

VEGETATION SURVEY OF THE WILDERNESS RANGER

DISTRICT, GILA NATIONAL FOREST, NEW MEXICO

Summer 1972

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and

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INTRODUCTION

The Gila Wilderness is an area of 430,680 acres located about 40 miles north of Silver City, New Mexico. There are 30 permanent streams having a combined length of 196 miles. Ninety per cent of these flow directly into the Gila drainage and 10% flow into the San Francisco drainage (which ultimately flows into the Gila, of course). There are 199 springs. In elevation, the wilderness extends from 4,880' at the mouth of Turkey Creek to 10,895' on Whitewater Baldy. The main Mogollon massif (which we shall call "the crest") has at least 17 peaks higher than 10,000'. The western slope (mostly within the Glenwood Ranger District) of the mountain massif is very steep, having very deep canyons, many over 1,000' deep. The eastern slope (which comprises the Wilderness Ranger District) is much more gentle. There are broad flat mesas, gently dissected by streams flowing eastward (information provided by the Gila National Forest Supervisor's Office).

Trapping data from previous traps on the main Gila River (upstream from Turkey Creek) has been incorporated into this report when it was applicable. Time and logistics made it impractical for us to work the whole Gila Wilderness this summer. The Western slope of the Mogollons was ignored and the Main Gila drainage south of the Cliff Dwellings was poorly sampled. We hope to be able to work in these areas at a future time. This report is a partial summary of a total project involving the whole Gila drainage in New Mexico. Data are being collected over a period of years for this enlarged report.

We wish to thank the U.S. Forest Service for their excellent cooperation in this research project. Tom Bickle and Ray Swigert were very helpful in making the preparations for this venture. Gus McCutcheon and Jack Carter were very helpful in the every day mechanics of supply and implementation. The Sierra Club contributed \$250 toward expenses and the Wilderness Society contributed another \$150 for the completion of this project. The remaining cost of the project was born by the senior author. Some equipment was furnished by Western New Mexico University. The 500+ mammal specimens are stored in the Biology Department at WNMU.

ITINERY

- 3 -

- 31 May.....Gila Center to Little Creek Cabin
- 1 to 7 June....Little Creek Cabin
- 8 June.....Little Creek Cabin to McKenna Spring
- 9 to 11 June...McKenna Spring
- 12 June.....McKenna Spring to White Creek Cabin
- 13 and 14 June.White Creek Cabin
- 15 June.....White Creek Cabin to Lilly Spring
- 16 and 17 June.Lilly Park Spring
- 18 June.....Lilly Park Spring to Woodland Park Tank
- 19 June.....Woodland Park Tank
- 20 June.....Woodland Park Tank to Prior Cabin
- 21 June.....Prior Cabin
- 22 June.....Prior Cabin to Trotter Place
- 23 June.....Trotter Place to Gilita Creek
- 24 June.....Gilita Creek to Iron Creek
- 25 June.....Iron Creek
- 26 June.....Iron Creek to Iron Creek Mesa Lake
- 27 June.....Iron Creek Mesa Lake to Hummingbird Saddle
- 28 June.....Hummingbird Saddle to Apache Cabin
- 29 and 30 June.Apache Cabin
- 1 July.....Apache Cabin to Mogollon Baldy
- 2 and 3 July...Mogollon Baldy
- 4 July.....Mogollon Baldy to Snow Park
- 5 July.....Snow Park
- 6 July.....Snow Park to White Creek Cabin
- 7 to 10 July...White Creek Cabin

ITINERY-continued

- 4 -

- 11 July.....White Creek Cabin to Middle White Creek
- 12 July.....Middle White Creek
- 13 July.....Middle White Creek to Half-moon Park
- 14 and 15 July.....Half-moon Park
- 16 July.....Half-moon Park to West Fork Corral
- 17 July.....West Fork Corral
- 18 July.....West Fork Corral to Marss Spring
- 19 July.....Marss Spring
- 20 July.....Marss Spring to Prior Cabin
- 21 July.....Prior Cabin to mouth of Clear Creek
- 22 July.....mouth Of Clear Creek to the Meadows
- 23 July.....The Meadows
- 24 July.....The Meadows to $\frac{1}{2}$ mile above mouth of Jordan Canyon
- 25 July..... $\frac{1}{2}$ mile above mouth of Jordan Canyon to Gila Center

- 2 August..... Gila Center to Little Creek Cabin
- 3 August.....Little Creek Cabin to McKenna Park Airstrip
- 4 August.....McKenna Park Airstrip
- 5 August.....McKenna ParkAirstrip to Rawmeat Canyon
- 6 August.....Rawmeat Canyon
- 7 August.....Rawmeat Canyon to Kemp Place, NogollonCreek
- 8 August.....Kemp Place
- 9 August.....Kemp Place to mouth Turnbo Canyon, Nogollon Creek
- 10 August.....Mouth Turnbo Canyon to mouth Sycamore Creek on Turkey Creek
- 11 August.....Turkey Creek from mouth of Sycamore Creek to mouth Manzanita Cr.
- 12 August.....Mouth Manzanita Creek to Miller Spring
- 13 August.....Miller Spring to Little Turkey Park
- 14 August.....Little Turkey Park
- 15 August.....Little Turkey Park to Gila Center

Table 2.

Tetrapod List for the Gila Wilderness

- 5 -

The use of common names in a report such as this is not practical in most cases--birds being a possible exception. Common names are padantic, variable and frequently meaningless. At other times, they are slight modifications of scientific names. But there are people who have trouble coping with this problem. For these, this list is included to allow them to distinguish a name as a bat, lizard, mouse or snake.

AMPHIBIANS

<u>Ambystoma tigrinum</u>	Tiger Salamander
<u>Scaphiopus</u> sp.	Spadefoot
<u>Bufo woodhousei</u>	Woodhouse Toad
<u>Bufo microscaphus</u>	Southwestern Toad
<u>Bufo punctatus</u>	Red-spotted Toad
<u>Hyla wrightorum</u>	Arizona Tree Frog
<u>Hyla arenicolor</u>	Canyon Tree Frog
<u>Pseudacris triseriata</u>	Swamp Cricket Frog
<u>Rana catesbiana</u>	Bullfrog
<u>Rana pipiens</u>	Leopard Frog

REPTILES

<u>Kinosternon sonoriense</u>	Sonoran Mud Turtle
<u>Terrapene ornata</u>	Western Box Turtle
<u>Crotaphytus collaris</u>	Collared Lizard, Mountain Boomer
<u>Sceloporus undulatus</u>	Eastern Fence Lizard
<u>Sceloporus clarki</u>	Sonora Spiny Lizard
<u>Sceloporus poinsettii</u>	Rock Crevise Spiny Lizard
<u>Brosaurus ornatus</u>	Tree Lizard
<u>Phrynosoma douglasii</u>	Short-horned Lizard
<u>Cnemidophorus</u> sp.	Whiptail Lizard
<u>Thamnophis cyrtopsis</u>	Black-necked Garter Snake
<u>Thamnophis marciatus</u>	Checkered Garter Snake
<u>Thamnophis elegans</u>	Western Garter Snake
<u>Hasticophis taeniatus</u>	Striped Whipsnake
<u>Diadophis punctatus</u>	Ringneck Snake
<u>Pituophis melanoleucus</u>	Bull Snake, Gopher Snake
<u>Lampropeltis pyromelana</u>	Sonora Mountain King Snake
<u>Micruroides euryxanthus</u>	Arizona Coral Snake
<u>Crotalus molossus</u>	Black-tailed Rattlesnake, Timber Rattler
<u>Crotalus viridis</u>	Western Rattlesnake
<u>Crotalus lepidus</u>	Rock Rattlesnake

MAMMALS

<u>Sorex vagrans</u>	Wandering Shrew
<u>Myotis evotis</u>	Long-eared Myotis
<u>Myotis auriculus</u>	Mexican Long-eared Myotis
<u>Myotis thysanodes</u>	Fringe-tailed Myotis
<u>Myotis volans</u>	Long-legged Myotis
<u>Myotis californicus</u>	California Myotis
<u>Myotis leibii</u>	Small-footed Myotis
<u>Eptesicus fuscus</u>	Big Brown Bat
<u>Lasiurus cinereus</u>	Hoary Bat
<u>Lasionycteris noctivagans</u>	Silver-haired Bat
<u>Plecotus townsendii</u>	Lump-nosed Bat
<u>Plecotus phyllotis</u>	Big-eared Bat

<i>Myotis grisescens</i>	Spotted Bat
<i>Tadarida brasiliensis</i>	Guano Bat, Mexican Free-tailed Bat
<i>Lepus californicus</i>	Black-tailed Jackrabbit
<i>Sylvilagus auduboni</i>	Desert Cottontail
<i>Sylvilagus floridanus</i>	Eastern Cottontail
<i>Sciurus aberti</i>	Tassel-eared Squirrel
<i>Sciurus arizonensis</i>	Arizona Gray Squirrel
<i>Tamiasciurus hudsonicus</i>	Chickaree, Spruce Squirrel
<i>Spermophilus variegatus</i>	Rock Squirrel
<i>Spermophilus lateralis</i>	Golden-mantle Ground Squirrel
<i>Eutamias cinereicollis</i>	Gray-necked Chipmunk
<i>Eutamias dorsalis</i>	Cliff Chipmunk
<i>Thomomys bottae</i>	Valley Pocket Gopher
<i>Perognathus flavus</i>	Silky Pocket Mouse
<i>Dipodomys ordii</i>	Ord Kangaroo Rat
<i>Reithrodontomys megalotis</i>	Western Harvest Mouse
<i>Onychomys torridus</i>	Southern Grasshopper Mouse
<i>Peromyscus maniculatus</i>	Deer Mouse
<i>Peromyscus leucopus</i>	White-footed Mouse
<i>Peromyscus boylii</i>	Brush Mouse
<i>Peromyscus truei</i>	Pinyon Mouse
<i>Peromyscus difficilis</i>	Rock Mouse
<i>Neotoma albigula</i>	White-throated Wood Rat
<i>Neotoma mexicana</i>	Mexican Wood Rat, Mexican Pack Rat
<i>Clethrionomys rupperi</i>	Red-backed Mouse
<i>Ondatra zibethica</i>	Muskrat
<i>Microtus longicaudus</i>	Long-tailed Vole
<i>Microtus mexicanus</i>	Mexican Vole
<i>Erethizon dorsatum</i>	Porcupine
<i>Canis latrans</i>	Coyote
<i>Urocyon cinereoargenteus</i>	Gray Fox
<i>Ursus americanus</i>	Black Bear
<i>Procyon lotor</i>	Raccoon
<i>Eassariscus astutus</i>	Cacomistle, Ring-tail
<i>Mephitis mephitis</i>	Striped Skunk
<i>Conepatus mesoleucus</i>	Hog-nosed Skunk
<i>Lynx rufus</i>	Bobcat
<i>Pecari tajacu</i>	Peccary, Javelina
<i>Odocoileus hemionus</i>	Mule Deer
<i>Odocoileus virginianus</i>	White-tailed Deer, Rock Deer
<i>Cervus canadensis</i>	Elk

We have divided the vegetation zones into categories which might reflect zoogeographic or ecological differences. Acreages are included whenever the data were available. These classifications do not agree exactly with the Forest Service classifications, so that approximate figures must be used. A habitat classification for mammals must be more detailed than one for birds. Likewise a range management classification may be different than one designed for reptiles. The classification we have employed works best for mammals, since that is the principal emphasis of this study.

