

## **Historic, Archive Document**

Do not assume content reflects current scientific knowledge, policies, or practices.



1964

F76322  
Exp. 2

U. S. Forest Service  
Research Paper RM-4

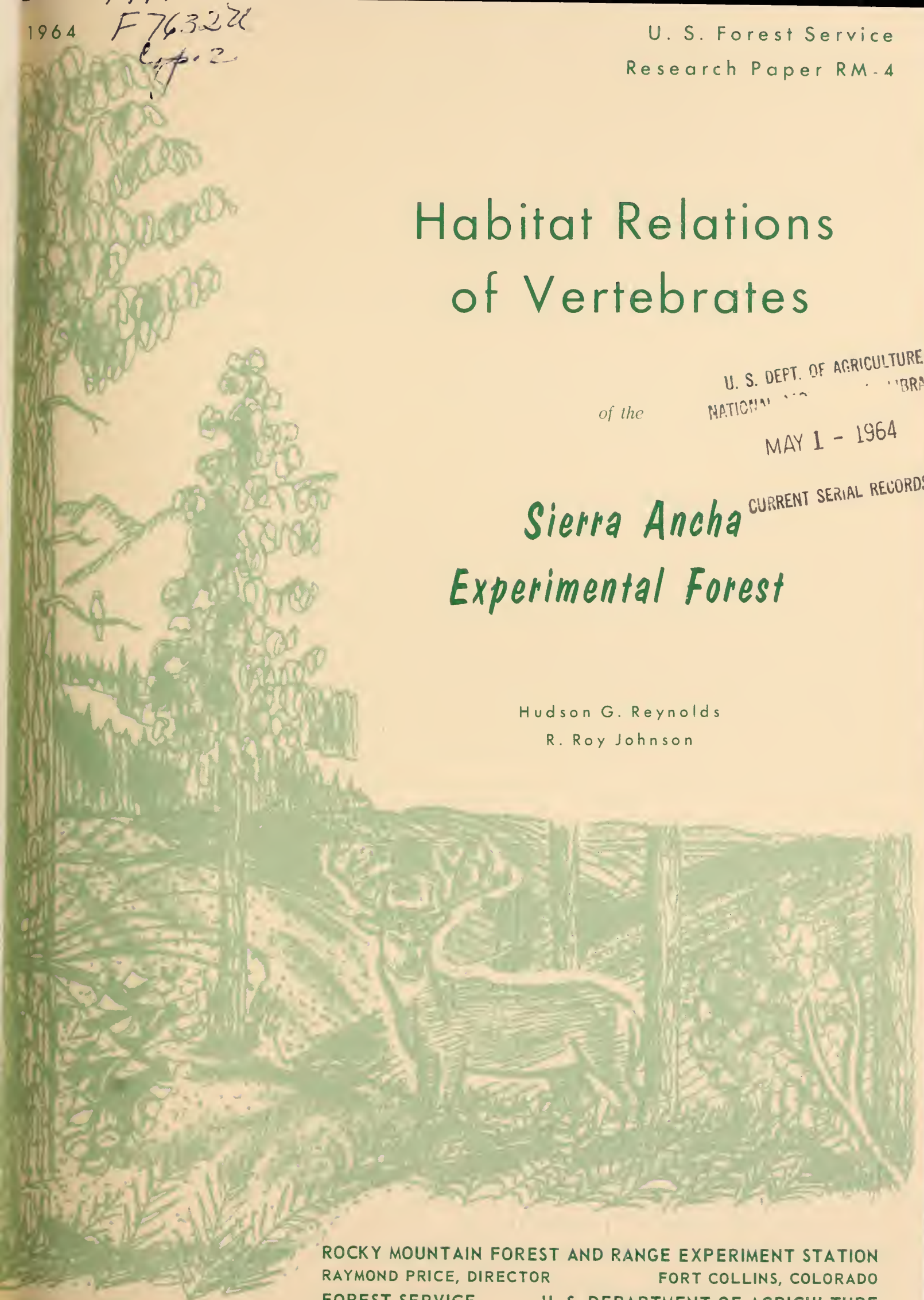
# Habitat Relations of Vertebrates

U. S. DEPT. OF AGRICULTURE  
of the NATIONAL LIBRARY  
MAY 1 - 1964

## *Sierra Ancha* *Experimental Forest*

CURRENT SERIAL RECORDS

Hudson G. Reynolds  
R. Roy Johnson



ROCKY MOUNTAIN FOREST AND RANGE EXPERIMENT STATION  
RAYMOND PRICE, DIRECTOR FORT COLLINS, COLORADO  
FOREST SERVICE U. S. DEPARTMENT OF AGRICULTURE



HABITAT RELATIONS OF VERTEBRATES  
OF THE  
SIERRA ANCHA EXPERIMENTAL FOREST <sup>1</sup>

by

Hudson G. Reynolds, Wildlife Research Biologist <sup>2</sup>

and

R. Roy Johnson, Graduate Student <sup>3</sup>

<sup>1</sup> A portion of the Tonto National Forest, set aside for experimental purposes in 1932, under authority of the Secretary of the U. S. Department of Agriculture, and administered by the Rocky Mountain Forest and Range Experiment Station.

<sup>2</sup> Rocky Mountain Forest and Range Experiment Station, with central headquarters maintained in cooperation with Colorado State University at Fort Collins; author is stationed at Tempe in cooperation with Arizona State University.

<sup>3</sup> Department of Zoology, University of Arizona, Tucson.





# Habitat Relations of Vertebrates of the Sierra Ancha Experimental Forest

by  
Hudson G. Reynolds and R. Roy Johnson

Many forms of vertebrates are found on the 14,000-acre Sierra Ancha Experimental Forest of the Sierra Ancha Mountains, which lie between Globe and Young, Gila County, Arizona. Elevations range from 3,500 feet to over 7,000 feet; soils and aspects vary greatly. As a result, vegetation associations are complex. Such varied environmental conditions produce a diversity of habitats for vertebrates.

This paper describes the Experimental Forest in general terms, characterizes the more important vertebrate habitats, and presents a checklist of vertebrates together with notes as to relative abundance, seasonal occurrence, and macro- and microhabitats.

For nearly 30 years, precipitation and runoff have been measured from numerous watersheds within the Experimental Forest. Vegetation has been modified on some watersheds to determine the influences of different kinds, statures, and arrangements of vegetation upon water yields and erosion. Other experimental watersheds have been grazed or logged.

Past or future changes in plant cover may have or may be expected to affect the vertebrate fauna. Some species could be favored; others affected adversely. Multiple-use land management is concerned with the interrelated effects of land use upon both fauna and flora. Hence, an inventory of vertebrate fauna in relation to their habitats provides important basic information. Moreover, as vegetation is changed by various experiments, responses of vertebrate animals can be related to habitat modifications. From such data, the impact of land-management activities involving modification of vegetation upon vertebrate fauna can be predicted.

## HABITATS

Macrohabitats are designated according to dominant vegetation as pine-fir, ponderosa pine, chaparral, and desert grassland. Microhabitats or vertebrate niches exist within macrohabitats. These niches have both space and stature relations to macrohabitats. Macrohabitats are always given for each vertebrate; where relations are known, microhabitats are also identified.

