973

PREFACE

This listing is an effort to go beyond a necrology of the mammals which have disappeared since 1600. It attempts to cover also some of the uncertain ones, to call their plight to the attention of the world, to encourage their rediscovery and their preservation. In compiling the material, the authors have aimed to extend and bring up to date a listing of extinct mammals commenced by James Fisher for IUCN in 1968.

The date of disappearance given is that of the last known record, either from a collection date, a recorded death of a wild animal or of one held in captivity, or an accepted sighting of an animal in the wild. The prefix "c." indicates an approximate date; "a." is to designate after the mid-century, and "b." to designate before the mid-century.

The compilation is not intended as an authoritative revision of the systematics of species and subspecies included, although there are a few differences in arrangement and detail from those used in the Mammalia volume of IUCN's Red Data Book. The scientific or common names used are only for the proper identification of the animal according to some standard reference, the data having been gleaned from many sources, including the files of IUCN. No original work is claimed by the authors except the research required to trace and check all the available information, and the debt owed to the many authors whose works have been consulted is gratefully acknowledged. It is hoped that others will in turn perfect and complete the record.

H. A. Goodwin

J. M. Goodwin

List of Mammals Which Have Become Extinct or are Possibly Extinct since 1600

MARSUPIALIA

MACROPODIDAE

Macropus greyi Waterhouse Toolache Wallaby 192	4
A large wallaby of southeastern South Australia and Victoria.	
Macropus bernardus Rothschild Bernard's Wallaroo 192	2
Known from the interior of Arnhem Land, Northern Territory of	
Australia.	
Onychogalea fraenata Gould Bridle Nail-tailed Wallaby 193	7
Once common in New South Wales, south-central, south western	
Australia and Victoria.	
<u>Lagorchestes leporides</u> Gould Brown Hare-Wallaby 1890	С
Once found in the interior of New South Wales, Victoria and	
the Murray River region of South Australia.	
<u>Lagorchestes asomatus</u> Finlayson Centralian Hare-Wallaby 194	3
This hare-wallaby is known only from a skull collected in Western Australia.	
<u>Caloprymnus</u> <u>campestris</u> Gould Desert Rat-Kangaroo 193	1
After a lapse of 88 years, this species was rediscovered in	
1931 in north-eastern South Australia but there have been no	
reliable records since.	
Bettongia gaimardi Desmarest Gaimard's Rat-kangaroo 191	1
The typical form that occurred between the Dividing Range and	
the coast from south-eastern Queensland to western Victoria	
is extinct. A sub-species B.g. cuniculus Ogilby is extant	
in Tasmania.	

Bettongia tropica Wakefield Northern Rat-kangaroo 1932 Only six specimens are known of this species; the first was collected in 1884, the last nearly a half-century later.

Potorous platyops Gould Broad-faced Rat-kangaroo 1875
The last known specimens of this rat-kangaroo were collected by the National Museum of Victoria.

VOMBATIDAE

Lasiorhinus gillespiei De Vis Monnie River Wombat 1900 Collected from a single restricted locality near St. George in southern Queensland.

PERAMELIDAE

Peramales eremiana Spencer. Desert or Orange-backed Bandicoot 1935 Once abundant in the southern part of Northern Territory, Australia, none have been recorded for forty years.

Chaeropus ecaudatus Ogilby Pig-footed Bandicoot 1907
A former inhabitant of New South Wales, Northern Territory,
northern South Australia.

Macrotus leucura Thomas Yallara or Rabbit Bandicoot 1931
This small rabbit-eared bandicoot was once found in South
Australia.

DASYURIDAE

Planigale subtilissima Lonnberg Kimberley Planigale 1949
First described from a single specimen collected in Western
Australia, the last record is of six specimens taken at the
Kimberley Research Station.

Sminthopsis longicaudata Spencer Long-tailed Dunnart 1940
Last recorded at Marble Bar, the long-tailed dunnart of
Western Australia is poorly represented in museum collections.

Sminthopsis psammophila Spencer Sandhill Dunnart 1894
The largest of the Sminthopsis, only a single specimen
recorded from near Lake Amadeus in Central Australia.

THYLACINIDAE

Thylacinus cynocephalus Harris Thylacine -1933
Once common in the central plateau of Tasmania, the last
certain records are of a wild one killed in 1930 and a
captive animal which died three years later in Hobart Zoo.