The data are presented as we found them to be. Some of the interpretations are merely impressions. Surely many persons may differ with us concerning our interpretations. Often, we did not have enough time to survey the areas adequately. Additional research or observation may change our ideas in the future. We welcome comments and observations for inclusion in the much more detailed final report to be completed in future years.

Each category starts with the elevational limitations that we observed during the summer. The acreages given are those provided by the supervisor's office of the Gila National Forest. Vegetation description is divided into three parts: dominant trees, understorey trees (which may vary depending on slope), and forbs. This latter category has two parts. The most abundant species are listed and then a list of plants that we identified is included following this. No attempt is made to show abundance in this latter section. While this list is not complete, it is meant to be an aid to others. We feel that a competent botanical survey is highly desirable in the future years. Kearney & Peebles (1951) was used as the authority for plant names.

Mammals are listed by their abundance: A=abundant, occurring almost everywhere; C=common, they are encountered quite often; U=uncommon, they are to be expected on a regular basis, but are not found in large numbers; O=occasional, their occurrence here is unusual; R=rare, they really ought not to be here. Rodents tend to be restricted to vegetation zones because of their size and mobility. Larger species such as bears, deer, elk, coyotes tend to occur over a wide area, overlapping many zones. And their numbers are usually small. Bats, because of their flight, are not restricted to zones generally. Their distribution appears to be based largely on elevation and location of water. Since there are no caves of any significance (which bats would occupy, at least), the species found here roost in trees, in holes in trees or under rocks. Any cave-dwelling species will be transitory. On the western side of the Mogollon massif, there are abandoned mines, so we expect some additional species to be found there.

The birds listed should be regarded as summer residents in the Gila Wilderness. No attempt is made to record transients or migrants. Bird censuses were completed for most of the localities. But they were conducted under varying conditions and so it is hard to make direct comparisons. Henceforth we are listing birds in five categories--the most abundant species, given in order of decreasing abundance; common species expected here; uncommon, seen regularly but not commonly (equals casual of Hubbard); occasional species that move through in migration or occur on the ecotons of another zone; rare, bird records of note are sent into an ornithological society. The presence of an asterisk indicates that we found a nest of this species in this particular habitat. The total number of individuals seen in each zone was recorded on a work sheet, and this gave us an indication of overall abundance. Probably we should have recorded groups or flocks instead of individuals for it is possible that a flock (of nutcrackers for example) could skew the figures. But we don't have these data and hence the list must necessarily be subjective. In future years this would be nice information to have. For a more complete discussion of birds at the higher elevation see Hubbard's (1965) paper.

We spent relatively little time chasing reptiles and amphibians because there were so many other things to do. Thus, the species recorded are those that we essentially "tripped over". A competent herpetologist could enlarge this list greatly.

PINYON-JUNIPER WOODLAND

Elevational Limits: 4,800' - 6,500'

150,000 acres

This type of vegetation is found on dry, south-facing slopes at the lower elevations. We did not sample many areas where this vegetation is found. Dominant plants are Pinus edulis, Quercus grisea, Juniperus deppeana, Cercocarpus montanus. The understory contains varying amounts of Nolina microcarpa, Dasylirion wheeleri, Carya wrightii, Agave parryi, and Arctostaphylos (in a few areas only). Species of Opuntia, Echinocereus and Mammillaria may be found here as well.

Mammals:

<u>Myotis leibii</u> - C	<u>Plecotus townsendii</u> - O
<u>Lasionycteris noctivagans</u> - U	<u>Tadarida brasiliensis</u> - O migratory only
<u>Lasiurus cinereus</u> - U migratory	<u>Lepus californicus</u> - O
<u>Sylvilagus auduboni</u> - U	<u>Eutamias dorsalis</u> - C
<u>Spermophilus variegatus</u> - C	
<u>Peromyscus boylii</u> - A the most abundant mammal in this zone	
<u>Neotoma albigula</u> - C	
<u>Onychomys leucogaster</u> - C	<u>Mephitis mephitis</u> - U
<u>Onychomys leucogaster</u> - U	<u>Onychomys leucogaster</u> - C

More work in this zone will surely enlarge this species list.

Birds: 13 species noted

Abundant species: Mexican Jay, Scrub Jay, Ladder-backed Woodpecker.
Common species: Red-shafted Flicker, Plain Titmouse, Bush-tit, White-breasted Nuthatch, Black-throated Gray Warbler, Hairy Woodpecker, Brown Towhee, Foxgill, House Finch, Gambel Quail, Ash-throated Flycatcher, Say Phoebe, Mourning Dove
Uncommon species: Rufous-sided Towhee, Bridled Titmouse, Turkey Vulture, Canyon Wren.

Reptiles:

Sceloporus poinsettii is very common on rocky slopes. Urosaurus ornatus which is common at nearly every elevation in the Wilderness, is very common. Crotalus molossus and Thamnophis cyrtopsis are common snakes.

Amphibians:

Rana arenicolor is often seen near stock tanks. Scaphiopus sp. after the rainy season starts. Bufo woodhousei along the rivers Ambystoma tigrinum in cattle tanks.

PINE-OAK WOODLAND

Elevational Limits: 6,900' - 8,100'

This is a relatively open vegetation type. The trees are widely spaced and there is frequently a grass understory. This zone is very well developed in Mexico but is not so prominent at this latitude. It usually occurs on north-facing slopes of the low mountains...particularly the Jerky Mountains. The dominant pine of course, is Pinus ponderosa. In moist areas Quercus gambeli is the common co-dominant. In drier locales this species is replaced by Q. hypoleucoides and Q. grisea. Understory species are Pseudotsuga menziesii, Robinia neomexicana, Vitis arizonica and occasionally Quercus emoryi.

Forbs:

<u>Monotropa latisquama</u>	<u>Mimulus</u> sp.
<u>Carex</u> sp.	<u>Geranium</u> sp.
<u>Gilia aggregata</u>	<u>Coryphantha</u> sp.
<u>Rubus parviflorus</u>	<u>Castilleja</u> sp.
<u>Arnica montana</u>	<u>Argemone</u> sp.

Mammals:

Myotis thysanodes - O
Myotis evotis - A
Eptesicus fuscus - A
Tamiasciurus hudsonicus - U
Spermophilus lateralis - U This species tends to be near clearings.
Peromyscus boylii - A
Peromyscus truei - C
Peromyscus leucopus ?
Neotoma mexicana - C
Microtus mexicanus - O only in wet areas along the edge of streams.
Canis latrans - U
Ursus americanus - U
Odocoileus virginianus - O
Cervus canadensis - O wherever the canopy is open.

Myotis auricularis - U
Myotis volans - A
Sylvilagus sp. - U
Eutamias cin ereicollis - C
Peromyscus maniculatus - A
Mephitis mephitis - U
Odocoileus hemionus - U

Birds: 31 species seen

Abundant species: *Western Bluebird, Steller Jay
Common species: Bush-tit, Gray-headed Junco, Acorn Woodpecker, Red-shafted Flicker, Mountain Chickadee, Brown Creeper, Hairy Woodpecker, Pygmy Nuthatch, Rufous-sided Towhee.
Uncommon species: Band-tailed Pigeon, Blue-gray Gnatcatcher, Scrub Jay, Black-throated Gray Warbler, Common Raven, Red-faced Warbler, Virginia Warbler, Audubon Warbler, Broad-tailed Hummingbird, Robin, Hermit Thrush, Red Crossbill, White-breasted Nuthatch.
Occasional species: Wood Pewee, Solitary Vireo, House Wren, Western Flycatcher, Poor-will, Whip-poor-will, Red-tailed Hawk.

Reptiles: Phrynosoma douglassii

Amphibians: None observed

PONDEROSA PINE FOREST

Elevational limits: 5,800' - 9,000' 200,000 acres

This habitat tends to be a sterile environment (perhaps THE most sterile) except where there are pools and streams of water. We spent a lot of time in ponderosa pine and found that the woods tended to be silent much of the time, the ground cover relatively sparse and few mammals wandered into our traps. The dominant tree species is Pinus ponderosa and this occurs in pure stands in most places. On a few exposed ridges there are groves of P. leiophylla. The understory consists of: Quercus gambeli (moist slopes), Q. hypoleucoides (on dry slopes), Juniperus scopulorum, Prunus virginica, small Pseudotsuga.

Flora: (in order of decreasing abundance)

Pteridium aquilinum, Muhlenbergia (M. rigens most commonly), Haplopappus gracilis, Erigeron sp., Senecio sp.
Common species include: Dasylirion, Haplopappus lericifolius, Opuntia (of several species), Gilia aggregata, Erysimum, Argemone, Lotus wrightii, Ceranium sp., Lithospermum cobriense.