### Pine-Fir

The pine-fir habitat is found at the highest elevations on the Forest--from 6,000 to over 7,000 feet (fig. 1). Best development of trees is reached under comparatively cool and moist conditions of north- and east-facing slopes. Dominant trees include Douglas-fir,<sup>4</sup> white fir, and ponderosa pine. Understory associated trees are Gambel oak, and New-Mexican locust. Where light penetrates the canopy, mountain snowberry is common.

Important microhabitats include (1) rocky cliffs, (2) natural forest openings, (3) forest clearings, (4) alder-maple riparian sites, (5) aspen, and (6) numerous situations associated with stature and foliage of trees (fig. 2). Natural forest openings are dominated by Kentucky bluegrass, although numerous forbs are also present. Introduced orchardgrass dominates forest clearings. Riparian sites have a dominant overstory of bigtooth maple, boxelder, and Arizona alder. Common monkeyflower and golden columbine are common

<sup>4</sup> For common and botanical names of plants mentioned, see page 7.





*Figure 1.--In the pine-fir habitat, the overstory of Douglas-fir, white fir, and ponderosa pine is dense, but the understory vegetation is scanty.*





Figure 2.--Typical of some of the microhabitats found on the Sierra Ancha Experimental forest are:

*Alder-maple riparian*



*Natural forest openings with rocky cliffs in background.*

*Oak-sycamore riparian*





where permanent water exists. Aspen sites are overstoried by quaking aspen; they may be understoried by white fir reproduction and mountain snowberry. Numerous forbs are usually present.

Representative vertebrates include the Mexican packrat,<sup>5</sup> porcupine, sharp-shinned hawk, turkey, hairy woodpecker, and Coues' flycatcher. In riparian situations, the red-faced warbler is characteristic.

### Ponderosa Pine

The ponderosa pine habitat extends from 7,000 feet down to about 5,500 feet elevation (fig. 3). At the higher elevations, the habitat is found on drier sites--south- and west-facing slopes and shallow soils.

Ponderosa pine is the dominant tree. Associated trees in the understory include Gambel oak, New-Mexican locust, and emory oak. Bracken is the most conspicuous herbaceous plant. There are minor amounts of blue grama and prairie Junegrass.

Flora of microhabitats of rocky cliffs, natural forest openings, and forest clearings is similar to that of the pine-fir habitat. In addition, emory oak and oak-sycamore microhabitats are found in ponderosa pine. Emory oak environments are confined to drier situa-

<sup>5</sup> For scientific names, see checklist beginning on page 9.

tions of shallow soils, south-facing aspects, rock outcrops, or combinations thereof. Associated shrubs in the understory include birchleaf mountainmahogany and pointleaf manzanita. Oak-sycamore riparian sites are characterized by Arizona white oak, Arizona sycamore, and Arizona walnut.

Among the conspicuous vertebrates are tassel-eared squirrel, whitetail deer, Steller's jay, western bluebird, and chipping sparrow. Vertebrates often seen in the oak-sycamore microhabitat are Arizona gray squirrel, Cooper's hawk, screech owl, western and Cassin's kingbirds, and bridled titmouse.

### Chaparral

The chaparral habitat occupies elevations from about 4,000 to 6,000 feet (fig. 4). Among the most conspicuous woody species are shrub live oak, skunkbush sumac, pointleaf manzanita, hollyleaf buckthorn, desert ceanothus, Wright silktassel, and birchleaf mountainmahogany. The most prominent perennial grasses in the understory are side-oats grama and hairy grama.

The main microhabitats include rocky cliffs and oak-sycamore riparian sites that have been previously described.

Among the more conspicuous vertebrates encountered in this habitat are the banded gecko, scrub jay, plain titmouse, western rooster skunk, and ringtail.



Figure 3.--Dense understory grows in the ponderosa pine habitat where the overstory of trees is open.





*Figure 4.--In this chaparral habitat, the shrub canopy is fairly open and a good understory cover grows.*





## Desert Grassland

The desert grassland habitat is comparatively small on the Experimental Forest (fig. 5). This environment is confined to benchlands below 5,000 feet elevation where soils are comparatively shallow. There is some invasion of velvet mesquite. The most abundant halfshrub is broom snakeweed. Common perennial grasses include side-oats grama, hairy grama, black grama, and curlymesquite.

The most characteristic vertebrates of this habitat include the Gila monster, Gambel's quail, roadrunner, mockingbird, phainopepla, and peccary.

### COLLECTIONS AND IDENTIFICATIONS

Many of the species collections and identifications were made by the junior author in preparing a Master's thesis for the Department of Zoology at the University of Arizona, Tucson.<sup>6</sup> Other identifications are from previous museum collections. Data on reptiles and amphibians are from a collection by Little.<sup>7</sup>

In the "Checklist of Vertebrates and Habitat Relations" which follows, scientific and common names of birds are according to the AOU;<sup>8</sup> other vertebrates, Blair et al.<sup>9</sup>

Museum collections and sight identifications are indicated by the following symbols:

USNM -- United States National Museum, Washington, D.C.

MVZ -- Museum of Vertebrate Zoology, University of California, Berkeley, California  
UA -- University of Arizona, Tucson, Arizona  
JSW -- Johnson-Simpson-Werner Collection, Arizona State University, Tempe, Arizona  
Sight -- Sight record only

The relative abundance of each species is indicated as follows:

Abundant -- The species is conspicuous and is easily collected, or may be observed several times in passing through a major habitat  
Common -- The species can be located any time during the proper season by working carefully in a specific habitat

<sup>6</sup> Johnson, R. Roy. *The biota of Sierra Ancha, Gila County, Arizona*. 114 pp., 1960. (Unpublished master's thesis on file at Department of Zoology, University of Arizona, Tucson.)

<sup>7</sup> Little, Elbert L. Jr. *Amphibians and reptiles of the Roosevelt Reservoir Area, Arizona*. *Copeia* 4: 260-265. 1940.

<sup>8</sup> American Ornithologists' Union. *Checklist of North American birds*. Ed. 5, 691 pp. Baltimore: The Lord Baltimore Press, Inc. 1957.

<sup>9</sup> Blair, W. F., Blair, A. P., Brodtkorb, P., and others. *Vertebrates of the United States*. 819 pp., illus. New York: McGraw-Hill Book Co., Inc. 1957.



Figure 5.--Velvet mesquite and broom snakeweed are invading this desert grassland habitat.

Rare -- Familiarity with habitat requirements of the species and persistent effort are necessary to locate the species

Residence status of birds is indicated as follows:

Resident -- Found in the habitat yearlong  
Summer

resident -- Breeds in the habitat during the summer months

Visitor -- Found in the habitat during specific seasons of the year

Transient -- Stops over in the habitat for short periods in the course of migration

## COMMON AND BOTANICAL NAMES OF PLANTS MENTIONED

### Perennial Grasses

Bluegrass, Kentucky  
*Poa pratensis* L.

Curlymesquite  
*Hilaria belangeri* (Steud.) Nash

Gramma, black  
*Bouteloua eriopoda* Torr.

Gramma, blue  
*Bouteloua gracilis* (H. B. K.) Lag.

