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RARE AND ENDANGERED WILDLIFE PROBLEMS AND SOLUTIONS

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ABSTRACT: Worldwide concern over vanishing species prompted a World Wildlife Conference in Washington, D. C. on February 12 - March 2, 1973 which resulted in a Convention of International Trade in Endangered Species of Wild Fauna and Flora. Enactment of the Endangered Species Conservation Act of 1973 by Congress places all endangered species native to United States under jurisdiction of the Federal Government.

The California Endangered Species Conservation and California Species Preservation Act enacted by the California Legislature in 1970 has resulted in a listing of 49 California animals declared rare or endangered. Efforts to protect and enhance threatened species are being directed to determine the current status of these animals and seeking stewardship over the habitat critical to their survival. Identity of problems and development of solutions to remove these animals to a nonendangered status is of immediate necessity. Such can be accomplished through a program of interagency cooperation.

INTRODUCTION

In view of recent enactment of the Endangered Species Act of 1973 and other predating endangered species acts, it would be well for us to review these relative to the problems federal and state agencies face in carrying through with the intent and provisions of these state and federal laws.

Whether we wish it or naught we are faced with an environmental movement of the 1970's as formidable and far reaching as the Preservation Movement of the 1900's. The destruction and over-exploitation of North American wildlife, which had taken place in the 1800's, had no counterpart elsewhere in the world. It was with the disappearance of the passenger pigeon and near extinction of the bison and other big game animals that the tide which threatened annihilation of this country's game was arrested. Preservationists and concerned sportsmen angered over the wanton killing of wildlife prevailed on Congress and state legislatures to enact the protective laws from which emerged the administration of the fish and wildlife resources as we know them today. This was the Rooseveltian Era of national consciousness and conservation effort. We are now in the era of endangered species.

ERA OF ENDANGERED SPECIES

The phenomenon of public concern over the world's vanishing animals and plants is an inseparable part of man's awareness to this shrinking world and its rapidly diminishing resources. The energy shortage is adding a new and alarming perspective to the environmental crisis before the world. Hardly a night goes by that we don't find an article in newsprint on some threat to our wildlife or a television special on animals and the environment. Wildlife has become man's modern barometer and endangered species the red flag of environmental disaster.

We now have a generation of city dwellers who are exposed to wildlife primarily through the medium of living room television. Whether this exposure is the anthropomorphic, animated fantasies perfected by Hollywood or true-to-life documentary wildlife films is irrelevant. The plight of wild animals has become a convenient means by which public interest is aroused on environmental issues, or is a means by which self-serving preservationist groups are able to obtain funds for their own enrichment.

Concern over endangered species has not been something of recent innovation by the new breed of protectionists. We can go back to 1903 when there was formed in England the Society for the Preservation of the Fauna of the Empire. This later to become the Fauna Preservation Society. First concerned with the rapidly diminishing African fauna, this organization has since spoken out for the world's endangered wildlife. Its counterpart in the United States was the spokesman W. T. Hornaday (1913) and the Permanent Wildlife Protection Fund. This was followed by the American Committee for International Wildlife Protection in 1933, the World Wildlife Fund, and other well directed organizations.

At the 8th International Conference of American States in 1938, the Pan-American Union established the International Committee of Experts on Nature Protection and Wildlife Preservation. A listing of threatened species was appended to the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere. In 1966, the International Union for Conservation of Nature and Natural Resources attracted attention to the world's vanishing wildlife through publication of their Red Data Book on threatened species. In response to increased scientific and public concern over endangered wildlife, protective legislation began to emerge in the United States.

ENDANGERED SPECIES LEGISLATION

Federal

In 1966 Congress enacted the Endangered Species Preservation Act. This act gave authority to the Secretary of the Interior to declare for the United States its native fauna threatened with extinction. The Secretary appointed within the U. S. Fish and Wildlife Service a Committee on Rare and Endangered Species--and on the basis of their recommendations he has declared 109 species endangered.

The Endangered Species Conservation Act of 1969 gave authority to the Secretary of the Interior to declare endangered those worldwide animals faced with extinction. This act also prohibited their importation into the United States without permit. Some 300 animals have been so designated.