Mammals:

The bats listed here will also be those found in any ponderosa pine association. This is apparently the preferred habitat of Euderma maculata, since they seem to be caught over large bodies of water in ponderosa pine forests.
Eptesicus fuscus - A (abundance seems related to nearest roost, possibly dead ponderosas)
Lasiurus noctivagans - C
Lasiurus cinereus - C

Myotis californicus - C

Myotis leibii - C

Myotis volans - A

Tamiasciurus hudsonicus - O

Eutamias cinereicollis - C

Thomomys bottae - C (in the moist areas where the soil is sandy)

Peromyscus boylii - U

Neotoma mexicana - C

Canis latrans - U

Odocoileus hemionus - C

Odocoileus virginianus - O

Passeriscus astutus - R

Cervus canadensis - C (especially in open areas)

Myotis evotis - A

Myotis thysanodes - U

Plecotus phyllotis - C

Sciurus aberti - C

Spermophilus lateralis - U (more common in open areas)

Peromyscus maniculatus - A

Sylvilagus floridanus - U

Ursus americanus - C

Felis concolor - U

Lynx rufus - U

Birds: 40 species were observed in the habitat.

Most abundant species: Pygmy Nuthatch, Steller Jay, Violet-green Swallow, Gray-headed Junco, and Robin

Common species: Red-shafted Flicker, *Western Bluebird, Mountain Chickadee, Turkey Audubon Warbler, Broad-tailed Hummingbird, *Mourning Dove, Acorn Woodpecker, Hairy Woodpecker, White-throated Swift, Western Flycatcher, Western Tanager, Common Raven, White-breasted Nuthatch, Red-faced Warbler, Common Nighthawk, Wood Pewee, Solitary Vireo, Hermit Thrush, Brown Creeper.

Uncommon species: Black-chinned Hummingbird, Rufous-sided Towhee, House Wren, Plain Titmouse, Sparrow Hawk, Red-tailed Hawk, Band-tailed Pigeon, Pinyon Jay, Townsend Solitaire, Painted Redstart.

Occasional species: Mallard, Turkey, Vulture, Great Horned Owl, Poor-will, Warbling Vireo.

Reptiles: Dipsosaurus ornata

Phrynosoma douglasii

Amphibians: None noted

DOUGLAS FIR FOREST

Elevational Limits: 8,500' - 10,000'

49,000 acres

This forest is less distinct than the previous classification. It does not occur in pure form to the extent that others do. Because of its location in the Gila Forest, it is heavily dissected by the headwater streams of the Gila drainages. The dominant tree is Pseudotsuga menziesii with Pinus flexilis and Abies concolor being tall but less frequent species. The understory consists of small Quercus gambeli, Ribes cereum, Fernus emarginata, Holodiscus dumosa, Sambucus neomexicanus, Lonicera involucrata, and Lonicera involucrata.

Forbs:

Pteridium aquilinum

Thalictrum fendleri

Pseudocymopterus montanum

Geranium sp.

Hortensia franciscana

Viola canadensis

Corralorhiza maculata

Fragaria ovalis

Gilia aggregata

Penstemon barbatus

Mammals: Most of the mammals found here occur also in the ponderosa pine forest. However, many of the lower elevation forms are absent.

Myotis evotis - C

Tamiasciurus hudsonicus - A

Peromyscus maniculatus - A

Neotoma mexicana - C

Odocoileus hemionus - U

Sorex vagrans - C

Lasiurus noctivagus - C

Plecotus phyllotis - U

Myotis volans - U

Sylvilagus floridanus - U

Eutamias cinereicollis - A

Microtus longicaudus - C

Cervus canadensis - U

Birds: Our data here are sparse.

Abundant species: Pygmy Nuthatch, Ruby-crowned Kinglet, Hermit Thrush, Gray-headed Junco

Common species: Red-shafted Flicker, Robin, Brown Creeper, Turkey, Steller Jay, Clark Nutcracker, Red-faced Warbler, Red Crossbill

Uncommon species: Broad-tailed Hummingbird, White-breasted Nuthatch, Hairy Woodpecker, Acorn Woodpecker, Northern Three-toed Woodpecker, Goshawk, Yellow-bellied Sapsucker, Downy Woodpecker

Reptiles and Amphibians: None observed.

SPRUCE FOREST

Elevational Limits: 9,500' - 10,800'

This covers a small part of the Gila Wilderness, occurring only along the crest of the Mogollon massif. The dominant tree is Picea engelmannii, P. pungens tends to occur in the more moist canyons. Abies lasiocarpa occurs in smaller amounts throughout this zone. The understory is absent in dense stands, but in more open areas Sorbus dumosa, Ribes pinetorum, Lonicera utahensis, Vaccinium oreophilum occur in small numbers.

Forbs:

Veratrum californicum
Acronitum columbiana
Gilia aggregata

Penstemon barbatus
Linum lewisii

Mammals: Bats are scarce at high elevations and although we trapped in several areas only Myotis evotis was captured. This may be due to lack of permanent water and to the cold evenings, even in mid-summer thus keeping the insect population low.

Tamiasciurus hudsonicus - C
Spizella socialis - C
Neotoma mexicana - C
Citellus grammurus - U
Odocoileus hemionus - U
Eutamias cinereicollis - C

Peromyscus maniculatus - A
Microtus longicaudus - A
Sylvilagus floridanus - U
Canis latrans - U
Cervus canadensis - U

Birds: 29 species observed.

Abundant species: Pine Siskin, Ruby-crowned Kinglet

Common species: Blue Grouse, Gray-headed Junco, Band-tailed Pigeon, Mountain Chickadee, Violet-green Swallow, White-throated Swift, Clark Nutcracker, Audubon Warbler, Broad-tailed Hummingbird, Common Raven, Hairy Woodpecker, Robin, *Hermit Thrush, Green-tailed Towhee

Uncommon species: Golden-crowned Kinglet, Red Crossbill, Turkey Vulture, Turkey, Red-breasted Nuthatch, Williamson Sapsucker, Warbling Vireo, Orange-crowned Warbler, Red-tailed Hawk, Common Nighthawk, Red-shafted Flicker, Northern Three-toed Woodpecker, Yellow-bellied Sapsucker, House Wren, Red-faced Warbler.

Reptiles: Phrynosoma douglassi

Urosaurus ornatus

Amphibians: None observed

QUAKING ASPEN FOREST

Elevational Limits: 9,500' - 10,800'

5,000 acres

The higher peaks of the Mogollons have large, relatively pure stands of Populus tremuloides. The stands are usually very dense and have relatively few tetrapods because of their "open canopy" and their high elevation. The understory has, other than more quaking aspen, small douglas fir.

Forbs:

Pteridium aquilinum
Geranium sp.
Castilleja sp.

Aquilegia triternata
Ligusticum porteri
Penstemon barbatus

Mammals: Bats do not get up this high very often. On occasion Myotis evotis will be found here.

Eutamias cinereicollis - C
Spermophilus lateralis - C
Thomomys bottae - U
Peromyscus maniculatus - C
Neotoma mexicana - U

Microtus longicaudus - A
Cervus canadensis - U
Ursus americana - U
Odocoileus hemionus - U

Birds: We did not make any separate bird list for this locality. The birds will be those of the spruce forest of the upper douglas fir forest.

Reptiles and Amphibians: None observed.

PARKS AND GRASSY OPENINGS IN THE FOREST

Elevational Limits: 7,300' - 10,500'

Approx. 1,000 acres

There are at least a dozen open areas in the wilderness at varying elevations. This includes such areas as Snow Park, Woodland Park, McKenna Park Airstrip and many of the canyons draining the Jerky Mountains toward the Middle Fork of the Gila. The diversity of species found in this habitat is due to the "edge effect" which is present here. A great many of the species recorded here are those typically found in the adjacent forest. The dominant trees are the same as those for the surrounding areas. There is no understory unless it consists of tree species invading the edges of the open areas.

Forbs: The most commonly found forbs are:

Pteridium aquilinum
Muhlenbergia rigens
Iris missouriensis (in wet areas)
Common species identified were:

Potentilla concinna
Erigeron sp.
Castilleja sp.
Agastache pallidiflora
Astragalus (several species)
Swertia radiata
Erysimum sp.
Senecio willcoxii
Occasional species:
Anthericum torreyi
Silene lacinata
Calochortis gunnisoni

Geranium sp.
Achillea lanulosa
Helianthella quinquenervia
Monarda menthaefolia
Cirsium sp.
Gilia aggregata
Mertensia franciscana
Sphaeralcea sp.

Nemastylis tenuis
Veratrum californicum
Lindera dubia

Mammals: Many of the mammals found here are found in the ecotones. A (+) indicates that the species is found in the grassy centers of these open areas. No bats are listed for this habitat. They will be those found in surrounding forests.

- Sorex vagrans - U
Sylvilagus floridanus - U
Sciurus aberti - U
Tamiasciurus hudsonicus - U
Spermophilus lateralis - C
+ Thomomys bottae - A
+ Peromyscus maniculatus - A
Peromyscus boylii - O (low elevation)
Peromyscus truei - O
Neotoma mexicana - C
+ Microtus mexicanus - C (low elevation)
- + Microtus longicaudus - A (high elevation)
Canis latrans - U
Cervus canadensis - C
Odocoileus hemionus - C
Odocoileus virginianus

Birds: 47 species were observed in this habitat. Most of the species were observed in the ecotones.

Abundant species: *Violet-green Swallow, Gray-headed Junco, *Western Bluebird, *House Wren

Common species: Pygmy Nuthatch, Red-shafted Flicker, Audubon Warbler, Steller Jay, Hairy Woodpecker, Mourning Dove, *Robin, Mountain Chickadee, Common Raven, Chipping Sparrow, *Purple Martin, Western Flycatcher, *Hermit Thrush, White-breasted Nuthatch, Acorn Woodpecker, Say Phoebe

Uncommon species: Band-tailed Pigeon, Broad-tailed Hummingbird, Pine Siskin, Western Wood Pewee, Mountain Bluebird, Grace Warbler, Common Nighthawk, Cooper Hawk, Solitary Vireo, Green-tailed Towhee, Western Tanager, Red-tailed Hawk, *Sparrow Hawk, Painted Redstart, Red Crossbill

Occasional species: Lark Bunting, Lark Sparrow, Golden-crowned Kinglet, Ruby-crowned Kinglet, Common Goldfinch, Whip-poor-will, White-throated Swift, Water Pipit, Turkey Vulture, Williamson Sapsucker, Western Kingbird, Brown-headed Cowbird.