Gramma, hairy  
*Bouteloua hirsuta* Lag.

Gramma, side-oats  
*Bouteloua curtipendula* (Michx.) Torr.

Orchardgrass  
*Dactylis glomerata* L.

Junegrass, Prairie  
*Koeleria cristata* (L.) Pers.

### Forbs

Bracken  
*Pteridium aquilinum* (L.) Kuhn

Columbine, golden  
*Aquilegia chrysantha* A. Gray

Monkeyflower, common  
*Mimulus guttatus* DC.

### Trees and Shrubs

Alder, Arizona  
*Alnus oblongifolia* Torr.

Aspen, quaking  
*Populus tremuloides* Michx.

Boxelder  
*Acer negundo* L.

Buckthorn, hollyleaf  
*Rhamnus crocea* Nutt.

Ceanothus, desert  
*Ceanothus greggii* Gray

Cholla  
*Opuntia* spp.

Douglas-fir  
*Pseudotsuga menziesii* (Mirb.) Franco

Fir, white  
*Abies concolor* (Gord. and Glend) Lindl.

Locust, New-Mexican  
*Robinia neomexicana* A. Gray

Manzanita, pointleaf  
*Arctostaphylos pungens* H. B. K.

Maple, bigtooth  
*Acer grandidentatum* Nutt.

Mesquite, velvet  
*Prosopis velutina* (Woot.) Sarg.

Mountainmahogany, birchleaf  
*Cercocarpus betuloides* Nutt.

Oak, Arizona white  
*Quercus arizonica* Sarg.

Oak, Emory  
*Quercus emoryi* Torr.

Oak, Gambel  
*Quercus gambelii* Nutt.

Oak, shrub live  
*Quercus turbinella* Greene

Pine, ponderosa  
*Pinus ponderosa* Lawson

Silktassel, Wright  
*Garrya wrightii* Torr.

Snakeweed, broom  
*Gutierrezia sarothrae* (Pursh) Britt & Rusby

Snowberry, mountain  
*Symphoricarpos oreophilus* A. Gray

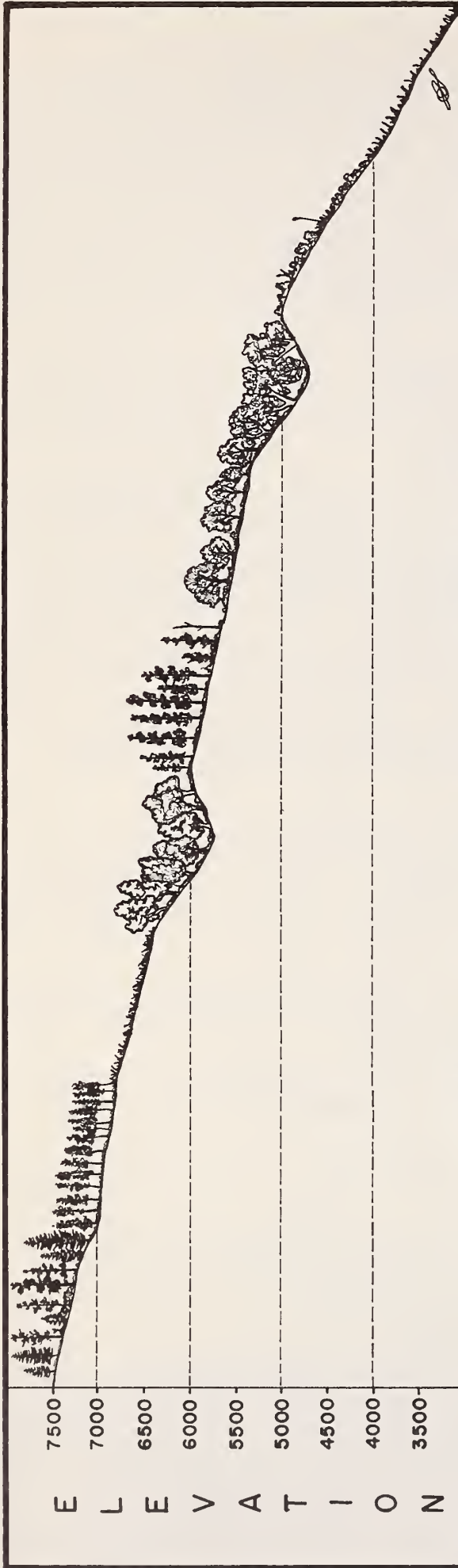
Sumac, skunkbush  
*Rhus trilobata* Nutt.

Sycamore, Arizona  
*Platanus wrightii* S. Wats.

Walnut, Arizona  
*Juglans major* (Torr.) Heller

Yucca  
*Yucca* spp.





E L E V A T I O N

MACRO HABITAT	PINE-FIR				PONDEROSA PINE				CHAPARRAL	DESERT GRASSLAND
	PINE-FIR	ASPEN	FOREST OPENING	ALDER-MAPLE	PINE	EMORY OAK	OAK-SYCAMORE			
DOMINANT VEGETATION	Douglas-fir	Quaking aspen	Kentucky bluegrass	Bigtooth maple	Ponderosa pine	Emory oak	Arizona sycamore	Shrub live oak	Broom snakeweed	
	White fir	Mountain snowberry	Orchardgrass	Arizona alder	New-Mexican locust	Mountain-mahogany	Arizona walnut	Skunkbush sumac	Side-oats grama	
	Ponderosa pine			Boxelder	Gambel oak	Manzanita	Arizona white oak	Silktassel	Hairy grama	
AMPHIBIANS AND REPTILES	Eastern fence lizard			Canyon tree frog	Eastern fence lizard	Greater earless lizard	Canyon tree frog	Banded gecko	Gila monster	
	Short-horned lizard			Leopard frog	Short-horned lizard	Tree lizard	Leopard frog	Collared lizard	Western rattlesnake	
	Black-tailed rattlesnake			Mexican garter snake	Black-tailed rattlesnake	Western garter snake	Mexican garter snake	Mexican black-headed snake	Western whiptail	
B I R D S	Hermit thrush	Ruby-crowned kinglet	Rufous hummingbird	Zone-tailed hawk	Western bluebird	Hutton's vireo	Cooper's hawk	Poor-will	Mockingbird	
	Hairy woodpecker	Warbling vireo	Pine siskin	Pygmy owl	Chipping sparrow	Rufous-sided towhee	Screech owl	Scrub jay	Brown towhee	
	Red crossbill	Red crossbill	Slate-colored junco	Downy woodpecker	Band-tailed pigeon	Mexican (ultra-marine) jay	Western kingbird	Canyon wren	Loggerhead shrike	
MAMMALS	Brown creeper	Green-tailed towhee	Robin	Western woodpecker	Acorn woodpecker	Common bushhit	Bridled titmouse	Plain titmouse	Roadrunner	
	Sharp-shinned hawk	Western wood pewee		Red-faced warbler	Pygmy nuthatch	Blue-gray gnatcatcher	Painted redstart	Gray vireo	Verdin	
	Red-breasted nuthatch	Orange-crowned warbler	Valley pocket gopher	Valley pocket gopher	Rock squirrel	Lazuli bunting	Hooded oriole	Black-chinned sparrow	Phainopepla	
	Cliff chipmunk	Valley pocket gopher	Valley pocket gopher	Valley pocket gopher	Tassel-eared squirrel	White-throated packrat	Arizona gray squirrel	Peccary	Peccary	
	Mexican packrat	Desert harvest mouse	Desert harvest mouse	Black bear	Porcupine	Ringtail	Raccoon	California brown bat	Mexican free-tail bat	
	Black bear	Eastern cottontail	Deer mouse	Raccoon	Striped skunk	Bobcat	Western rooper skunk	Western pipistrelle	Northern brown bat	
	Mountain lion	Brush mouse	Mexican vole	Whitetail deer	Whitetail deer	Western rooper skunk	Ringtail	Ringtail	Ringtail	
	Mule deer		Whitetail deer	Gray fox	Gray fox			Whitetail deer	Bobcat	
	Elk									



CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS

Common and scientific names	Relative abundance	Resident status	Location of museum collection	Additional notes
<b>FISHES:</b>				
<u>Salmons, trouts, and chars (Salmonidae)</u>				
Rainbow trout <i>Salmo gairdneri</i> Richardson	Rare	Resident	--	Introduced in Workman Creek; alder-maple riparian
Brook trout <i>Salvelinus fontinalis</i> (Mitchill)	Rare	Resident	--	Introduced in Workman Creek; alder-maple riparian
<b>AMPHIBIANS:</b>				
<u>Tree frogs (Hylidae)</u>				
Canyon tree frog <i>Hyla arenicolor</i> Cope	Common	Resident	USNM	Oak-sycamore and alder-maple riparian
<u>Frogs (Ranidae)</u>				
Leopard frog <i>Rana pipiens</i> Schreber	Rare	Resident	USNM	Oak-sycamore and alder-maple riparian
Tarahumara frog <i>Rana tarahumarae</i> Boulenger	Abundant	Resident	USNM	Oak-sycamore riparian
<b>REPTILES:</b>				
<u>Gekos (Gekkonidae)</u>				
Banded gecko <i>Coleonyx variegatus</i> (Baird)	Rare	Resident	USNM	Chaparral
<u>Iguanas (Iguanidae)</u>				
Collared lizard <i>Crotaphytus collaris</i> (Say)	Common	Resident	USNM	Chaparral
Greater earless lizard <i>Holbrookia texana</i> (Troschel)	Rare	Resident	USNM	Chaparral
Clark's spiny lizard <i>Sceloporus clarki</i> Baird and Girard	Common	Resident	USNM	Chaparral
Eastern fence lizard <i>Sceloporus undulatus</i> (Latreille)	Common	Resident	USNM	Pine-fir, ponderosa pine, chaparral
Tree lizard <i>Uta ornata</i> Baird and Girard	Abundant	Resident	USNM	Chaparral
Short-horned lizard <i>Phrynosoma douglassi</i> (Bell)	Common	Resident	USNM	Pine-fir, ponderosa pine, chaparral
<u>Lateral fold lizards (Anguinae)</u>				
Arizona alligator lizard <i>Cerrhonotus kingi</i> (Gray)	Rare	Resident	USNM	Pine-fir, ponderosa pine, chaparral
<u>Beaded lizards (Helodermatidae)</u>				
Gila monster <i>Heloderma suspectum</i> Cope	Rare	Resident	USNM	Chaparral
<u>Teids (Teiidae)</u>				
Western whiptail <i>Cnemidophorus tigris</i> Baird and Girard	Rare	Resident	USNM	Chaparral
Spotted whiptail <i>Cnemidophorus sacki</i> Wiegmann	Common	Resident	USNM	Chaparral
<u>Skinks (Scincidae)</u>				
Great Plains skink <i>Eumeces obsoletus</i> (Baird and Girard)	Rare	Resident	USNM	Chaparral
<u>Blind snakes (Leptotyphlopidae)</u>				
Western blind snake <i>Leptotyphlops humilis</i> (Baird and Girard)	Rare	Resident	USNM	Chaparral
<u>Colubrids (Colubridae)</u>				
Mexican garter snake <i>Thamnophis eques</i> (Reuss)	Common	Resident	USNM	Oak-sycamore and alder-maple riparian near permanent water
Western garter snake <i>Thamnophis elegans</i> (Baird and Girard)	Common	Resident	USNM	Oak-sycamore and alder-maple riparian near water
Sonora whipsnake <i>Masticophis bilineatus</i> Jan.	Rare	Resident	USNM	Chaparral

CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance : :	: Resident : : status : :	: Location of : : museum : : collection :	: Additional notes
Striped whipsnake <i>Masticophis taeniatus</i> (Hallowell)	Common	Resident	USNM	Chaparral
Mountain patch-nosed snake <i>Salvadora grahamiae</i> Baird and Girard	Common	Resident	USNM	Chaparral
Gopher snake <i>Pituophis catenifer</i> (Blainville)	Common	Resident	USNM	Chaparral
Sonora mountain kingsnake <i>Lampropeltis pyromelana</i> (Cope)	Common	Resident	USNM	Pine-fir, ponderosa pine, chaparral
Night snake <i>Hypsiglena torquata</i> Gunther	Rare	Resident	USNM	Chaparral
Mexican black-headed snake <i>Tantilla atriceps</i> (Gunther)	Rare	Resident	USNM	Chaparral
<u>Pit vipers (Crotalidae)</u>				
Black-tailed rattlesnake <i>Crotalus molossus</i> Baird and Girard	Common	Resident	USNM	Pine-fir, ponderosa pine, chaparral
Western rattlesnake <i>Crotalus viridis</i> (Rafinesque)	Common	Resident	USNM	Chaparral
BIRDS:				
<u>American vultures (Cathartidae)</u>				
Turkey vulture <i>Cathartes aura</i> (Linnaeus)	Common	Summer resident	Sight	Pine-fir, ponderosa pine, chaparral, desert grassland; nests in rocky cliffs
<u>Hawks, old-world vultures, and harriers (Accipitridae)</u>				
Goshawk <i>Accipiter gentilis</i> (Linnaeus)	Rare	Transient	Sight	Pine-fir, ponderosa pine
Sharp-shinned hawk <i>Accipiter striatus</i> Vieillot	Rare	Summer resident	Sight	Nests in pine-fir, mainly deep forests
Cooper's hawk <i>Accipiter cooperii</i> (Bonaparte)	Rare	Summer resident	Sight	Nests in oak-sycamore-walnut riparian
Red-tailed hawk <i>Buteo jamaicensis</i> (Gmelin)	Common	Resident	Sight	Breeds in pine-fir, ponderosa pine, chaparral, and desert grassland, in open situations
Swainson's hawk <i>Buteo swainsoni</i> Bonaparte	Rare	Transient	Sight	Pine-fir, ponderosa pine
Zone-tailed hawk <i>Buteo albonotatus</i> Kaup	Rare	Summer resident	Sight	Breeds in pine-fir and ponderosa pine in alder-maple riparian
Golden eagle <i>Aquila chrysaetos</i> (Linnaeus)	Rare	Transient	Sight	--
Bald eagle <i>Haliaeetus leucocephalus</i> (Linnaeus)	Rare	Transient	Sight	--
<u>Caracaras and falcons (Falconidae)</u>				
Peregrine falcon <i>Falco peregrinus</i> Tunstall	Rare	Transient	Sight	--
Sparrow hawk <i>Falco sparverius</i> Linnaeus	Rare	Transient	Sight	--
<u>Quails, pheasants, and peacocks (Phasianidae)</u>				
Gambel's quail <i>Lophortyx gambelii</i> Gambel	Common	Resident	Sight	Chaparral and desert grassland
Harlequin quail <i>Cyrtornyx montezumae</i> (Vigors)	Rare	Resident	Sight	Chaparral; (not recorded in recent years)
<u>Turkeys (Meleagrididae)</u>				
Turkey <i>Meleagris gallopavo</i> Linnaeus	Common	Resident	Sight	Nests in pine-fir and ponderosa pine; winters in chaparral
<u>Pigeons and doves (Columbidae)</u>				
Band-tailed pigeon <i>Columba fasciata</i> Say	Common	Summer resident	Sight	Pine-fir and ponderosa pine; nests located in pine trees
White-winged dove <i>Zenaida asiatica</i> (Linnaeus)	Rare	Summer resident	Sight	Desert grassland
Mourning dove <i>Zenaidura macroura</i> (Linnaeus)	Rare	Summer resident	Sight	Breeds in pine-fir, ponderosa pine, chaparral, and desert grassland

CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance :	: Resident : : status :	: Location of : : museum : : collection :	: Additional notes
<u>Cuckoos, roadrunners, and anis (Cuculidae)</u>				
Roadrunner <i>Geococcyx californianus</i> (Lesson)	Rare	Resident	Sight	Chaparral and desert grassland; nests low in shrubs and cacti
<u>Typical owls (Strigidae)</u>				
Screech owl <i>Otus asio</i> (Linnaeus)	Common	Summer resident	JSW	Breeds in oak-sycamore riparian; nests low to midway in tall trees
Flammulated owl <i>Otus flammeolus</i> (Kaup)	Common	Summer resident	JSW	Breeds in pine-fir and ponderosa pine; prefers concealment in large trees
Great horned owl <i>Bubo virginianus</i> (Gmelin)	Rare	Resident	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
Pygmy owl <i>Glaucidium gnoma</i> Wagler	Rare	Resident	Sight	Pine-fir and ponderosa pine in alder-maple riparian; prefers diurnal and nocturnal concealment in thick foliage
Elf owl <i>Micrathene whitneyi</i> (Cooper)	Rare	Resident	JSW	Chaparral in oak-sycamore riparian; prefers to perch low to midway in small to medium-sized trees
Spotted owl <i>Strix occidentalis</i> (Xantus)	Rare	Resident	Sight	Pine-fir and ponderosa pine; prefers edges of natural openings
<u>Goatsuckers (Caprimulgidae)</u>				
Whip-poor-will <i>Caprimulgus vociferus</i> Wilson	Common	Summer resident	Sight	Pine-fir and ponderosa pine; prefers natural openings and adjacent forest edges
Poor-will <i>Phalaenoptilus nuttallii</i> (Audubon)	Common	Summer resident	JSW	Openings in chaparral; rests on ground
Common nighthawk <i>Chordeiles minor</i> (Forster)	Rare	Transient	Sight	Pine-fir and ponderosa pine
Lesser nighthawk <i>Chordeiles acutipennis</i> (Hermann)	Rare	Resident	Sight	Desert grassland; rests on ground and forages in the air
<u>Swifts (Apodidae)</u>				
White-throated swift <i>Aeronautes saxatalis</i> (Woodhouse)	Common	Summer resident	Sight	Breeds in rocky cliffs in chaparral and desert grassland; forages in the air
<u>Hummingbirds (Trochilidae)</u>				
Black-chinned hummingbird <i>Archilochus alexandri</i> (Bourcier and Mulsant)	Common	Summer resident	JSW	Chaparral in oak-sycamore riparian; prefers to perch in low trees and shrubs; forages over flowers
Broad-tailed hummingbird <i>Selasphorus platycercus</i> (Swainson)	Common	Summer resident	JSW	Pine-fir and ponderosa pine where red or pinkish flowers grow
Rufous hummingbird <i>Selasphorus rufus</i> (Gmelin)	Common	Fall transient	JSW	Pine-fir and ponderosa pine; prefers to forage in clearings and natural openings
Calliope hummingbird <i>Stellula calliope</i> (Gould)	Rare	Fall transient	JSW	Pine-fir around natural openings
Rivoli's hummingbird <i>Eugenes fulgens</i> (Swainson)	Rare	Transient	Sight	Pine-fir
<u>Woodpeckers and wrynecks (Picidae)</u>				
Red-shafted flicker <i>Colaptes cafer</i> (Gmelin)	Common	Resident	Sight	Summers in pine-fir and ponderosa pine; winters in chaparral and desert grassland; forages in any large trees
Acorn woodpecker <i>Melanerpes formicivorus</i> (Swainson)	Common	Resident	Sight	Pine-fir and ponderosa pine; feeds high in conifers
Lewis' woodpecker <i>Asyndesmus lewis</i> (Gray)	Rare	Spring and fall transient	Sight	Pine-fir
Yellow-bellied sapsucker <i>Sphyrapicus varius</i> (Linnaeus)	Common	Spring and fall transient	Sight	Pine-fir and ponderosa pine; feeds low to midway in deciduous trees
Hairy woodpecker <i>Dendrocopos villosus</i> (Linnaeus)	Rare	Resident	JSW	Pine-fir; feeds midway to high in most trees
Downy woodpecker <i>Dendrocopos pubescens</i> (Linnaeus)	Common	Resident	JSW	Breeds in pine-fir in alder-maple riparian; feeds low to midway in most trees
Ladder-backed woodpecker <i>Dendrocopos scalaris</i> Wagler	Rare	Resident	Sight	Desert grassland in oak-sycamore riparian; feeds low in shrubs, agaves, and trees



CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance :	: Resident : : status :	: Location of : : museum : : collection :	Additional notes
<u>Tyrant flycatchers (Tyrannidae)</u>				
Western kingbird <i>Tyrannus verticalis</i> Say	Rare	Summer resident	JSW	Breeds in chaparral in oak-sycamore riparian; prefers to perch high in trees
Cassin's kingbird <i>Tyrannus vociferans</i> Swainson	Rare	Summer resident	JSW	Breeds in chaparral in oak-sycamore riparian; perches midway to high in trees
Ash-throated flycatcher <i>Myiarchus cinerascens</i> (Lawrence)	Common	Summer resident	JSW	Breeds in chaparral and desert grassland in oak-sycamore riparian; feeds from low to midway in trees
Black phoebe <i>Sayornis nigricans</i> (Swainson)	Rare	Resident	Sight	Ponderosa pine in oak-sycamore riparian and desert grassland; feeds from low to over streams
Say's phoebe <i>Sayornis saya</i> (Bonaparte)	Rare	Summer resident	Sight	Open sites in ponderosa pine, chaparral and desert grassland near habitations; feeds from perch low to midway in brush and trees
Dusky flycatcher <i>Empidonax oberholseri</i> Phillips	Rare	Fall transient	JSW	Pine-fir and ponderosa pine; feeds about midway in low trees
Western flycatcher <i>Empidonax difficilis</i> Baird	Rare	Summer resident	Sight	Breeds in pine-fir and ponderosa pine and alder-maple riparian; feeds from midway to high in trees
Coues' flycatcher <i>Contopus pertinax</i> Cabanis and Heine	Rare	Summer resident	Sight	Breeds in pine-fir and ponderosa pine; feeds high in conifers
Western wood pewee <i>Contopus sordidulus</i> Sclater	Common	Summer resident	JSW	Pine-fir and ponderosa pine in oak-sycamore and alder-maple riparian, and in edge of forest clearings; feeds low to midway in trees
Olive-sided flycatcher <i>Nuttallornis borealis</i> (Swainson)	Rare	Summer resident	JSW	Pine-fir and ponderosa pine; feeds from low to high in conifers
<u>Swallows (Hirundinidae)</u>				
Violet-green swallow <i>Tachycineta thalassina</i> (Swainson)	Common	Summer resident	Sight	Pine-fir and ponderosa pine; forages in forest clearings, nests in sycamores
Cliff swallow <i>Petrochelidon pyrrhonota</i> (Vieillot)	Rare	Transient	Sight	Pine-fir and ponderosa pine
Purple martin <i>Progne subis</i> (Linnaeus)	Rare	Transient	Sight	Pine-fir and ponderosa pine
<u>Jays, magpies, and crows (Corvidae)</u>				
Steller's jay <i>Cyanocitta stelleri</i> (Gmelin)	Abundant	Resident	Sight	Pine-fir and ponderosa pine in summer; winters in chaparral
Scrub jay <i>Aphelocoma coerulescens</i> (Bosc)	Common	Resident	JSW	Chaparral; feeds in low trees and bushes
Mexican (Ultramarine) jay <i>Aphelocoma ultramarina</i> (Bonaparte)	Common	Resident	JSW	Ponderosa pine in oak-sycamore and alder-maple riparian; feeds on ground and low in trees
Common raven <i>Corvus corax</i> Linnaeus	Common	Resident	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
Common crow <i>Corvus brachyrhynchos</i> Brehm	Rare	Transient	Sight	Pine-fir and ponderosa pine
<u>Titmice, verdins, and bushtits (Paridae)</u>				
Mountain chickadee <i>Parus gambeli</i> Ridgway	Abundant	Resident	JSW	Pine-fir and ponderosa pine; feeds throughout bushes and trees
Plain titmouse <i>Parus inornatus</i> Gambel	Rare	Resident	JSW	Chaparral; feeds throughout low trees and shrubs
Bridled titmouse <i>Parus wollweberi</i> (Bonaparte)	Common	Resident	Sight	Sycamore-walnut riparian; feeds low to midway in trees
Verdin <i>Auriparus flaviceps</i> (Sundevall)	Rare	Resident	Sight	Desert grassland; feeds in low trees and shrubs
Common bushtit <i>Psaltriparus minimus</i> (Townsend)	Common	Resident	Sight	Chaparral; feeds in low trees and shrubs

CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance :	: Resident : : status :	: Location of : : museum : : collection :	: Additional notes
<u>Nuthatches (Sittidae)</u>				
White-breasted nuthatch <i>Sitta carolinensis</i> Latham	Common	Resident	JSW	Pine-fir and ponderosa pine in oak-sycamore and alder-maple riparian; feeds low to mid-way in trees
Red-breasted nuthatch <i>Sitta canadensis</i> Linnaeus	Rare	Summer resident	JSW	Pine-fir; feeds in tops of tall conifers
Pygmy nuthatch <i>Sitta pygmaea</i> Vigors	Abundant	Summer resident	Sight	Pine-fir and ponderosa pine; feeds throughout conifers
<u> creepers (Certhiidae)</u>				
Down creeper <i>Certhia familiaris</i> Linnaeus	Common	Summer resident	Sight	Pine-fir; feeds throughout conifers
<u>Wrens (Troglodytidae)</u>				
House wren <i>Troglodytes aedon</i> Vieillot	Common	Summer resident	Sight	Pine-fir around openings and clearings; feeds in underbrush and brush piles
Brewer's wren <i>Troglodytes bewickii</i> (Audubon)	Common	Summer resident	Sight	Chaparral in oak-sycamore riparian; feeds in underbrush and brush piles
Chimney wren <i>Atherpes mexicanus</i> (Swainson)	Common	Resident	Sight	Ponderosa pine, chaparral, and desert grassland around canyon walls and cliffs
Rock wren <i>Salpinctes obsoletus</i> (Say)	Common	Summer resident	Sight	Chaparral and desert grassland around rocky hillsides
<u>Mockingbirds and thrashers (Mimidae)</u>				
Mockingbird <i>Mimus polyglottos</i> (Linnaeus)	Rare	Summer resident	Sight	Chaparral and desert grassland
<u>Thrushes, solitaires, and bluebirds (Turdidae)</u>				
Robin <i>Turdus migratorius</i> Linnaeus	Common	Resident	Sight	Pine-fir and ponderosa pine in oak-sycamore and alder-maple riparian, and forest openings
Hermit thrush <i>Hylocichla guttata</i> (Pallas)	Common	Summer resident	JSW	Pine-fir; forages on ground and low in trees and shrubs
Western bluebird <i>Sialia mexicana</i> Swainson	Common	Summer resident	Sight	Pine-fir and ponderosa pine forests; feeds on insects from high in trees near openings
Townsend's solitaire <i>Myadestes townsendi</i> (Audubon)	Common	Spring and fall transient	JSW	Ponderosa pine and chaparral
<u>Wood-world warblers, gnatcatchers, and kinglets (Sylviidae)</u>				
Blue-gray gnatcatcher <i>Polioptila caerulea</i> (Linnaeus)	Common	Summer resident	Sight	Chaparral; feeds from low to midway in low trees
Ruby-crowned kinglet <i>Regulus calendula</i> (Linnaeus)	Common	Winter visitor	JSW	Pine-fir, ponderosa pine, and chaparral; feeds throughout trees and shrubs
<u>Waxwings (Bombycillidae)</u>				
Red-tailed waxwing <i>Bombycilla cedrorum</i> Vieillot	Rare	Fall transient	Sight	Chaparral
<u>Chimney flycatchers (Ptilonotidae)</u>				
Chimney flycatcher <i>Phainopepla nitens</i> (Swainson)	Rare	Resident	Sight	Desert grassland; feeds in the top of low trees and shrubs
<u>Shrikes (Laniidae)</u>				
Loggerhead shrike <i>Lanius ludovicianus</i> Linnaeus	Rare	Summer resident	Sight	Chaparral and desert grassland
<u>Vireos (Vireonidae)</u>				
Hutton's vireo <i>Vireo huttoni</i> Cassin	Common	Summer resident	JSW	Ponderosa pine in oak-sycamore-walnut and alder-maple riparian; feeds throughout deciduous trees
Gray vireo <i>Vireo vicinior</i> Coues	Common	Summer resident	JSW	Chaparral, commonly in pinyon trees; feeds throughout low trees

CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance :	: Resident : : status :	: Location of : : museum : : collection :	: Additional notes
Solitary vireo <i>Vireo solitarius</i> (Wilson)	Common	Summer resident	JSW	Breeds in pine-fir and ponderosa pine feeds from midway to tops of trees
Warbling vireo <i>Vireo gilvus</i> (Vieillot)	Common	Summer resident	Sight	Pine-fir and ponderosa pine
<u>Wood warblers (Parulidae)</u>				
Orange-crowned warbler <i>Vermivora celata</i> (Say)	Common	Spring and fall transient	Sight	Pine-fir; feeds from low to high in and trees
Virginia's warbler <i>Vermivora virginiae</i> (Baird)	Common	Summer resident	JSW	Nests in pine-fir and ponderosa pine
Lucy's warbler <i>Vermivora luciae</i> (Cooper)	Rare	Summer resident	JSW	Ponderosa pine in oak-sycamore riparian
Olive warbler <i>Peucedramus taeniatus</i> (Du Bus)	Rare	Summer resident	Sight	Breeds in pine-fir
Audubon's warbler <i>Dendroica auduboni</i> (Townsend)	Common	Spring and fall transient	Sight	Pine-fir, ponderosa pine, chaparral desert grassland
Black-throated gray warbler <i>Dendroica nigrescens</i> (Townsend)	Common	Summer resident	JSW	Ponderosa pine in oak-sycamore riparian feeds from low to midway in shrubs trees
Townsend's warbler <i>Dendroica townsendi</i> (Townsend)	Common	Spring and fall transient	JSW	Pine-fir
Hermit warbler <i>Dendroica occidentalis</i> (Townsend)	Common	Fall transient	JSW	Pine-fir
Grace's warbler <i>Dendroica graciae</i> Baird	Common	Summer resident	JSW	Ponderosa pine, usually found near middle or top of the conifers
MacGillivray's warbler <i>Oporornis tolmiei</i> (Townsend)	Common	Fall transient	JSW	Pine-fir; feeds in shrubs around forest openings
Red-faced warbler <i>Cardellina rubrifrons</i> (Giraud)	Common	Summer resident	JSW	Pine-fir in alder-maple riparian; feeds throughout conifers
Wilson's warbler <i>Wilsonia pusilla</i> (Wilson)	Common	Spring and fall transient	Sight	Pine-fir and ponderosa pine in alder- maple and oak-sycamore-mistle-toe and near edges of forest openings
Painted redstart <i>Setophaga picta</i> Swainson	Common	Summer resident	JSW	Pine-fir and ponderosa pine in oak-sy- more and alder-maple riparian; feeds low trees and underbrush
<u>Meadowlarks, blackbirds, and orioles (Icteridae)</u>				
Hooded oriole <i>Icterus cucullatus</i> Swainson	Rare	Summer resident	Sight	Ponderosa pine and chaparral in oak- sycamore riparian
Scott's oriole <i>Icterus parisorum</i> Bonaparte	Common	Summer resident	JSW	Chaparral and desert grassland where yuccas occur
Brewer's blackbird <i>Euphagus cyanocephalus</i> (Wagler)	Rare	Spring and fall transient	Sight	Pine-fir in natural openings
Brown-headed cowbird <i>Molothrus ater</i> Boddaert	Rare	Summer resident	Sight	Pine-fir, ponderosa pine, and chaparral in oak-sycamore riparian
<u>Tanagers (Thraupidae)</u>				
Western tanager <i>Piranga ludoviciana</i> (Wilson)	Common	Summer resident	JSW	Pine-fir; feeds midway to high in trees
Hepatic tanager <i>Piranga flava</i> (Vieillot)	Common	Summer resident	JSW	Pine-fir and ponderosa pine; feeds in lower levels of medium-sized pines and Gambel oaks
<u>Grosbeaks, finches, sparrows, and buntings (Fringillidae)</u>				
Cardinal <i>Richmondia cardinalis</i> (Linnaeus)	Rare	Summer resident	Sight	Chaparral and desert grassland
Black-headed grosbeak <i>Pheucticus melanocephalus</i> (Swainson)	Common	Summer resident	Sight	Pine-fir, ponderosa pine, and Gambel oak



CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	Relative abundance	Resident status	Location of museum collection	Additional notes
Blue grosbeak <i>Tyrannus caeruleus</i> (Linnaeus)	Rare	Summer resident	Sight	Ponderosa pine in oak-sycamore riparian
Blue bunting <i>Passerina cyanea</i> (Linnaeus)	Rare	Summer resident	JSW	Pine-fir and ponderosa pine forests in shrubs around forest openings
Blue bunting <i>Passerina amoena</i> (Say)	Common	Summer resident	Sight	Pine-fir and ponderosa pine in shrubs in and around forest openings
Blue-winged grosbeak <i>Myiophobus vespertina</i> (Cooper)	Rare	Summer resident	JSW	Pine-fir forest near forest openings
Cassin's finch <i>Empidonax cassinii</i> Baird	Rare	Transient	JSW	Pine-fir and ponderosa pine; usually observed midway to high in trees
House finch <i>Empidonax mexicanus</i> (Muller)	Common	Resident	Sight	Chaparral and desert grassland
White siskin <i>Spinus pinus</i> (Wilson)	Common	Winter visitor	Sight	Pine-fir forests in and around forest openings
Lesser goldfinch <i>Spinus psaltria</i> (Say)	Common	Summer resident	JSW	Pine-fir and ponderosa pine in oak-sycamore and alder-maple riparian
Red crossbill <i>Loxia curvirostra</i> Linnaeus	Rare	Summer resident	JSW	Pine-fir near forest openings; feeds throughout conifers
Green-tailed towhee <i>Chlorura chlorura</i> (Audubon)	Common	Summer resident	JSW	Pine-fir, ponderosa pine, and chaparral
Worm-sided towhee <i>Pipilo erythrophthalmus</i> (Linnaeus)	Common	Summer resident	Sight	Pine-fir, ponderosa pine, and chaparral where there is dense undergrowth
House towhee <i>Pipilo fuscus</i> Swainson	Common	Resident	JSW	Chaparral and desert grassland; feeds on ground and in low shrubs
Black-throated sparrow <i>Amphispiza bilineata</i> (Cassin)	Common	Summer resident	JSW	Desert grassland where cholla are present
White-crowned junco <i>Junco hyemalis</i> (Linnaeus)	Common	Winter visitor	JSW	Pine-fir, ponderosa pine, and chaparral
Chipping sparrow <i>Spizella passerina</i> (Bechstein)	Common	Summer resident	JSW	Pine-fir and ponderosa pine, usually found around forest openings
Black-chinned sparrow <i>Spizella atrogularis</i> (Cabanis)	Common	Summer resident	JSW	Chaparral in dense cover
White-crowned sparrow <i>Monticola leucophrys</i> (Forster)	Common	Spring and fall transient	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
MAMMALS:				
Bats (Chiroptera)				
Northern brown bat <i>Myotis keeni</i> (Merriam)	Rare	Resident	UA	Pine-fir, ponderosa pine, chaparral, and desert grassland around rocky cliffs
California brown bat <i>Myotis californicus</i> (Audubon and Bachman)	Common	Resident	UA	Chaparral and desert grassland around rocky cliffs
Masked brown bat <i>Myotis subulatus</i> (Say)	Common	Resident	UA	Chaparral and desert grassland around rocky cliffs
Western pipistrelle <i>Pipistrellus hesperus</i> (Allen)	Common	Resident	UA	Chaparral and desert grassland around rocky cliffs
Big brown bat <i>Eptesicus fuscus</i> (Beauvois)	Rare	Resident	UA	Chaparral and desert grassland around rocky cliffs
Pallid bat <i>Antrozous pallidus</i> (Le Conte)	Rare	Resident	UA	Pine-fir, ponderosa pine, and desert grassland around rocky cliffs
Mexican freetail bat <i>Tadarida mexicana</i> (Saussure)	Common	Summer resident	JSW	Chaparral around rocky cliffs
Lagomorphs (Lagomorpha)				
Eastern cottontail <i>Sylvilagus floridanus</i> (Allen)	Common	Resident	UA	Pine-fir, ponderosa pine, and chaparral