INSECTIVORA

TENRECIDAE

Dasogale fontoynonti Grandidier Fontoynont's Tenrec 1928
This member of the Tenrecidae is known to scientists from one specimen collected in the forests of eastern Madagascar.

NESOPHONTIDAE

The members of this family were common in the West Indian
Antilles until relatively recent times. All have been
described from skeletal remains found in cave deposits and
the following species may have become extinct since European
occupation.

Nesophontes edithae Anthony
Nesophontes micrus G.M. Allen
Nesophontes longirostris Anthony
Nesophontes paramicrus Miller
Nesophontes hypomicrus Miller
Nesophontes zamicrus Miller

Puerto Rican Nesophontes a.18 Cent.
Western Cuban Nesophontes a.18 Cent.
Eastern Cuban Nesophontes a.18 Cent.
St. Michel Nesophontes a.19 Cent.
Atalaye Nesophontes a.19 Cent.
Haitian Nesophontes a.18 Cent.

SORICIDAE

Crocidura fuliginosa Blyth. The common shrew of southern Asia and Borneo was represented on Christmas Island by:

C.f. trichura Dobson Christmas Island Shrew c.1908
Last collected soon after the turn of the century.

Praesorex goliath Thomas African Forest Shrew 1910
The largest of the true shrews. It is represented in museums by only three specimens which were collected in Cameroon early in the present century.

TALPIDAE

Scaptonyx fusicaudus Milne-Edwards Long-tailed Mole a.19 Cent. This mole of northern Burma and the adjacent provinces of China is represented by less than a dozen specimens in museums.

Scapanulus oweni Thomas Kansu Mole c.1930 Recorded from Kansu, Szechwan and Yunnan in China, it is represented by less than a dozen specimens in museums.

CHIROPTERA

PHYLLOSTOMATIDAE

Monophyllus frater Anthony Leaf-nosed Bat a.18 Cent. Known only from skeletal material found in the Cathedral Cave near Morovis, Puerto Rico.

NATALIDAE

Natalus major Miller. Of three races of large funnel-eared bats:

 $\underline{\text{N.m.}}$ primus Anthony Cuban Funnel-eared Bat a.18 Cent. Known only from skeletal material found in Eastern Cuba.

VESPERTILIONIDAE

Lasiurus brachyotis J.A. Allen Galapagos Red or Hairy- 1892 tailed Bat

Known from a single specimen taken at an elevation of 500 meters on Chatham Island.

LAGOMORPHA

OCHOTONIDAE

Prolagus sardus Wagner Sardinian Pika a.18 Cent.

Known from remains found in Corsica and Sardinia. They
were last noted on Tavolara off Sardinia where F. Cetti
in 1774 recorded seeing "giant rats whose burrows are so
abundant that one might think the surface of the soil had
been recently turned over by pigs".

RODENTIA

CRICETIDAE

V 1 C 4 1 0 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4 1 4			
Oryzomys antillarum Thomas	Jamaican Ric	e Rat	1877
Last collected in 1877, no record since	e then.		and the second second
Oryzomys victus Thomas	St. Vincent Ric	e Rat	1897
Known from a single specimen.			
Oryzomys desmaresti J.B. Fischer	Martinique Ric	e Rat	1902
Probably wiped out by the eruption of			
Oryzomys audreyae Hopwood	Barbuda Ric	e Rat	a.18 Cent.
Known only from skeletal material from	n Barbuda, Less	er	* * * * * * *
Antilles.			
Oryzomys luciae Forsyth Major	St. Lucia Ric	e Rat	c.1900
Last collected some time before the be	eginning of the		
present century.			an annual of the Wales and the State of the
Oryzomys swarthi Orr Ja	ames Island Ric	e Rat	1906
This Galapagos Islands rice rat has no			
since early in the present century.	i _{ke} ar i de	•	·