Reptiles: Phrynosoma douglassi

Amphibians: Ambystoma tigrinum (in tanks)
Hyla wrightorum
Hyla arenicolor
Pseudacris triseriata

RIPARIAN FORESTS

Most of the larger streams have distinct forests along their margins. Some sources refer to these as gallery forests, although this is not accurate, for gallery forests are recognized as occurring only in grassland or desert areas. The vegetation along major streams in the Gila Wilderness will be generally those trees characteristic of the next highest zone, due on part to the greater amount of water and the colder temperatures which tend to flow down these canyons. There are two subdivisions of riparian forest and these could logically be subdivided further. At lower elevations is the deciduous broad-leaved riparian forest. This gradually shades into the coniferous riparian forest. At lower elevation where the canyons are wide, you find riverine forest growing along the water edge and bench vegetation (usually coniferous) higher up above the stream channel on the flat valley level. From a zoogeographic point of view it is practical to refer to two subdivisions--deciduous and coniferous.

DECIDUOUS RIPARIAN FOREST

Elevational Limits: 4,800' - 6,900'

1,900 acres

At higher elevations, where the canyons tend to be narrow this sort of forest is mainly tag alder (Alnus rugosa) and Pinus ponderosa. The alder always occupies a narrow band on the river shore. Wherever the valley flattens out

there are broad benches usually forest with Juniperus (J. deppeana and J. scopulorum) and Pinus ponderosa. In lower areas which were old river channels, and along the present channel, Populus angustifolia grows. This species tends to occur between 5,200 feet elevation and 6,900 feet elevation. Below this, it is replaced by P. fremontii. Sycamore (Platanus wrightii) grows along the stream channels up to about 6,300'. In this area, Acer negundo, Juglans major, and Fraxinus velutina also occur. An understory of Ribes, Vitis arizonica, Salix sp., Juniperus deppeana, J. scopulorum and Parthenocissus is common in this elevational range.

Forbs: Most common plants are:

Kimulus sp.
Ranunculus aquatilis
Ranunculus pennsylvanicus
Astragalus sp.
 Other plants are:
Nicotinia attenuata
Hackelia ursina
Agastache pallidiflora
Erysimum capitatum
Potentilla concinna
Tephrosia thurberi
Commelina dianthifolia

Sphaeralcea sp.
Carex sp.
Trifolium repens

Rosa fendleri
Rumex sp.
Plantago
Lotus wrightii
Penstemon virgatus
Oenothera flava
Monarda sp.

Mammals:

Many mammals come to the river for water and thus get included in this zone. But another major environmental factor limits distribution of mammals in this habitat—that of the maximum flood line. On several occasions in the major stream valleys traps set near water yielded virtually no specimens. This we interpret to be due to the periodic floods drowning out rodents in this area. Trapping along the margins of the valley always gave better results. This does not effect larger mammals. To a certain extent, the mice will re-invade this river edge community, however, these seem to be the sub-adults and juveniles forced out of more favorable habitat. Bat species were not recorded here; they will be those for surrounding habitats.

Sciurus vagrans - R
Sciurus aberti - O (only at the higher elevations where S. arizonensis does not occur)
Sylvilagus sp. - U
Sciurus arizonensis - C
Eutamias dorsalis - C (at lower elevations)
Eutamias cinereicollis - C (at higher elevations)
Thomomys bottae - A
Peromyscus maniculatus - C
Neotoma mexicana - C (higher elevations)
Neotoma albigula - C (lower elevations)
Ondatra zibethica - U
Microtus longicaudus - U (found only at higher elevations along river edges)
Canis latrans - U
Ursus americana - U
Odocoileus hemionus - U
Lynx rufus - U
Canis mesoleucus - O
Reithrodontomys - O
Peromyscus boylii - A
Microtus mexicanus - C (higher elevations along river edges)
Felis concolor - U
Procyon lotor - C
Bassariscus astutus - R
Mephitis mephitis - U

Birds: 55 species observed

Abundant species: Western Flycatcher, *Violet-green Swallow, Broad-tailed Hummingbird, Red-shafted Flicker, *Painted Redstart

Common species: *Black-headed Grosbeak, House Wren, Mourning Dove, Acorn Woodpecker, White-breasted Nuthatch, Rufous-sided Towhee, White-throated Swift, Warbling Vireo, Canyon Wren, Mountain Chickadee, Dipper, Western Wood Pewee, Black Phoebe, (especially at low elevations), Mexican Jay (low elevations), Gray-headed Junco (high elevations).

Uncommon species: Common Raven, Hairy Woodpecker, Pygmy Nuthatch, Whip-poor-will, Say Phoebe, Audubon Warbler, *Solitary Vireo, Band-tailed Pigeon, Common Nighthawk, Purple Martin, Hermit Thrush, Western Tanager, Great Egret, Heron, Poor-will, Rufous Hummingbird (migratory), Red-faced Warbler, Lucy Warbler, Bridled Titmouse, Cassin Kingbird, Turkey, Mearns Quail, Sparrow Hawk, *Mallard, *Common Merganser, Belted Kingfisher, Turkey Vulture, Red-tailed Hawk, Black Hawk, Spotted Sandpiper, Elf Owl (low elevations).

Occasional species: Brown Creeper, Traill Flycatcher, Olive-sided Flycatcher, Pygmy Owl, Chipping Sparrow, McGillivray Warbler, Hepatic Tanager

Reptiles:

Urosaurus ornata
Sceloporus clarki
Crotalus molossus
Thamnophis elegans

Sceloporus undulata
Sceloporus poinsettii
Thamnophis cyrtopsis

Amphibians:

Bufo woodhousei
Hyla arenicolor
Rana catesbeiana

Bufo microscaphus
Rana pipiens

CONIFEROUS RIPARIAN FOREST

Elevational limits: 6,900' - 8,500' 2,500 acres

Dominant trees in this habitat are primarily Douglas fir and blue spruce but at the lower limits where there is overlap with the deciduous riparian forest, ponderosa pine is common. The canyons are frequently narrow and the amount of habitat within each stream valley is limited to a narrow line often not more than 100 feet wide. At the upper reaches, the drainages of the Middle Fork and the West Fork blend into the surroundings forest and are no longer a distinct and separate habitat. Understory species are Populus tremuloides, Alnus rugosa, Sambucus neomexicana, Cornus stolonifera, Salix bebbiana, and Salix irrorata, and at the lower elevations, Quercus gambeli and Robinia neomexicana.

Forbs:

Most abundant:
Pteridium aquilinum
Senecio sp.
Achillea lanulosa
 Other species:
Helianthella quinquenervis
Lonicera arizonica
Viola canadensis
Aquilegia triternata
Polygonatum cobrense
Pseudocymopterus montanus
Velariens sp.
Geum sp.
Viola nephrophila
Descurainia sp.

Rosa fendleri
Frasaria ovalis
Lotus wrightii
Corralorhiza maculata
Verbascum sp.
Rhus toxicodendron
Sweetia radiata
Hypericum sp.
Mertensia franciscana
Lathyrus arizonica
Ceranium sp.
Sidalcea neomexicana

Mammals:

<u>Sorex vagrans</u> - C (where cover is dense)	<u>Lasionycteris noctivagans</u> - C
<u>Onychomys leucogaster</u> - C	<u>Myotis auricularis</u> - O
<u>Lasiurus cinereus</u> - C	<u>Myotis evotis</u> - A
<u>Myotis californicus</u> - O	<u>Myotis thysanodes</u> - U
<u>Myotis leibii</u> - C	<u>Plecotus phyllotis</u> - C
<u>Myotis volans</u> - A	<u>Tamiasciurus hudsonicus</u> - A
<u>Sylvilagus floridanus</u> - U	<u>Eutamias cinereicollis</u> - C
<u>Sciurus aberti</u> - C	<u>Thomomys bottae</u> - C
<u>Spermophilus lateralis</u> - C	
<u>Reithrodontomys megalotis</u> - O	
<u>Peromyscus maniculatus</u> - A (found in open terrain without much cover)	
<u>Peromyscus boylii</u> - O (where it overlaps it is always found near logs or heavy cover)	
<u>Neotoma mexicana</u> - C	<u>Microtus mexicanus</u> - C
<u>Microtus longicaudus</u> - A (especially at higher elevations)	<u>Odocoileus hemionus</u> - U
<u>Canis latrans</u> - U	
<u>Cervus canadensis</u> - C	

Birds: 45 species observed

Most abundant species: Pygmy Nuthatch, Gray-headed Junco, Violet-green Swallow, Steller Jay, Western Flycatcher

Common species: Red-faced Warbler, Audubon Warbler, Red-shafted Flicker, Mountain Chickadee, Hermit Thrush, Robin, *Hairy Woodpecker, Mourning Dove, Broad-tailed Hummingbird, White-breasted Nuthatch, Whip-poor-will, *Yellow-bellied Sapsucker, House Wren, Western Tanager, Red Crossbill, Western Wood Pewee, Acorn Woodpecker, Brown Creeper, Band-tailed Pigeon, Ruby-crowned Kinglet (at high elevations), Townsend Solitaire, Western Bluebird (low elevations).

Uncommon species: Virginia Warbler, *Red-tailed Hawk, Common Nighthawk, Cooper Hawk, Grace Warbler, Orange-crowned Warbler, Rufous-sided Towhee, Sparrow Hawk, Turkey Vulture, Great Horned Owl, Pygmy Owl, Cones Flycatcher, Canyon Wren, Warbling Vireo, Black-headed Grosbeak, Downy Woodpecker

Occasional Species: Olive-sided Flycatcher

Reptiles:

Phrynosoma douglassi
Gerrhonotus kingii

Thamnophis elegans

Amphibians:

Hyla arenicolor
Bufo microscaphus

Ambystoma tigrinum

The Mogollon Mountains occupy a large area in the southwestern part of the state. They might be construed to be a southern extension of the Mogollon Rim which originates in central Arizona and extends in a southeasterly direction through the White Mountains, and Blue Mountains of Arizona, the San Francisco Mountains, the Tularosa Mountains, the Mogollon massif as well as the Black Range. The mountain mass terminates in Sierra County just south of Hillsboro Peak. The Mogollons terminate in the Pinos Altos Mountains just north of Silver City. The Mogollon Run complex is essentially continuous but it is dissected by many streams...mainly those of the Gila drainage (even those streams in Arizona flow into the Gila). The main part of the Gila has its headwaters on the eastern side of the Mogollon Mountains. There are two major forks which drain this area. The West Fork, originates east of Mogollon Baldy. Major tributary streams of this area: White Creek and Little Creek. The Middle Fork drains the eastern slopes of Whitewater Baldy and adjacent peaks as well as the northern segment of the Mogollons around Bearwallow Mountain. Tributary streams are not especially large, but both forks have about the same amount of water where they join at the Gila center. If anything, the Middle Fork is slightly larger. The East Fork drains the northwestern side of the Black Range and is generally regarded to have more water than either of the other two forks. Below the confluence of the East and West Forks, the Main Gila picks up several major tributaries--Sycamore Creek, Sapillo Creek, Turkey Creek. In the broad valley near Cliff three major drainages come in...Mogollon Creek (which originates on the southwest slope of Mogollon Baldy and the Diablos), Duck Creek (originating in the Mule Mountains...not a part of this mountain mass) and Bear Creek draining the Pinos Altos Mountains and Tadpole Ridge.