These two federal acts had shortcomings. They exercised no federal jurisdiction over the state's resident threatened fish and wildlife and limited federal protection to these animals only on federal lands. In addition, there was no civil or criminal penalty for persons who violated the intent of these acts.

Most states had no statutes giving state wildlife agencies authority to declare its animals rare or endangered nor did they have protective laws or programs directed to preserving animals threatened with extinction or endangerment. Many states could care less. They were without funds to administer protective programs beyond their traditional role with fish and game. Largely because of lack of protective stewardship for native and worldwide endangered species, Congress enacted the Endangered Species Act of 1973. This act has far reaching implications as discussed later. A World Wildlife Conference on Endangered Species held February 12 - March 2, 1973 in Washington, D. C. resolved itself into a "Convention of International Trade in Endangered Species of Wild Fauna and Flora." A list of endangered species is appended to that Convention (U. S. Department of State, 1973).

State

The California Legislature in response to growing public concern over California's vanishing wildlife and natural areas enacted the Ecological Act of 1968. It was established for the protection of rare or endangered wildlife and specialized habitats. Authority was granted to the Department of Fish and Game to acquire by purchase, lease, gift or otherwise land and water areas to be set aside as Ecological Reserves.

A number of important bills emerged from the California Legislature in 1970. The California Endangered Species Act gave authority to the Fish and Game Commission to declare for California its rare and endangered species and also made it unlawful to take, possess or sell these animals. Those convicted of violating this Act were subject to fine and/or imprisonment. The California Species Preservation Act directed the Department of Fish and Game to inventory California's threatened fish and wildlife and to report to the Governor and Legislature biennially on the status of these animals (Calif. Dept. of Fish and Game, 1972; 1974). Another act prohibiting the importation into California of the endangered species listed by the Secretary of the Interior as well as certain other animals was added to the Penal Code. The California Environmental Protection Program provided revenue from personalized license plates for environmental projects.

Since enactment of these Acts, the Department not only has been engaged in an active program to determine the status of these animals but has been directing efforts to their protection and management. We developed an endangered species program unequalled anywhere in the United States and one which many states are seeking to follow. We have been aided in our efforts by Federal, State and County agencies and public interests. It has been a rewarding program.

It was our strong feeling that states should exercise primary jurisdiction over its threatened fish and wildlife and that federal assistance should be limited to support funds administered as is the federal Wildlife Restoration Act. However, there was strong movement in Congress to place federal jurisdiction over the nation's endangered species and threatened species and this was accomplished through enactment of the Endangered Species Act of 1973.

ENDANGERED SPECIES ACT OF 1973

Endangered Species Act of 1973 was signed into federal law by President Nixon on December 28, 1973. It has far reaching implications in respect to the protection and management of the world's endangered and threatened species. This public law is a lengthy document. Time does not permit complete reading of the Act and a full interpretation. Persons involved in vertebrate or weed pest control, including federal and state agencies, should thoroughly analyze this Act in respect to their respective programs. Consequence of not doing so could result in early confrontation with wildlife agencies, both state and federal, and/or civil suit brought about by citizen groups well aware of the provisions of the law. I shall attempt to only summarize the high points of the Act as it relates to our mutual areas of concern.

Purpose

To provide a means whereby the ecosystems upon which endangered species and threatened species may be conserved, to provide a program for the conservation of such endangered species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions.

Policy

Policy of Congress that all federal departments and agencies shall seek to conserve endangered species and threatened species and shall utilize their authorities in furtherance of the purposes of this Act.

Definitions

Conserve, conserving, and conservation--means to use and the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to this Act are no longer necessary.

Endangered Species--means any species which is in danger of extinction throughout all or a significant portion of its range other than a species of the Class Insecta determined by the Secretary to constitute a pest whose protection under the provisions of this Act would present an overwhelming and overriding risk to man.

Fish and Wildlife--means any member of the animal kingdom, including without limitation any mammal, fish, bird (including any migratory, nonmigratory, or endangered bird for which protection is also afforded by treaty or other international agreement), amphibian, reptile, mollusk, crustacean, arthropod or other invertebrate, and includes any part, product, egg, or offspring thereof, or the dead body or parts thereof.

Person--means an individual, corporation, partnership, trust, association, or any other private entity, or any officer, employee, agent, department, or instrumentality of the Federal Government, of any State or political subdivision thereof, or of any foreign government.