CHECKLIST OF VERTEBRATES AND HABITAT RELATIONS  
(continued)

Common and scientific names	: Relative : : abundance :	: Resident : : status :	: Location of : : museum : : collection :	: Additional notes
<u>Rodents (Rodentia)</u>				
Tassel-eared squirrel <i>Sciurus aberti</i> Woodhouse	Common	Resident	UA	Pine-fir and ponderosa pine
Arizona gray squirrel <i>Sciurus arizonensis</i> Coues	Rare	Resident	MVZ UA	Ponderosa pine and chaparral in oak-sycamore riparian
Rock squirrel <i>Citellus variegatus</i> (Erxleben)	Common	Resident	USNM MVZ	Pine-fir, ponderosa pine, chaparral, and desert grassland in rocky terrain
Cliff chipmunk <i>Eutamias dorsalis</i> (Baird)	Common	Resident	USNM MVZ	Pine-fir, ponderosa pine, chaparral, and desert grassland around cliffs and logs
Valley pocket gopher <i>Thomomys bottae</i> (Eydoux and Gervais)	Common	Resident	UA	Pine-fir and ponderosa pine in forest openings
Desert harvest mouse <i>Reithrodontomys megalotis</i> (Baird)	Common	Resident	MVZ UA	Pine-fir and ponderosa pine in natural openings
Deer mouse <i>Peromyscus maniculatus</i> (Wagner)	Common	Resident	UA	Pine-fir and ponderosa pine in forest openings
Brush mouse <i>Peromyscus boylei</i> (Baird)	Abundant	Resident	USNM MVZ UA	Pine-fir, ponderosa pine, and chaparral
White-throated packrat <i>Neotoma albigula</i> Hartley	Common	Resident	USNM MVZ	Favorite habitat in chaparral
Mexican packrat <i>Neotoma mexicana</i> Baird	Common	Resident	MVZ UA	Pine-fir and ponderosa pine
Mexican vole <i>Microtus mexicanus</i> (Saussure)	Rare	Resident	MVZ	Pine-fir and ponderosa pine in natural openings of dense grass
Porcupine <i>Erethizon dorsatum</i> (Linnaeus)	Rare	Resident	Sight	Pine-fir and ponderosa pine
<u>Flesh-eaters (Carnivora)</u>				
Coyote <i>Canis latrans</i> Say	Rare	Resident	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
Gray fox <i>Urocyon cinereoargenteus</i> (Schreber)	Rare	Resident	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
Black bear <i>Ursus americanus</i> Pallas	Common	Resident	Sight	Pine-fir, ponderosa pine, and chaparral
Ringtail <i>Bassariscus astutus</i> (Lichtenstein)	Rare	Resident	Sight	Chaparral and desert grassland
Raccoon <i>Procyon lotor</i> (Linnaeus)	Rare	Resident	Sight	Pine-fir and ponderosa pine in alder-maple and oak-sycamore riparian
Common striped skunk <i>Mephitis mephitis</i> (Schreber)	Common	Resident	Sight	Ponderosa pine and chaparral
Western rooster skunk <i>Conepatus mesoleucus</i> (Lichtenstein)	Rare	Resident	Sight	Chaparral
Mountain lion <i>Felis concolor</i> Linnaeus	Rare	Resident	Sight	Pine-fir and ponderosa pine
Bobcat <i>Lynx rufus</i> (Schreber)	Rare	Resident	Sight	Pine-fir, ponderosa pine, chaparral, and desert grassland
<u>Even-toed ungulates (Artiodactyla)</u>				
Collared peccary <i>Tayassu tajacu</i> (Linnaeus)	Common	Resident	Sight	Chaparral and desert grassland
Elk <i>Cervus canadensis</i> Erxleben	Rare	Resident	Sight	Pine-fir and ponderosa pine
Whitetail deer <i>Odocoileus virginianus</i> (Zimmermann)	Common	Resident	Sight	Pine-fir, ponderosa pine, and chaparral
Mule deer <i>Odocoileus hemionus</i> (Rafinesque)	Rare	Resident	Sight	Pine-fir and ponderosa pine



Reynolds, Hudson G., and Johnson, R. Roy.

1964. Habitat relations of vertebrates of the Sierra Ancha Experimental Forest. U. S. Forest Serv. Res. Paper RM-4, 16 pp., illus. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Describes the Experimental Forest in general terms, characterizes the more important vertebrate habitats, and presents a checklist of vertebrates together with notes as to their relative abundance, seasonal occurrence, and macro- and microhabitats. Includes 125 birds, 33 mammals, 24 reptiles, 3 amphibians, and 2 fish.

Reynolds, Hudson G., and Johnson, R. Roy.

1964. Habitat relations of vertebrates of the Sierra Ancha Experimental Forest. U. S. Forest Serv. Res. Paper RM-4, 16 pp., illus. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Describes the Experimental Forest in general terms, characterizes the more important vertebrate habitats, and presents a checklist of vertebrates together with notes as to their relative abundance, seasonal occurrence, and macro- and microhabitats. Includes 125 birds, 33 mammals, 24 reptiles, 3 amphibians, and 2 fish.

Reynolds, Hudson G., and Johnson, R. Roy.

1964. Habitat relations of vertebrates of the Sierra Ancha Experimental Forest. U. S. Forest Serv. Res. Paper RM-4, 16 pp., illus. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Describes the Experimental Forest in general terms, characterizes the more important vertebrate habitats, and presents a checklist of vertebrates together with notes as to their relative abundance, seasonal occurrence, and macro- and microhabitats. Includes 125 birds, 33 mammals, 24 reptiles, 3 amphibians, and 2 fish.

Reynolds, Hudson G., and Johnson, R. Roy.

1964. Habitat relations of vertebrates of the Sierra Ancha Experimental Forest. U. S. Forest Serv. Res. Paper RM-4, 16 pp., illus. Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado.

Describes the Experimental Forest in general terms, characterizes the more important vertebrate habitats, and presents a checklist of vertebrates together with notes as to their relative abundance, seasonal occurrence, and macro- and microhabitats. Includes 125 birds, 33 mammals, 24 reptiles, 3 amphibians, and 2 fish.