Several species reach their southern limits of range on the crest. Clothionomys zapperi extends to this area, blue grouse terminates in this region. The absence of so many of the boreal species such as gray jays, pikas, Zapus, Microtus pennsylvanicus has always been puzzling. They occur in the White Mountains of Arizona... why not here? There does not seem to be such a great hiatus in mountain mass sufficient to hinder the dispersal of these forms to the Mogollons. Why do the Microtus pennsylvanicus and Microtus montanus not occur on the Mogollon Crest? Anderson and Hubbard (1971) report the former species near Apache Creek. Surely they ought to occur farther south. Perhaps the high country is too limited in its extent or the answer may be more intensive collecting. We did not get into this area sufficiently well to answer a number of these questions.

In this discussion at each locality the format will be as follows: its precise location by section, township and range; its geographic coordinates in latitude and longitude; the county in which it is located; the geologic map it is found on; the elevation; and the days we spent there. For each there will be a brief description of the topography and vegetation; then a brief summary of mammal work. First the trap nights are listed. Here, MS stands for Museum Special traps; RT means rat traps, the large wooden variety available in hardware stores; LT means live traps; GT means gopher traps; these are always set in pairs. The number of mist nets set for bats is also listed on this line. The specimen numbers of the mammals collected are also listed here. A detailed list of birds is not included, although any unusual observations are mentioned. You may determine the bird species by consulting the section on survey of habitats. A brief listing of the reptile and amphibian species found at each locality is also mentioned.

MOGOLLON CREST

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Three localities were studied, with a total of seven nights of trapping and observing. There was a full moon at the start of the trapping period, and trapping and netting were very poor on account of this. But trapping and netting picks up considerably about three days after full moon, when there are at least two hours of darkness before moonrise.

Hummingbird Saddle. Sec. 19 R. 17W T. 11S 108°38'35"W/33°19'50"N Catron County
Grouse Mountain Quadrangle 10,200 feet elevation 27-28 June, 1972

Vegetation: This is a small bare area 200' wide and 200 yards long between Whitewater Baldy and Willow Mountain. The west facing slope is a solid aspen stand with 95% canopy cover. Understory of *Ligusticum*, red columbine and bracken fern; 10% ground cover. The east facing slope and the tops of the ridge are dense spruce forest with very little ground cover, 80% canopy cover. Hummingbird Spring, 1/2 mile south of here, is well utilized by animals.

Mammals: 84 MS, 4 RT, 1 bat net set
No bats seen or captured
Approx. 3 *Tamiasciurus* around camp.
1 *Microtus longicaudus* DLH 78 (in the spruce forest)
Several *Cervus canadensis* came into camp during the night.

Birds: We saw several pair of Green-tailed Towhees here; no doubt they were nesting. Red-breasted Nuthatches were present at this locality.

Reptiles and amphibians: None observed.

More work needs to be done here, perhaps several nights of study under more ideal conditions. We hope to be able to return here the following year.

Apache Cabin Sec. 36 T. 11S R. 18W 108°39'35"W/33°17'55" Catron County
Grouse Mountain Quadrangle 10,200 feet elevation 28 June to 1 July, 1972

Vegetation: The cabin is located on a steep south-facing slope on the east end of Black Mountain, north of Sacaton Mountain. The north-facing slopes of Black Mountain are dense spruce-fir forest. The canopy is so dense that there is little undergrowth. The south-facing slope contains a large aspen stand where coarse molly grass and *Holodiscus dumosa* predominate as understory. In this region there are also large rock slides which have no canopy cover. A more thorough survey of this niche is desirable.

Mammals: 252 MS, 12 RT, 8 sets GT, no bat nets set. Traplines were placed in most of the habitat types in this area since we had several days here. No bats were seen. There were practically no insects at night.
2 *Tamiasciurus hudsonicus* DLH 79, 80
1 *Eutamias cinereicollis* seen around the cabin.
1 *Spermophilus lateralis* seen around the cabin
4 *Thomomys bottae* BJH 6223, 6225, 6226 They were not common here, the soil is not loose enough, but after much searching we found a small area of them.
2 *Peromyscus maniculatus* BJH 6222, DLH 81
1 *Neotoma mexicana* (under the cabin) DLH 83
6 *Microtus longicaudus* DLH 90, 91, BJH 6220, 6221, 6224
1 *Clethrionomys gapperi* BJH 6227
Much *Canis latrans* sign along the trails
5 *Cervus canadensis* and a great deal of sign.
Many deer tracks and sign seen.

Birds: A pair of band-tailed pigeons were about every day...indicating a possible nest in the area. A brood of six 2/3 grown Blue Grouse was observed one mile west of the cabin. A Williamson Sapsucker was heard below the cabin.

Reptiles: Urosaurus ornata Phrynosoma douglassi

Amphibians: None observed

Mogollon Baldy. Sec. 10, T 12S R 17W 108°35'40"/33°16'18"N Catron County
Mogollon Baldy Quadrangle 10,770 feet elevation 1-4 July, 1972

Vegetation: This peak is the highest point at the south end of the Mogollon Crest. There is a fire tower at the top and the area around this is clear. The east and north slopes are composed of dense spruce forest with 95% canopy cover and no ground cover. The south and west facing slopes are very steep and are covered with sparse bunch grass and a few stunted trees. These two slopes receive the prevailing winds on Mogollon Baldy.

Mammals: 237 MS, 11 RT, 0 GT. No bat nets set.

Tamiasciurus hudsonicus heard

3 Eutamias cinereicollis BJH 6231, 6232, 6233. Many more seen.

4 Spermophilus lateralis BJH 6234, 6235, DLH 95 Others seen. Common around cabin

8 Peromyscus maniculatus BJH 6229, 6230, 6238 DLH 92

2 Neotoma mexicana DLH 101, BJH 6237

7 Microtus longicaudus BJH 6236; DLH 93, 100, 102, 103

2 Clethrionomys gapperi BJH 6228; DLH 94

2 Cervus canadensis Seen early morning near cabin

5 Odocoileus hemionus Seen early morning near cabin

Birds: Many birds such as Red-tailed Hawk, Ravens, Swifts were common because of the air currents around the peaks.

Reptiles: Phrynosoma douglassi Urosaurus ornata

Amphibians: None observed

Middle Fork of the Gila River

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The Middle Fork starts as a series of tributary streams coming from the north end of the Mogollen Crest and Bear Wallow Mountain. Willow Creek and Iron Creek originate near White-water Baldy. Gila Creek originates in the Bear Wallow Mountain area. Other tributary creeks such as Clear Creek, Swinging Cross Creek, Chicken Coop Creek, Prior Creek originate on the north slopes of the Jerkys. Farther down the stream, House Log Creek, Brothers West Creek and Indian Creek Canyon drain the western and northern slopes of Black Mountain. Big Bear Creek drains the Woodland Park area which is east of the Jerkys. Many of these are temporary streams or at best, are intermittent. We trapped in 13 localities, spending 25 nights trapping these areas.

LILLY MOUNTAIN. Sec. 25 T 11S R 16W 108°27'30"W/ 33°19'00"N Catron Co.
Lilly Mountain Quadrangle 8,949 feet elevation 17 June, 1972

Vegetation: The south facing slope of this mountain is mostly pinyon-juniper-scrub oak woodland. On top, it is a mixture of ponderosa pine and douglas fir.

Mammals: 2 Sylvilagus cf. floridanus were collected on the south slope of the mountain.
DLH 44, 45.

MARSS SPRING. Sec. 13 T 11S R 16W 108°28'12"W/33°19'33"N Catron Co.
Lone Mountain Quadrangle 7,950 feet elevation 18-20 June, 1972

Vegetation: This spring is near the crest of the Jerky Mountains. It is the head of Clear Creek which drains into the Middle Fork. The valley is about 150' wide in some places, 200'. The creek has cut a trench about 20' deep in places and is about 20' wide. Flow of water is intermittent here. Stream edges have grass and sedges as dominants, but there is a lot of Mimulus growing on the creek edges. Rosa fendleri and Sambucus grow along the stream margins also in small quantities. The bench in the canyon has ponderosa pine, douglas fir and gambel oak... the latter being the most common. East-facing slopes have gambel oak shading into pinyon-juniper woodland. Canopy cover is about 20%. Ground cover is about 70%. West-facing slopes have more gambel oak (40' high) and a lot of douglas fir (80-90' high). Canopy cover is 60% here and the ground cover is about 15%. Small aspens were also present.

Mammals: 177 MS, 8 RT, 2 bat nets set.

2 Myotis volans BJH 6289, 6290

2 Myotis evotis BJH 6291

1 Myotis leihii BJH 6292

Lasiurus cinereus? a bat, probably this species, flew around the spring but did not get caught

Tamiasciurus hudsonicus Observed near camp.

2 Peromyscus boylii DLH 159, 160

4 Peromyscus maniculatus DLH 161, 164, BJH 6293, 6294

1 Peromyscus leucopus? DLH 162

1 Neotoma mexicana DLH 165

1 Microtus mexicanus DLH 163

Canis latrans One seen walking through camp. Also heard at night

Ursus americanus A cinnamon bear was seen along the ridge above camp.

Reptiles and Amphibians: None observed.