Plant--means any member of the plant kingdom, including seeds, roots and other parts thereof.

Secretary--means, except as otherwise herein provided, the Secretary of the Interior or the Secretary of Commerce as program responsibilities are vested pursuant to the provisions of Reorganization Plan Numbered 4 of 1970; except that with respect to the enforcement of the provisions of this Act and the Convention which pertain to the importation or exportation of terrestrial plants, the term means the Secretary of Agriculture.

Species--includes any subspecies of fish or wildlife or plants and any other group of fish or wildlife of the same species or smaller taxa in common spatial arrangement that interbreed when mature.

State Agency--means the state agency, department, board, commission, or other governmental entity which is responsible for the management and conservation of fish or wildlife resources within a state.

Take--means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Threatened Species--means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Procedures for Determining Endangered or Threatened Species

The present federal listing of endangered species is blanketed into this Act. Future determinations of endangered or threatened animals will follow a procedure. The Secretary of Interior with consultation, as appropriate, with states will publish its listing in the Federal Register and at the same time notify the Governors of those states. States are given 90 days for reply. Interested persons may petition for additions or deletions from the list. These petitions will be published in the Federal Register if the Secretary feels such action is warranted. The Secretary may treat any species as an endangered species or threatened species if he finds that such species closely resembles in appearance a species which has been listed that enforcement personnel would have substantial difficulty in attempting to differentiate between listed and unlisted species.

Cooperative Agreement

The Secretary of the Interior may provide assistance to the state under a cooperative agreement providing that state has an adequate program and authority to do so. This assistance could include funds amounting to sixty six and two thirds percent (66-2/3%) of the cost of such a state program. Federal funds can also be provided for land acquisition and management. Agreements can be negotiated with the state for administration and management of areas acquired for endangered species or threatened species.

Prohibited Acts (It is unlawful to:)

1. Import any such species into, or export any such species from the United States;
2. Take any such species within the United States or the territorial sea of the United States;
3. Take any such species upon the high seas;
4. Possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such species taken in violation of subparagraphs (B) and (C);
5. Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;
6. Sell or offer for sale in interstate or foreign commerce any such species; or
7. Violate any regulation pertaining to such species or to any threatened species of fish or wildlife listed pursuant to authority provided by this Act.

In respect to endangered species of plants, it is unlawful to:

1. Import any such species into, or export any such species from the United States;
2. Deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity, any such species;
3. Sell or offer for sale in interstate or foreign commerce any such species; or
4. Violate any regulations pertaining to such species or to any threatened species of plants listed pursuant to Section 4 of this Act and promulgated by the Secretary pursuant to authority provided by this Act.

Penalties and Enforcement

Any person who knowingly violates or who knowingly commits an act in the course of commercial activity which violates any provision of this Act may be assessed a civil penalty by the Secretary of not more than \$10,000 for each violation (provision is made for penalties of \$5,000 and \$1,000 upon conviction of other provisions of this Act).

Penalty for criminal violations of this Act are not to exceed \$20,000 or imprisonment for not more than one year or both. A lesser fine of \$10,000 and 6 months imprisonment is also provided.

Provision is also made for any federal agency to modify, suspend or revoke the lease, license, permit or other agreement of any person using federal lands convicted of violating this Act. It also provides for suspending any federal hunting or fishing permits or stamps issued to a person convicted of violating this Act.

Rewards

The Secretary of Treasury is authorized under recommendation of the Secretary of the Interior to pay any amount equal to one half of the civil penalty or fine paid, not to exceed \$2,500, to any person who furnishes information which leads to a finding of civil violation or a conviction of criminal violation of any provisions of this Act.

Citizen Suits

Any person may commence a civil suit on his behalf: (1) to enjoin any person, including the United States and any other governmental instrumentality or agency who is alleged to be in violation of any provision of this Act or regulation issued under the authority thereof, or (2) to compel the Secretary to apply pursuant to certain sections the prohibitions of this Act with respect to the taking of any resident endangered species or threatened species within any state.