Oryzomys galapagoensis Waterhouse. Chatham Island Rice Rat 1835 Has not been seen since collected on Chatham Island of the Galapagos group by Charles Darwin. Oryzomys indefessus Thomas Indefatigable Rice Rat c.1945 From Indefatigable and South Seymour of the Galapagos Islands. Microtus nesophilus V. Bailey Gull Island Vole c.1900 From Gull Island, off the eastern extremity of Long Island, New York, USA, now considered a race of $\underline{\mathsf{M}}$. pennsylvanicus. Microtus californicus Peale. Of sixteen races: M.c. scirpensis V. Bailey Amargosa Meadow Vole 1917 Known only from Shoshone in eastern Inyo County, California, USA. MURIDAE Leporillus apicalis Gould White-tipped Stick-nest Rat 1933 Formerly known from inland parts of northwestern Victoria, western New South Wales, and South Australia. White-footed Tree or Conilurus albipes Lichtenstein Rabbit Rat a.19 Cent. Once found from southern Queensland to Victoria in Australia, it has not been recorded in this century. Notomys megalotis Thomas Big-eared Hopping Mouse 1843 Collected at the Moore River, in the vicinity of New Norcia, Western Australia. 20 g 200 21. . 12. Notomys longicaudatus Gould Long-tailed Hopping Mouse 1901 Once found in Western Australia, central Australia and South Australia, it appears to have become extinct during the present century. Notomys amplus Brazenor Large-Desert Hopping Mouse 1.896 This species is known from two specimens collected in 1896 from the vicinity of Charlotte Waters in the Northern

Territory of Australia.

Rattus macleari Thomas

Maclear's Rat 1908

Indigenous to Christmas Island in the Indian Ocean, south of Java. It was collected in 1886 and 1887, was abundant in 1897; but became extinct soon afterward. A Markey of the control of the contr

Rattus nativitatis Thomas

Bulldog Rat

1908

Also indigenous to Christmas Island but now vanished.

Mus musculus Linnaeus. The house mouse has well over 100 named forms of which not more than a score may represent valid races.

M.m. muralis Barrett-Hamilton St. Kilda Mouse 1931 This mouse of the Outer Hebrides, Scotland, was last seen more than forty years ago.

CAPROMYIDAE

Of eight genera in this family, three are extinct. Several genera contain both living and recently extinct species.

Geocapromys ingrahami J.A. Allen. Of three races of the Bahaman hutia, one race barely survives on a single small cay and the two following races are extinct.

Abaco Island Hutia a.18 Cent. G.i. abaconis Lawrence

Crooked Island Hutia a.18 Cent. G.i. irrectus Lawrence

Plagiodontia ipnaeum Miller. Hispaniolan Hutia or Zagouti a.17 Cent. Described from skeletal material found in kitchen-middens in the Dominican Republic and Haiti.

Least Hispaniolan Hutia a.17 Cent. Plagiodontia spelaeum Miller or Zagouti

Described from skeletal material found in cave near St. Michel, in Central Haiti.

Haitian Hexolobodon a.17 Cent. Hexolobodon phenax Miller Described from skeletal material found in caves in Central Haiti.

Aphaetreus montanus Miller Narrow-toothed Hutia c.16 Cent.

Described from numerous skeletal finds in caves in Haiti,
the Dominican Republic and San Gabriel Island.

<u>Isolobodon portoricensis</u> J.A. Allen Puerto Rican c.16 Cent. Isolobodon

Described from skeletal material abundant in kitchenmiddens of Puerto Rico, the Dominican Republic and the Virgin Islands.

Isolobodon levir J.A. Allen Haitian Isolobodon c.16 Cent.

Described from skeletal material abundant in kitchenmiddens of Haiti and the Dominican Republic.

ECHIMYIDAE

Boromys offella Miller Greater Cuban Spiny Rat a.19 Cent. Known only from skeletal material found in digs of native villages. It probably became extinct during the second half of the 1800s.

CETACEA

ESCHRICHTIDAE

Eschrichtius gibbosus Erxleben Atlantic Grey Whale
The grey whale of the Atlantic was a victim of 18th Century
whaling. The last record is of one found dead in a bay in
Devon, England.

CARNIVORA

CANIDAE

Canis lupus Linnaeus 1758. The wolf is represented by twenty-four generally accepted races in North America (Nearctic Region) and eight in Eurasia (Palaearctic Region). It disappeared from England by the year 1500, from Scotland by 1743 and from Ireland by 1776. Many races are barely surviving and several are quite certainly extinct.