LILLY PARK SPRING. Sec. 25 T 11S R 16W 108°26'50"W/33°18'30"N Catron Co.
Lilly Mountain Quadrangle 7,750 feet elevation 15-18 June, 1972

Vegetation: The spring is at the north end of Lilly Park, in the Jerky Mountains, just over the West Fork/Middle Fork Divide. It is the head of Creel Canyon. The spring is on a north-facing slope with a predominant stand of gambel oak. On the east-facing hillsides there was pinyon-juniper-oak woodland, elsewhere it tended to be ponderosa pine-gambel oak woodland. About $\frac{1}{2}$ mile down Creel Canyon, south-facing slopes had 70% ponderosa pine, 30% gambel oak. North-facing slopes in the same area had 50% douglas fir, 20% gambel oak, 30% ponderosa pine. Lilly Park is an open, grassy area with sparse ponderosa pine along the margins. It is Y-shaped with each arm being about 0.4 miles long. Small streams are present in each arm and the junction of these forms Lilly Creek which flows into the West Fork of the Gila. No canopy cover is present in the park itself, but the ground cover is about 80%.

Mammals: 139 MS, 9 RT, 4 sets GT, 1 bat net set over the spring

Only small, maneuverable bats were caught here because of the small size and the location of the spring. We took down the net early and could have caught a great many more bats, but they would have been the same species.

23 Nyctis evotis BJH 6167-9, DLH 42, BJH 6171

10 Nyctis volans BJH 6166, 6170

1 Nyctis thysanodes

1 Nyctis auxilium DLH 41

13 Eptesicus fuscus BJH 6172, DLH 43

Eutamias cinereicollis Observed 2 miles down Creel Canyon

2 Spermophilus lateralis

1 Tamiasciurus hudsonicus Seen 2 miles down Creel Canyon

Thomomys bottae Many old mounds were present in Lilly Park

10 Peromyscus maniculatus BJH 6165, 6173, DLH 46, 47 Present on the hillsides

Urocyon americanus Tracks were observed around the park

Cervus canadensis Tracks in Creel Canyon

Reptiles: Phrynosoma douglassi DLH 48

Amphibians: Bufo microscaphus collected 2 miles west of here DLH 729.

WEST SLOPE OF LOCO MOUNTAIN. Sec. 26 T 10S R 16W 108°27'25"W/33°26'45"N Catron Co.

Loco Mountain Quadrangle 8,150 feet elevation 7-8 October, 1972

Vegetation: This ridge is on the edge of a large grassy basin, sloping north toward the Snow Creek Basin. The south side of the ridge slopes into drainages that go to the Middle Fork. North-facing slopes have ponderosa pine parkland with a heavy grass understory. There appears to be little grazing here. Canopy cover is about 5%. South-facing slopes have about 50% stand of ponderosa pine. The remainder of the canopy is made of pinyon pine-juniper (J. deppeana) - scrub oak woodland. The small feeder streams are lined mostly with oak. Canopy cover is about 20% here with little understory; ground cover is 10% at the most. The greatest amount of regeneration appears to be junipers, there being many of these, about 5 feet tall.

Mammals: 113 MS, 30 LT, 5 RT, no bat nets set.

5 Peromyscus maniculatus Open terrain; mostly on north-facing slopes.

6 Peromyscus truei Caught in areas where oak was thick.

1 Microtus mexicanus In a small clearing on the ridge. We regard this as unusual.

2 Canis latrans Seen and heard near camp in the morning.

Birds: Large flocks of pinyon jays were present in this area, but then they are widespread at this time of year.

Reptiles and Amphibians: None observed.

WOODLAND PARK Sec. 35 T 11 S R 15 W 108°21'30"W/33°17'30"N Catron Co.
Canyon Creek Mountains Quadrangle 7,350 feet elevation 23 July, 1972

Vegetation: This is a small ranch in a headwater canyon of Indian Creek Canyon. Surrounding it are grassy plains where there are relatively few trees. Gently rolling hills predominate.

Mammals: No traps were set, no overnight stay was made. However a Sylvilagus (DLH 172) was collected near here.

Reptiles and Amphibians: None Observed.

WOODLAND PARK TANK Sec. 35 T 11 S R 15 W 108°21'30"W/33°17'30"N Catron Co.
Woodland Park Quadrangle 7,300 feet elevation 18-20 June, 1972

Vegetation: Woodland Park Tank is permanent water, about 300' long, 100' wide and is triangular in shape. This is an area of essentially pure ponderosa pine which has virtually no undergrowth. There are small depressions that drain into Big Bear Canyon to the east. However, there grows very little cover. Like most stands of this sort, it tends to be rather sterile. However, it is excellent country for big game.

Forbs: We identified the following genera here: Achillea, Erigonum, Senecio, Potentilla, Sphaeralcea, Astragalus, Nemastylis.

Mammals: 195 HS, 14 RT, 4 sets GT, 1 bat net set

- 1 Myotis velans DLH 56
- 1 Myotis leibii DLH 56
- 4 Myotis californicus BJH 6183-6
- 1 Myotis evotis BJH 6182
- 1 Euderma maculata BJH 6185
- 3 Lasiurus noctivagans BJH 6181 DLH 55
- 1 Plecotus phyllotis BJH 6179
- 1 Lasiurus cinereus BJH 6178
- 6 Eptesicus fuscus BJH 6180, DLH 53
- 1 Thomomys bottae BJH 6177
- 3 Peromyscus maniculatus BJH 6176-8
- 2 Peromyscus truei DLH 50-1

Cervus canadensis A lot of sign observed in the park.

Birds: Robins, Flickers, Pygmy Nuthatches were very common. Purple Martins and Violet-green Swallows were common over the tank all throughout the day.

Reptiles: Urosaurus ornatus

Amphibians: Ambystoma tigrinum Abundant in the tank
Hyla arenicolor DLH 49.52

PRIOR CABIN Sec. 22 T 11 S R 15 W 108°22'15"W/33°14'35"N Catron Co.
Woodland Park Quadrangle 6,900 feet elevation 20-22 June, 1972 20-21 July, 1972

Vegetation: The cabin is located at Pior Spring on Prior Creek about 3 miles upstream from Middle Fork. The north-south canyon is shallow in this area and rather open. Prior Creek is intermittent and about 1 foot wide. In the bottom are a few Douglas fir, but mostly ponderosa pine. East of here is a large open ponderosa parkland with about a 10% canopy cover. The understory is grass which does not provide much cover. The east-facing slope west of the cabin is also ponderosa pine but it has small numbers of scrub oak growing here, plus a few piñon pine. This is not very good small animal country.

Mammals: 185 HS, 3 RT, 6 set GT, 2 bat nets set

- 1 Archibuteo several others were seen
- Antilocapra harrisi found

- 1 Eutamias cinereicollis Seen
- 2 Thomomys bottae BJH 6191, 6192, 6193
- 1 Peromyscus maniculatus BJH 6187
- 1 Peromyscus truei BJH 6188-90 (around logs)
- 1 Neotoma mexicana BJH 6193
- 1 Microtus mexicanus BJH 6186

57 Cervus canadensis 37 near the mouth of Creel Creek and 20 on the way to Woodland Park

Birds: A Mourning Dove nest was observed near the cabin. Several broods of Western Bluebirds were present around the cabin in mid-July.

Reptiles: None Observed.

Amphibians: Hyla arenicolor DLH 58

WILLOW CREEK CAMPGROUND. Sec. 34 T 10S R 17W 108°34'55"W/33°24'00"N Catron Co.

Negrito Mountain Quadrangle 7,950 feet elevation 6-8 Oct., 1962, 5-6 Oct., 1963, 5-6 June 1964

Vegetation: Willow Creek has a 100-200 yard wide bench in this area, which is just above its junction with Gilita Creek. On the bench are many spruces of both species. Douglas fir is the predominant species on the north-facing slope, ponderosa pine is the dominant species on the south-facing slope. This locality is very similar to the Iron Creek locality which is four miles south of here. The bottom has thick, matted grass which is very thick with microtine rodents.

Mammals: In 1962, a single night of trapping with 101 traps, yielded 83 mice, mostly Microtus longicaudus. The traps were being snapped while we set them. At the time we had set 33 traps, there were already seven mice in the traps.

- 3 Corvus vagrans BJH 1943, 2517, 2518
- 3 Myotis volans BJH 2674, 2675, 2662
- 6 Myotis evotis BJH 2665-7, 2671-3
- 2 Lasiorycteris noctivagans BJH 2661, 2668
- 3 Eptesicus fuscus BJH 2663, 2676, 2677
- 1 Lasiurus cinereus BJH 2664
- 1 Plecotus phyllotis BJH 2658 This one was interesting because it was a male.
- Euderma maculata At least a dozen of this species have been netted in the pond above the campground.
- Tamiasciurus hudsonicus Common in the spruce trees in the canyon
- 5 Spermophilus lateralis BJH 1972, 2657, 2659, 2660, 2669
- Eutamias cinereicollis Observed commonly
- 2 Thomomys bottae BJH 1975, 2020. The first one was caught in a Museum special.
- 13 Peromyscus maniculatus BJH 1965-8, 2511-4, 2653-6, 2670
- 2 Neotoma mexicana BJH 2510, 2520
- 31 Microtus longicaudus BJH 1945-51, 1953, 1964, 1969-71, 1973-4, 1999-2000, 2026-30, 2031-39, 2515-6. This is the most common mouse in this area.
- 3 Microtus mexicanus BJH 1944, 1963, 2519. Caught in the same area as the previous species.

Birds: The usual boreal species are found here. We have seen broods of turkeys on the mesa above the campground.

Reptiles and Amphibians: None recorded, although they surely occur here.

IRON CREEK MESA LAKE Sec. 2 T 11S R 17W 108°34'20"W/33°23'15"N Catron Co.

Negrito Mountain Quadrangle 8,300 feet elevation 26-27 June, 1972

Vegetation: This is a shallow depression in a ponderosa pine forest between Willow Creek Campground and Iron Creek. The lake was almost dry at the time we visited it. The surrounding forest is pure ponderosa pine. Iris missouriensis is very common along the margins of the lake. We camped at the west end of the lake.

Mammals: 88 MS, 4 RT set along the forest margin, 2 bat nets set.

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8 Myotis evotis A banded bat was captured, having been banded at the same locality 6 years previously.