WHERE DO WE GO FROM HERE

As mentioned in the introduction, The Endangered Species Act of 1973 has very far reaching implications both to the Department of Fish and Game and to agencies involved in animal control. This federal act makes it abundantly clear to wildlife agencies and other public agencies--both state and federal--the feelings of Congress in matters relating to endangered species and threatened species. We have no alternative but to accept these laws and gauge our activities in the field accordingly. This does not mean that pest control measures within the range of endangered or threatened species must come to an end. It means, however, that recognition must be made of endangered or threatened species within areas subjected to pest control practices and that precautions be exercised to prevent the killing of these animals.

Currently the Fish and Game Commission has classified 49 animals in California rare and endangered. The Department recognizes that in order to preserve certain of these animals we have no alternative but to seek public or private acquisition of the habitat critical to their survival. These areas to be set aside as ecological reserves or similar reserves managed for endangered species. We are proceeding in this direction. Ecological reserves have now been set aside for the Owen's pupfish, desert salamander, Santa Cruz long-toed salamander, and Morro Rock peregrine falcons. Other agencies have established reserves or management areas for the California condor, California least tern, California bighorn sheep, and osprey. Conceivably, it may come to pass that such reserves may be all that remains of the natural ecosystems in which these animals evolved.

We are endeavoring through our surveys to pinpoint, as best we can with the limited funding available, just where in California threatened animals occur so that we can more closely identify the measures necessary to assure the survival of these animals. Examples of survey efforts on animals of immediate concern to you are the San Joaquin kit fox, Mohave ground squirrel, Stevens kangaroo rat, Morro Bay kangaroo rat, Fresno kangaroo rat, and California condor.

The San Joaquin kit fox is classed rare by the Commission and endangered by the Secretary of the Interior. We have continued our efforts to determine more fully the status of this animal beyond our early studies (Laughrin, 1970; Morrell, 1972). Recently we completed a study which mapped the known sites occupied by this fox in Contra Costa, Alameda, San Joaquin and Tulare counties (Swick, 1973). These studies indicated what can be accomplished when the full resources of county agricultural commissioners are extended to such endeavors. We also reported (Swick, 1973) on application of 1080 rodenticide on an area occupied by kit fox.

Our study on the Mohave ground squirrel (Hoyt, 1972) recorded only 4 locations for this rare mammal in San Bernardino and Los Angeles counties. The Stevens kangaroo rat survey (Thomas, 1972) revealed only 16 sites in Riverside and San Diego counties occupied by this mammal. The Morro Bay kangaroo rat was found by Congdon (1971) to occur in an area of 1.7 square miles and our study of the Fresno kangaroo rat (Hoffman, 1974) resolved the identity of this animal and its location in 2 sites in Fresno County.

Recently the Condor Technical Committee was reconstituted to the California Condor Recovery Team. Efforts are now being directed to more specifically identify those critical areas in the 9 million acre range of the condor where condors feed, roost, and nest and to identify which protective measures can be instituted to assure continued survival of this highly endangered bird.

In summary, this paper addresses itself to the concern of the people and their representatives in Congress and the Legislature that this nation's and the world's natural ecosystems be preserved and that no form of plant or wildlife be permitted to become extinct because of neglect or man-made causes. It is our duty to pool the resources of public agencies and concerned citizenry to resolve the best we can solutions to the preservation of the world's natural amenities. I think Aldo Leopold's words best express this commitment: "A land ethic of course cannot prevent the alteration, management and use of these resources, but it does affirm their right to continue existence in a natural state".

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APPENDIX I

LISTING OF CALIFORNIA'S ENDANGERED AND RARE FISH AND WILDLIFE*

Pursuant to the California Endangered Species Act of 1970 and Sections 2050-2055 of the Fish and Game Code, the Fish and Game Commission declares the following to be California's endangered and rare fish and wildlife.

ENDANGERED

Birds

California brown pelican (Pelecanus occidentalis californicus)
 California condor (Gymnogyps californianus)
 Southern bald eagle (Haliaeetus leucocephalus leucocephalus)
 American peregrine falcon (Falco peregrinus anatum)
 California clapper rail (Rallus longirostris obsoletus)
 Yuma clapper rail (Rallus longirostris yumanensis)
 Light-footed clapper rail (Rallus longirostris levipes)
 California least tern (Sterna albifrons browni)
 Belding's savannah sparrow (Passerculus sandwichensis beldingi)

Mammals

Morro Bay kangaroo rat (Dipodomys heermanni morroensis)
 Salt marsh harvest mouse (Reithrodontomys raviventris)