- C.1. beothucus G.M. Allen and Barbour.Newfoundland Wolf 1911
 Only four skulls and one skin remain to represent this animal which once inhabited Newfoundland.
- C.l. alces Goldman Kenai Peninsula Wolf 1955

 Perhaps the largest of the wolves, this race has disappeared from its Alaskan haunts south of Anchorage.
- C.1. mogollonensis Goldman Mogollon Mountain Wolf 1935 Survived in central Arizona and New Mexico until well into the present century.
- C.l. monstrabilis Goldman Texas Grey Wolf 1942
 Survived in western Texas and northeastern Mexico until
 nearly half way through the present century.
- C.l. nubilus Say

 Once spread from southern Manitoba and Saskatchewan
 southward to northern Texas. Intergrades are suspected
 in the Minnesota population of the eastern timber welf.
- C.l. youngi Goldman Southern Rocky Mountain Wolf 1936
 Survived in the Rocky Mountain region of Nevada, Utah,
 and Colorado until well into the present century.
- C.l. hattai Kishida Hokkaido Wolf c.1889
 This animal was exterminated in Japan's northernmost large island some years before the end of the 19th century.
- C.l. deitanus Cabrera Spanish Wolf c.1950
 One of the two races originally found in Spain, this smaller, reddish form, of southern Spain, appears to have become extinct sometime since 1930.
- C.l. hodophilax Temminck Honshu Island Wolf 1904

 A smaller animal than the typical subspecies, with shorter legs and short, smooth coat, which was indigenous to the main Island of Japan.

Canis rufus Audubon and Bachman. The red wolf once ranged from the Atlantic coast of Florida and Georgia westward to central Illinois and Indiana. Two of three accepted races still survive in limited numbers in a seriously restricted range. Loss of habitat, persecution and hybridization with other canids pose serious threats to its continued survival.

C.r. floridanus Miller Eastern Red Wolf 1917
Formerly found in Florida, Georgia, Alabama and
southern Tennessee; the last certain record is dated
1917 but the race may have survived in Alabama through
the third decade of the present century.

<u>Vulpes macrotis</u> and <u>Vulpes velox</u>. The "Kit" and "Swift" foxes, of which some ten races can be recognized, are often regarded as conspecific, but are treated here as full species.

V.m. macrotis Merriam Southern California Kit Fox 1903
The typical subspecies which formerly inhabited
south-west California is certainly extinct.

<u>V. velox hebes</u> Merriam

Northern Swift Fox

This race, belonging to the Great Central Plains, has been believed to be extinct since the mid-1950s.

However, one was taken in North Dakota in 1970, the first definite record since 1915.

<u>Dusicyon australis</u> Kerr Falkland Islands Fox 1876 This animal became extinct when the last one was killed at Shallow Bay, West Falkland.

URSIDAE

<u>Ursus arctos</u> Linnaeus. The brown bear as listed here includes the large brown bears of Eurasia (Palaearctic Region) and the brown and grizzly bears of North America (Nearctic Region). The earliest name available for the Nearctic group is <u>Ursus horribilis</u> Ord, 1815, and nearly a hundred forms have been named. About 17 races would be acceptable to European (but not all American) systematists.

Of these 17 races, five are probably extinct:

<u>U.a.</u> californicus Merriam California Grizzly 1933 Formerly occurring in most of the State, it was last reported in 1933, but generally believed extinct by 1908.

U.a. horriaeus Baird New Mexico Grizzly c.1950
Formerly in Arizona, New Mexico and western Texas,
was last recorded in Texas in 1910 but still survived
in Arizona and New Mexico until quite recently.

<u>U.a. nelsoni</u> Merriam Mexican Grizzly 1962 Formerly found in northern Baja California, northeastern Sonora, most of Chihuahua and Coahuila, and northern Durango: last in northern Chihuahua.

U.a. pervagor Merriam Lilloet Grizzly b.20 Cent. Originally found in southern interior British Columbia, was never abundant.

<u>U.a. crowtheri</u> Schinz

Atlas Brown Bear

Formerly of western North Africa, was last recorded in the mountains near Tetuan, Morocco.

MUSTELIDAE

Mustela macrodon Prentis Sea Mink c.1890 This large mink of the New England coast is considered by some authorities to be a race of the American mink \underline{M} . vison.

FELIDAE

Felis pardina Temminck. Two forms of the pardel lynx (itself often regarded as a race of the northern lynx) are generally recognized, one of them now believed to be extinct:

<u>F.p. sardiniae</u> Mola Sardinian Lynx c.1950 The endemic subspecies of the Island of Sardinia.

?

?

Felis concolor Linnaeus. The cougar or puma was formerly transcontinental in America from Canada to the South American mainland. Many races have been described, including:

F.c. cougar Kerr Eastern Cougar Believed extinct since the late 19th century but sporadic reports and two fairly recent specimens, one from New Brunswick, Canada, in 1952 and one from Maine, USA, in 1938, give hope for its survival.