7 Myotis californicus BJH 6217, DLH 74, 76

1 Myotis volans BJH 6216

1 Myotis thysanodes EJB 6218

4 Lasiorycteris noctivagans

2 Lasiurus cinereus DLH 77

1 Plecotus phyllotis

Thomomys bottae lots of gopher mounds in the vicinity

1 Peromyscus maniculatus

1 Neotoma mexicana BJH 6213

2 Microtus mexicanus BJH 6214-5

Canis latrans Heard during the evening close to camp.

Ursus americanus Bears had been flipper rocks over near here, looking for grubs.

Cervus canadensis Heard during the evening

Odocoileus hemionus Young buck around the edge of the lake in the early morning hours.

Birds: Western Tanager captured in a Museum Special.

Reptiles: None Observed.

Amphibians: Pseudanis triseriata DLH 86-89

Hyla wrightorum DLH 84, 85

IRON CREEK, 1 MILES UPSTREAM FROM MOUTH. Sec. 2 T 11S R 17W 108°34'02"W/39°22'40"N Giron Co.
Negrito Mountain Quadrangle 7,900 feet elevation 24-26 June, 1972

Vegetation: This is a deep mountain canyon about 1 1/2 miles S Willow Creek Canyon Campground. The canyon bottom is mostly spruce with a dense mat of grass. Iron Creek is about 6-8 feet across and tumbles over rocks and boulders. The north-facing slopes are composed of douglas fir with pine farther up on the slopes. South-facing slopes are mostly ponderosa pine. Heavy grass in the canyon bottom is mostly Poa and in the swales, Cyperus and Carex are the predominant genera. The creek has clumps of willows along it. These reach about 12 feet in height. However, there was very little vegetation along the creek proper due to the numerous flooding from storms.

Forbs: Pseudocymopterus montanus, Hypericum, Lithospermum cobriense, Vegetaria, Sidalcea neomexicana, Mertensia franciscana, Lathyrus arizonicum, Rubus parviflorus, Viola nephrophylla

Mammals: 181 MS, 9 RT (in canyon bottom and forest ecotone), 2 bat nets set.

2 Sorex vagrans BJH 6201, 6207 (deep grass)

1 Myotis evotis BJH 6209

Lasiorycteris? flying around the canyon

2 Plecotus phyllotis BJH 6210, 6211

1 Lasiurus cinereus EJB 6212

1 Eutamias cinereicollis EJB 6206 (in the forest)

5 Peromyscus maniculatus BJH 6202, 6203, DLH 69, 70, 71

3 Neotoma mexicana BJH 6204, 6205, DLH 72

1 Microtus mexicanus DLH 73 (on river edge)

3 Microtus longicaudus EJB 6205, DLH 68

Canis latrans Calling during the night

Birds: This river canyon has the usual high altitude species--Golden-crowned Kinglets, Ruby-crowned Kinglets, Audubon Warblers, Pine Siskins and crossbills.

Reptiles and Amphibians: None Observed.

MIDDLE FORK, ABOVE MOUTH OF IRON CREEK. Sec. 24, T 10S, R 16W 108°28'25"W/33°23'45"N Catron Co.
Loto Mountain Quadrangle 7,100 feet elevation 23-24 June, 1972 # 25

Vegetation: The canyon is broad (approximately 200' wide here) and the cliffs and palisades are about 300' high. In this area, the river valley has a series of grassy meadows with beaver ponds present in many places. Willows are common along the stream and heavy grass is present wherever there is enough moisture. Riparian vegetation consists of narrow-leaved cottonwood, walnut, box-elder and occasionally large willows. Parthenocissus, alder and glaberrima occur in lesser abundance. North-facing canyon walls have Quercus gambeli as the dominant species. South-facing slopes have Juniperus deppeana, pinyon pine and some ponderosa pine. Ponderosa pine predominates on the mesas above the canyon level.

Mammals: 95 MS, 5 RT, no bat nets set Full Moon

- 1 Reithrodontomys megalotis BJH 6197
- 3 Peromyscus maniculatus BJH 6200, DLH 63, 64
- 3 Peromyscus boylii BJH 6199, DLH 65, 66
- 1 Microtus mexicanus BJH 6198

Birds: Black-headed Grosbeaks extend up the Middle Fork this far, as do Painted Redstarts. We saw numbers (about a dozen) of Band-tailed Pigeons here in October.

Reptiles: None Observed

Amphibians: Rana pipiens in the river.

TROTTER PLACE. Sec. 6 T 11S R 15W 108°26'10"W/33°22'25"N Catron Co.
Lilly Mountain Quadrangle 6,900 feet elevation 22-23 June, 1972

Vegetation: The cabin (which was torn down several months ago) stands in a clearing in the broad valley of the Middle Fork. This area was farmed in past times and there are evidences of machinery which had been hauled in many years ago. There are three large meadows above the cabin. The river is lined with narrow-leaved cottonwood, box-elder, walnut and willows. The hillsides are mostly ponderosa pine with a 50% canopy coverage. The cabin site is at the mouth of Swinging Cross Canyon. Nearby is a spring along a low cliff that provides lush vegetation under a stand of cottonwoods. The river changes course often, so there are many gravel bars.

Mammals: 92 MS, 5 RT, 4 sets GT, no bat nets set

- 2 Thomomys bottae BJH 6196, DLH 62
- 6 Peromyscus maniculatus DLH 59-61
- 1 Microtus mexicanus BJH 6195 (in marshy area)

Birds: This is the only locality in the wilderness where we saw MacGillivray's Warblers.

Reptiles: Thamnophis marcianus DLH 57

Amphibians: Rana pipiens

MOUTH OF CLEAR CREEK. Sec. 11 T 11S R 15W 108°22'10"W/33°20'50"N Catron Co.
Woodland Park Quadrangle 6,600 feet elevation 21-22 July, 1972

Vegetation: We camped about $\frac{1}{2}$ mile below the mouth of the creek. The canyon of the Middle Fork is several hundred feet deep here and entry into the canyon from above is restricted by steep cliffs and breaks. The river winds through a flat, U-shaped valley. The benches have Juniperus scopulorum, Populus angustifolia, Quercus gambeli which gives a 30% canopy cover. Along the river banks there are Alnus rugosa, Acer negundo, Populus angustifolia. The north-facing hillsides have ponderosa pine, gambel oak and a few Pinus flexilis (20% canopy cover, 5% ground cover). Much poison ivy grows on the bench.

Mammals: 72 MS, 4 RT, 4 sets GT, no bat nets set

5 Thomomys bottae BJH 6298, 6299, DLH 166-8

6 Peromyscus boylii BJH 6295-7

Birds: Rufous Hummingbirds were observed at this site. This is the beginning of their peak of abundance. Black Phoebes were nesting along the river here also.

Reptiles: Urosaurus ornatus
Crotalus lepidus DLH 731

Amphibians: Bufo punctatus DLH 176

THE MEADOWS. Sec. 30 T 11S R 14W 108°19'30"W/33°18'08"N Catron Co.
Woodland Park Quadrangle 6,300 feet elevation 22-24 July, 1972

Vegetation: At the junction of Indian Creek Canyon, the Middle Fork has cut its canyon quite wide and has created two grassy meadows (each about 15 acres). The lower meadow has a series of springs creating a large marsh with resulting stands of iris, sedge, bullrush, watercress and tag alders. It is one of the few places in the wilderness where we saw Potamogeton nodosus. The spring is about 150' x 600' in size. The river flows through these meadows and is lined with box-elder, narrow-leaved cottonwood and walnut. The benches along the river have Juniperus scopulorum and a few ponderosa pines. Canopy cover is 80% and ground cover is 10% along these margins.

Mammals: 138 MS, 8 RT, 4 sets GT, 1 bat net set Full Moon

2 Thomomys bottae BJH 6300, DLH 173

5 Peromyscus boylii DLH 160-171

Reptiles: Phrynosoma douglassi DLH 175

Amphibians: Rana pipiens DLH 176 Common in the river.

MOUTH OF JORDAN CANYON. Sec. 34 T 11S R 14W 108°16'10"W/33°17'20"N Catron Co.
Woodland Park Quadrangle 6,050 feet elevation 24-25 July, 1972

Vegetation: The Middle Fork canyon is about 1,000 feet deep at this point. There are many meanders in the stream and the benches continue to be present since the U-shaped canyon is several hundred feet wide. Deciduous riparian forest occurs along the river, there being Platanus wrightii, Acer negundo, Juglans major and some Populus angustifolia. There were many piles of dead logs and trees in this trapping area. On the bench, ponderosa pine and juniper were the principal trees. Canopy cover was 80%, ground cover 5%. The canyon slopes which were shallow enough in gradient to have trees had douglas fir, ponderosa pine and Quercus grisea with a canopy cover of 5% and a ground cover of 60%.

Mammals: 69 MS, 4 RT, no bat nets set

1 Peromyscus boylii BJH 6301

Reptiles and Amphibians: None Observed.

West Fork Gila River

The main headwater streams of the West Fork (those with semi-permanent water) are Cub Creek, White Creek, Langstroth Creek, Rammsat Creek and McKenna Creek. We visited all of these with the exception of Cub Creek which has no trail crossing it anywhere except at its mouth. The West Fork streams originate on the eastern slopes of Mogollon Baldy and the Diabl. Range which extends southeast from there. Beyond the mouth of McKenna Creek, no permanent or semi-permanent streams enter. At Gila Center the Middle Fork joins the river system. We visited 11 localities and spent 25 nights trapping this drainage.

SNOW PARK. Sec. 14 T 12S R 17W 108°34'35"W/33°15'25"N Catron Co.
Mogollon Baldy Quadrangle 9,900 feet elevation 4 - 6 July, 1972

Vegetation: Snow Park is at the head of one of the major tributaries to White Creek. The park is a large clearing several miles east of Mogollon Baldy, on the southeast facing slope of that mountain mass. The park is covered with dense Muhly bunchgrass and bracken fern. Ground cover was about 80%. Conversations with people who visit here often, indicate that the bracken gets so high at times that you have to be on horseback to see over the tops. It was not that way this year. Quaking aspen grows along the western and southern edges where strong winds blow constantly. This wind causes the pines and firs to resemble timber line growth. Along the eastern margin, spruce and limber pines grow in dense abundance. In the park there are isolated spruce and limber pine trees. Rubus parviflora grows abundantly in the ecotone areas.