Fishes

Colorado squawfish (Ptychocheilus lucius)
 Mohave chub (Gila mohavensis)
 Owens pupfish (Cyprinodon radiosus)
 Tecopa pupfish (Cyprinodon nevadensis calidae)
 Unarmored threespine stickleback (Gasterosteus aculeatus williamsoni)
 Thicktail chub (Gila crassicauda)
 Owens tui chub (Gila bicolor snyderi)
 Bonytail chub (Gila elegans)
 Humpback sucker (Xyrauchen texanus)
 Shortnose sucker (Chasmistes brevirostris)
 Lost River sucker (Catostomus luxatus)

Amphibians

Santa Cruz long-toed salamander (Ambystoma macrodactylum croceum)
 Desert slender salamander (Batrachoseps aridus)

Reptiles

Blunt-nosed leopard lizard (Crotaphytus wislizenii silus)
 San Francisco garter snake (Thamnophis sirtalis tetrataenia)

RARE

Birds

California black rail (Laterallus jamaicensis coturniculus)
 California yellow-billed cuckoo (Coccyzus americanus occidentalis)

Mammals

Mohave ground squirrel (Citellus mohavensis)
 Stephens kangaroo rat (Dipodomys stephensi)
 Fresno kangaroo rat (Dipodomys nitratoides exilis)
 San Joaquin kit fox (Vulpes macrotis mutica)

*Adopted by the California Fish and Game Commission on May 21, 1971. Amended December 7, 1973.

Mammals (cont.)

- Island fox (Urocyon littoralis)
Wolverine (Gulo luscus)
Guadalupe fur seal (Arctocephalus townsendi)
California bighorn sheep (Ovis canadensis californiana)
Peninsular bighorn sheep (Ovis canadensis cremnobates)

Fishes

- Modoc sucker (Catostomus microps)
Rough sculpin (Cottus asperrimus)
Cottonball Marsh pupfish (Cyprinodon milleri)

Amphibians

- Siskiyou mountain salamander (Plethodon stormi)
Kern Canyon slender salamander (Batrachoseps simatus)
Tehachapi slender salamander (Batrachoseps stebbinsi)
Limestone salamander (Hydromantes brunus)
Shasta salamander (Hydromantes shastae)
Black toad (Bufo boreas exsul)

Reptiles

- Southern rubber boa (Charina bottae umbratica)
Alameda striped racer (Masticophis lateralis euryxanthus)
Giant garter snake (Thamnophis couchi gigas)

Official list of endangered native fish and wildlife, as amended May 19, 1972.

FISHES

Shortnose sturgeon
 Longjaw cisco
 Lahontan cutthroat trout
 Piute cutthroat trout
 Greenback cutthroat trout
 Gila trout
 Arizona (Apache) trout
 Humpback chub
 Mohave chub
 Pahrnagat bonytail
 Moapa dace
 Woundfin
 Colorado River squawfish
 Kendall Warm Springs dace
 Cui-ui
 Devil's Hole pupfish
 Comanche Springs pupfish
 Tecopa pupfish
 Warm Springs pupfish
 Owens River pupfish
 Pahrump killifish
 Big Bend gambusia
 Clear Creek gambusia
 Pecos gambusia
 Unarmored threespine stickleback
 Gila topminnow
 Fountain darter
 Watercress darter
 Maryland darter
 Blue pike

Acipenser brevirostrum
Coregonus alpenae
Salmo clarki henshawi
Salmo clarki seleniris
Salmo clarki stomias
Salmo gilae
Salmo sp.
Gila cypha
Siphateles mohavensis
Gila robusta jordani
Moapa coriacea
Plagopherus argentissimus
Ptychocheilus lucius
Rhinichthys osculus thermalis
Chasmistes cujus
Cyprinodon diabolis
Cyprinodon elegans
Cyprinodon nevadensis calidae
Cyprinodon nevadensis pectoralis
Cyprinodon radiosus
Empetrichthys latos
Gambusia gaigei
Gambusia heterochir
Gambusia nobolis
Gasterosteus aculeatus williamsoni
Poeciliopsis occidentalis
Etheostoma fonticola
Etheostoma nuchale
Etheostoma sellare
Stizostedion vitreum glaucum