<u>Panthera pardus</u> Linnaeus. The leopard is widely distributed in the Ethiopian and Palaearctic Regions. Of 14 recognized races, four are endangered and another believed extinct:

P.p. jarvisi Pocock Sinai Leopard 1934

The last record is of a female killed in 1934.

Panthera tigris Linnaeus. The tiger was once distributed widely in Eurasia but is now extinct throughout most of its former range and is everywhere declining in numbers. Of the eight presently accepted races two are possibly extinct:

P.t. virgata Illiger Caspian Tiger Considered extinct in Russia, there are no certain reports of its existence in Iran or Afghanistan in recent years, although spoor was identified in north-eastern Iran in 1971.

P.t. balica Schwarz

The Indonesian Wildlife Service considers this tiger extinct, but recent reports from west Bali give hope that it may still survive.

Panthera leo Linnaeus. The lion deserves mention here because whether several races are extinct depends entirely on whose classification is used. Agreement with those who recognize only two races leads to the conclusion that the African race survives in a restricted range; but that the Asian race clings to a very precarious existence. Agreement with those who recognize several races among the populations of lions formerly inhabiting both Africa and Asia leads to the conclusion that as a minimum the following races have become extinct since 1600:

P.1.	melanocha	itus	Hamilton	Smith	Cape	Lion	1865
P.1.	leo Linn	aeus			Barbary	Lion	1922
P.1.	persicus	Meyer	•		Persian	Lion	1923

PINNIPEDIA

OTARIIDAE

Zalophus californianus Lesson. The California sea lion is a widely spread species containing three races of which
Z.c. japonicus Peters Japanese Sea Lion c.1960 formerly found on islets off Kyushu and Shikoku, and also in the Sea of Japan off western Honshu, was last recorded in the 1950s.

PHOCIDAE

Monachus tropicalis Gray

Caribbean Monk Seal 1962

Formerly found on shores and islands in the Caribbean Sea

and Gulf of Mexico. A few remained in the western Caribbean

until 1952 and, in 1962, a solitary animal seen on Isla

Mujeres, off the Yucatan Peninsula, was the last reported.

SIRENIA

DUGONGIDAE

Hydrodamalis stelleri Retzius Steller's Sea Cow 1768

Indigenous to the Bering Straits region; though reported

from near Cape Navarin in 1962, it is commonly believed

to be extinct.

PERISSODACTYLA

EQUIDAE

Equus gmelini Antonius Tarpon 1851
The tarpon, usually conceded to be the direct ancestor of
the European and West Asian domestic horses, survived last

Equus hemionus Pallas. Five races of the Asiatic wild ass have been recognized, of which the Indian E.h. khur is seriously near extinction and -

in Russia where the last one died in the Ukraine.

E.h. hemippus I. Geoffroy Syrian Wild Ass 1928 Is believed to have become extinct when the last one died in the Schönbruun Zoo, Vienna.

Equus quagga J.F. Gmelin Quagga 1883
Formerly found in Cape Province, it became extinct when the last one died in the Amsterdam Zoo.

Equus burchelli Gray. The common zebra of the African plains includes four races of which -

E.b. burchelli Gray Southern Burchell's Zebra 1909
The last survivor of the nominate race of southern
Botswana and Orange Free State, died in the London Zoo.

ARTIODACTYLA

SUIDAE

Sus scrofa Linnaeus. The wild boar includes about 30 races of which -

S.s. sennaarensis Gray Egyptian Wild Boar 1902 Formerly found in Egypt and the northern Sudan, was last recorded in Wadi Natron.

CERVIDAE

Cervus schomburgki Blyth Schomburgk's Deer 1932 Formerly found in Thailand, the last record is of one taken near Sayok along the Qwe-Noi River.