REPTILES AND AMPHIBIANS

American alligator
 Blunt-nosed leopard lizard
 San Francisco garter snake
 Puerto Rican boa
 Santa Cruz long-toed salamander
 Texas blind salamander
 Houston toad

Alligator mississippiensis
Crotaphytus silus
Thamnophis sirtalis tetrataenia
Epicrates inornatus
Ambystoma macrodactylum croceum
Typhlomolge rathbuni
Bufo houstonensis

BIRDS

Hawaiian dark-rumped petrel
 California least tern
 Hawaiian goose (nene)
 Aleutian Canada goose
 Laysan duck
 Hawaiian duck (koloa)
 Mexican duck
 Brown pelican
 California condor
 Florida everglade kite (snail kite)
 Hawaiian hawk (io)
 Southern bald eagle
 American peregrine falcon
 Arctic peregrine falcon
 Attwater's greater prairie chicken

Pterodroma phaeopygia sandwichensis
Sterna albifrons browni
Branta sandvicensis
Branta canadensis leucopareia
Anas laysanensis
Anas wyvilliana
Anas diazi
Pelecanus occidentalis
Gymnogyps californianus
Rostrhamus sociabilis plumbeus
Buteo solitarius
Haliaeetus leucocephalus leucocephalus
Falco peregrinus anatum
Falco peregrinus tundrius
Tympanuchus cupido attwateri

APPENDIX II (cont.)

Masked bobwhite
 Whooping crane
 Yuma clapper rail
 California clapper rail
 Light-footed clapper rail
 Hawaiian gallinule
 Hawaiian coot
 Hawaiian stilt
 Puerto Rican plain pigeon
 Puerto Rican parrot
 Ivory-billed woodpecker
 Red-cockaded woodpecker
 Hawaiian crow (alala)
 Small Kauai thrush (puaiohi)
 Large Kauai thrush
 Molokai thrush (olomau)
 Nilhoa millerbird
 Kauai oo (oo aa)
 Crested honeycreeper (akohekohe)
 Hawaii akepa (akepa)
 Maui akepa (akepuie)
 Oahu creeper (alauwahio)
 Molokai creeper (kakawahie)
 Akiapolaau
 Kauai akialoa
 Kauai and Maui nukupuus
 Laysan and Nihoa finches
 Ou
 Palila
 Maui parrotbill
 Bachman's warbler
 Kirtland's warbler
 Dusky seaside sparrow
 Cape Sable sparrow

MAMMALS

Hawaiian hoary bat
 Indiana bat
 Delmarva Peninsula fox squirrel
 Morro Bay kangaroo rat
 Salt marsh harvest mouse
 Eastern timber wolf
 Red wolf
 San Joaquin kit fox
 Black-footed ferret
 Florida panther
 Florida manatee (sea cow)
 Key deer
 Columbian white-tailed deer
 Sonoran pronghorn

Colinus virginianus ridgwayi
Grus americana
Rallus longirostris yumanensis
Rallus longirostris obsoletus
Rallus longirostris levipes
Gallinula chloropus sandvicensis
Fulica americana alai
Himantopus himantopus knudseni
Columba inornata wetmorei
Amazona vittata
Campephilus principalis
Dendrocopos borealis
Corvus tropicus
Phaeornis palmeri
Phaeornis obscurus myadestina
Phaeornis obscurus rutha
Acrocephalus kingi
Moho braccatus
Palmeria dolei
Loxops coccinea coccinea
Loxops coccinea ochraceu
Loxops maculata maculata
Loxops maculata flammea
Hemignathus wilsoni
Hemignathus procerus
Hemignathus lucidus
Psittirostra cantans
Psittirostra psittacea
Psittirostra bailleui
Pseudonestor xanthorphrys
Vermivora bachmanii
Dendroica kirtlandii
Ammospiza nigrescens
Ammospiza mirabilis

Lasiurus cinereus semotus
Myotis sodalis
Sciurus niger cinereus
Dipodomys heermanni morroensis
Reithrodontomys raviventris
Canis lupus lycaon
Canis rufus
Vulpes macrotis mutica
Mustela nigripes
Felis concolor coryi
Trichechus manatus latirostris
Odocoileus virginianus clavium
Odocoileus virginianus leucurus
Antilocapra americana sonoriensis