Cervus nippon Temminck. The Sika deer	is widely distri-
buted in eastern China, Korea, Manchuria	, Japan and
Formosa. It includes thirteen races of w	which two are
possibly extinct:	. TEL.
<u>C.n. grassianus</u> Heude	Shansi Sika c.1940
<u>C.n. kopschi</u> Swinhoe	South China Sika c.1940
Cervus elaphus Linnaeus. The red deer of	of Europe and south-
western Asia consists of twelve races of	which two Asian
races are possibly extinct:	• •
C.e. wallichi Cuvier	Shou 1946
C.e. yarkandensis Blanford	Yarkand Deer c.1930
Cervus canadensis Erxleben. The wapiti	of North America,
Manchuria and China consists of thirteen	races of which two
North American races are extinct:	
C.c. canadensis Erxleben	American Wapiti 1880
C.c. merriami Nelson	Merriam's Elk 1906
Cervus unicolor Kerr. The Sambar deer	of the Oriental
Region contains some sixteen races of what	ich -
C.u. boninensis Lydekker Bo	onin Islands Sambar c.1940
Is reported to be extinct. (It is a	possible that it
may have been introduced to the Bons	in Islands as
recently as 1850).	
C.u. mariannus Desmarest Maria	anne Islands Sambar c.1940
Also extinct. (May have been intro	duced from Luzon).
Rangifer tarandus Linnaeus. The reindee	er of the northern
hemisphere is divided into nine races of	which -
R.t. dawsoni Thompson Seton. Queen	Charlotte Reindeer c.1935
Was indigenous to Queen Charlotte Is	sland, British
Columbia, Canada.	
R.t. eogroenlandicus Degerbøl. East	Greenland Reindeer 1900
Was restricted to the central easter	rn coast of
Greenland.	And the second second

BOVIDAE	en de la companya de La companya de la co	
Bos primigenius Bojanus	Aurochs 1	627
Regarded as the ancestor of the Euro	pean domestic cattle,	
the last survivor died in the game p	preserve of Jaktorowka	
in Masovia, Poland.		
Bison bonasus Linnaeus. The Europe races of which one is extinct:	ean bison contained two	
B.b. caucasicus Grevé	Caucasian Wisent l	925
Bison bison Linnaeus. The American	ı bison is sometimes	
divided into four races of which, if	they are valid, the	
following are extinct:		
B.b. pennsylvanicus Shoemaker	Eastern Bison 1	825
B.b. <u>oregonus</u> V. Bailey	Oregon Bison 1	850
Hippotragus leucophaeus Pallas	Blue Antelope 1	800
The blaaubok was formerly found in t	he region of Swellendam,	
Cape Province, South Africa.		
Alcelaphus buselaphus Pallas. The	hartebeest contains	
about fifteen races of which -		
A.b. <u>buselaphus</u> Pallas	Bubal Hartebeest 1	923
Was the typical race of norther		
last known survivor died in the	Jardin des Plantes,	
Paris.		~ · 0
A.b. caama G. Cuvier The Cape race of southernmost A		938
		:
Gazella rufina Thomas	Rufous Gazelle 1	936
The red gazelle of interior Algeria.		
Capra pyrenaica Schinz. Of four re		
Spanish ibex, one is certainly extin		
a pure strain of a second is questio	production on the second of th	0
C.p. <u>lusitanica</u> Schlegel	G	892
C.p. pyrenaica Schinz	Pyrenean Ibex	?
Ovis canadensis Shaw. The bighorn		
represented by seven subspecies of w		
O.c. auduboni Merriam	_	910
The bighorn of the Missouri Riv	er badlands.	

The International Union for Conservation of Nature and Natural Resources (IUCN) is an independent international body, formed in 1948, which has its headquarters in Morges, Switzerland. It is a Union of sovereign states, government agencies and nongovernmental organizations concerned with the initiation and promotion of scientifically-based action that will ensure perpetuation of the living world - man's natural environment - and the natural resources on which all living things depend, not only for their intrinsic cultural or scientific values but also for the long-term economic and social welfare of mankind.

This objective can be achieved through active conservation programmes for the wise use of natural resources in areas where the flora and fauna are of particular importance and where the landscape is especially beautiful or striking, or of historical, cultural or scientific significance. IUCN believes that its aims can be achieved most effectively by international effort in co-operation with other international agencies, such as Unesco and FAO.

The World Wildlife Fund (WWF) is an international charitable organization dedicated to saving the world's wildlife and wild places, carrying out the wide variety of programmes and actions that this entails. WWF was established in 1961 under Swiss law, with headquarters also in Morges.

Since 1961, IUCN has enjoyed a symbiotic relationship with its sister organization, the World Wildlife Fund, with which it works closely throughout the world on projects of mutual interest. IUCN and WWF now jointly operate the various projects originated by, or submitted to them.

The projects cover a very wide range, from education, ecological studies and surveys, to the establishment and management of areas as national parks and reserves and emergency programmes for the safeguarding of animal and plant species threatened with extinction as well as support for certain key international conservation bodies.

WWF fund-raising and publicity activities are mainly carried out by National Appeals in a number of countries, and its international governing body is made up of prominent personalities in many fields.