We keyed out the following plants here: Castilleja sp., Erythraea sp., Linum lewisii, Sweetia radiata, Helianthella quinquinerva, Geranium sp., Silene lacinata, Agastache pallidiflora.

Mammals: 157 MS, 8 ET, 4 sets GT, no mist nets set

- 1 Sylvilagus sp. DLH 104
- 1 Tamiasciurus hudsonicus DLH 105
- 2 Thomomys bottae BJH 6245, 6246
- 8 Peromyscus maniculatus BJH 6241-4, DLH 106
- 1 Neotoma mexicana DLH 109
- 5 Microtus longicaudus BJH 6240, DLH 107, 108
- 3 Microtus mexicanus BJH 6239, 6247, 6248

Birds: We saw Band-tailed Pigeons here frequently, seeming to ride the air currents that swept up out of the Mogollon Creek drainages. The majority of the other birds were those that you would expect.

Reptiles: Phrynosoma douglassi DLH 102 Thamnophis marcianus DLH 103

Amphibians: None observed.

HALFMOON PARK. Sec. 1 T 12S R 17W 108°33'35"W/33°16'50"N Catron Co.
Mogollon Baldy Quadrangle 8,600 feet elevation 13 - 16 July, 1972

Vegetation: This is a park on White Creek about the point at which the tributary streams form into a single creek which is White Creek. It is 8 to 10 feet wide here and about 6 to 12 inches deep. The park is 1½ miles NE Mogollon Baldy, is 3/8 mile long and about 300 yards wide. There are virtually no trees (an occasional aspen) in the park. The south-facing slopes are covered with dense stands of ponderosa pine; the north-facing slopes are thick stands of spruce and douglas fir (no ground cover). Canopy cover is about 90% here and there are many downfalls. The meadow has a few aspens (½ of them dead).

Coverage is 50% bracken fern, 50% grass (90% *Poa*, 10% *Muhlenbergia*). Other plants in order of decreasing abundance are: *Mertensia franciscana*, *Helianthella quinquefolia*, *Cirsium* sp., *Rosa fendleri*, *Chenopodium album*, *Achillea lanulosa*. Ground vegetation along the stream included many of these species plus *Veratrum californicum*. The only *Calachortis gunnisoni* that we saw in the wilderness occurred here.

Mammals: 222 MS, 15 RT, 8 sets GT (set in all habitats), no bat nets set.

2 *Sorex vagrans* DLH 137, BJH 6272

No bats seen

4 *Tamiasciurus hudsonicus* At least four around camp.

Eutamias cinereicollis None in the park, but present in the forest surrounding the park.

4 *Thomomys bottae* BJH 6270, 6271; DLH 140, 141 In the meadow.

4 *Peromyscus maniculatus* BJH 6276, DLH 135, 139, 142 In the forest.

14 *Microtus longicaudus* BJH 6264-69; 6274, 6275, 6277, 6278, DLH 134, 136, 138, 143

3 *Microtus mexicanus* DLH 144, 145, BJH 6273 In the meadow.

1 *Cervus canadensis* Seen up White Creek above the park; a lot of sign around the park.

Birds: There were several broods of House Wrens in the park. We saw Three-toed Woodpeckers here.

Reptiles: None observed

Amphibians: *Rana pipiens* DLH 154

MIDDLE WHITE CREEK. Sec. 10 T 12S R 16W 108°29'30"W/33°16'25"N Catron Co.

Lilly Mountain Quadrangle 7,550 feet elevation 11 - 13 July, 1972

Vegetation: This is the site of the "old White Creek cabin" and is about 4 miles upstream from the junction with the West Fork. Here, White Creek is a steep canyon with a small meadow that extends for about 1/4 mile. The meadow is about 100 to 150 feet wide and has a few ponderosa pines and gambel oak growing in it. South-facing slopes have ponderosa pine and gambel oak, that has 50% canopy cover and 30% ground cover. North-facing slopes have mostly douglas fir with a few spruce. Above and below the meadow, the canyon is V-shaped and is a dense tangle of *Alnus rugosa*, willows and small spruce trees.

Mammals: 152 MS, 9 RT, 4 sets GT, no bat nets set (too brushy)

Several *Myotis* were observed over the clearing during twilight hours.

1 *Sciurus aberti* DLH 193

3 *Thomomys bottae* BJH 6259, 6260, DLH 129

1 *Reithrodontomys megalotis* BJH 6262 A very interesting place to find this species.

1 *Peromyscus boylii* BJH 6258

5 *Peromyscus maniculatus* BJH 6257, 6261, DLH 127, 131

5 *Microtus longicaudus* BJH 6263, DLH 128, 132, 133 Right on water's edge.

1 *Cervus canadensis* 4 miles upriver.

7 *Odocoileus hemionus*

Reptiles: *Phrynosoma douglassi* DLH 194

Ray Swigert reported seeing *Crotalus lepidus* here.

Amphibians: None observed.

RAMHEAD CREEK. Sec. 23 T 12S R 16W 108°28'50"W/33°14'35"N Catron Co.

Diablo Range Quadrangle 7,600 feet elevation 5 - 7 August, 1972

Vegetation: This is a broad, shallow canyon which empties into Langstroth Canyon. A semi-permanent stream flows through it, having sedges and heavy grass along its margin.

Sparse ponderosa grows on the south-facing slopes with a 5% canopy cover and a 10% ground cover of gambel oak and Rosa fendleri. The north-facing slopes have douglas fir and gambel oak.

29

Mammals: 144 MS, 24 RT, 8 sets GT, no bat nets set

- 2 Eutamias cinereicollis seen.
- 2 Thomomys bottae BJH 6322
- 3 Peromyscus boylii BJH 6318, 6319, DLH 191 Rocky outcrops.
- 11 Peromyscus maniculatus BJH 6320, DLH 190, 192, 195-7 Canyon Bottom.
- 1 Neotoma mexicana BJH 6321

Birds: We saw our only Great-horned Owl of the summer here. Birds were relatively sparse, partly because of the time of year and partly because of the uniform nature of the ponderosa pine forest.

Reptiles and Amphibians: None observed.

McKENNA SPRING. Sec. 30 T 12S, R 15W 108°26'40"W/33°13'15"N Catron Co.

Diablo Range Quadrangle 7,650 feet elevation 8 - 12 June, 1973

Vegetation: McKenna Spring is the head of McKenna Creek. The spring is semi-permanent having water during all but the driest months. It had water at the time of our study, but was dry in early August when we passed through the area again. The spring and the creek are in a clearing in the pine forest...about 1/4 mile long and 200' wide. The presence of stumps there indicated that a few of the trees had been cleared to enlarge the opening. Just above the clearing there is an open "park" which has thick Muhly bunchgrass. The mesa west of the clearing is rather open ponderosa pine with a thick cover of bracken fern and lupine. The west-facing slope of the Diablos to the east, has a mixture of douglas fir and ponderosa pine. McKenna Creek below the clearing is very little different from the surrounding forest.

Mammals: 249 MS, 33 RT, 2 bat nets set

- 1 Sorex vagrans BJH 6137 In heavy bunchgrass.
- 2 Myotis auriculus BJH 6143, 6151
- 1 Myotis thysanodes BJH 6145
- 20 Myotis evotis BJH 6146, 6147
- 26 Myotis volans BJH 6148, 6157
- 1 Myotis californicus BJH 6149
- 1 Myotis leibii BJH 6150
- 1 Lasiurus cinereus DLH 25
- 2 Lasionycteris noctivagans BJH 6144, 6156
- 3 Plecotus phyllotis BJH 6152, 6153
- 4 Eptesicus fuscus BJH 6154, 6155
- 3 Sciurus aberti DLH 17
- 7 Eutamias cinereicollis BJH 6135, 6140-2, DLH 24, 26
- 1 Spermophilus lateralis DLH 20
- Thomomys bottae Many mounds in the creek bottom.
- 4 Peromyscus boylii DLH 21, 22, 23 Caught near logs in stream valley.
- 15 Peromyscus maniculatus BJH 6133, 6134, 6136, 6138-9, DLH 18, 19 Open hillsides.
- 1 Neotoma mexicana
- 1 Canis latrans Seen near camp.
- 1 Cervus canadensis
- 20 Odocoileus hemionus

Birds: Western Bluebirds nested on the edge of the clearing. Red Crossbills were seen several times. This is an erratic species, occurring in numbers at unpredictable times, but frequently absent.

Reptiles: None observed.

Amphibians: Bufo woodhousei DLH 34
Hyla arenicolor DLH 31
Hyla wrightorum DLH 32-3, 35-7

McKENNA PARK AIRSTRIP. Sec. 19 T 12S R 15W 108°26'10"W/33°14'20"N Catron Co.
 Diablo Range Quadrangle 7,650 feet elevation 1-2 May 1965, 3-5 August, 1972

Vegetation: The airstrip is a cleared area, approximately 1 mile long and 300 feet wide, built in 1950 to land fire-fighting planes. It is located on a mesa of the Diablo Range in a rather pure ponderosa pine stand. A dry stream runs through the airstrip and there are boggy areas in places along the margin...these having thick stands of sedge, grass and Iris missouriensis. The pine stand is open and there is very little undercover here. It is a poor place for mice. Small ponderosas are beginning to invade parts of the airstrip, but these are not much more than 3 or 4 feet high at the moment.

McKenna Creek flows just west of the airstrip...the canyon is about 100' deep. The bottom has Quercus gambeli in sparse stands...the slopes are covered with ponderosa pine.

Mammals: 18A MS, 15 RT, 6 sets GT, 1 bat net set

- 1 Plecotus phyllotis BJH 1951
- 1 Lasionycteris noctivagans BJH 2952
- 1 Sciurus aberti DLH 178
- 2 Eutamias cinereicollis BJH 6313; 2953
- 4 Spermophilus lateralis BJH 6311, 6312
- 4 Thomomys bottae BJH 6310, 6314, 6315, 2955
- 18 Peromyscus maniculatus BJH 6304-9, 6316-7, DLH 179, 180, 181, 185, 186, 188, 189
- 2 Neotoma mexicana BJH 2954, DLH 187
- 1 Microtus mexicanus BJH 6303
- 2 Onychomys leucogaster (does) Observed around camp during our study.

Birds: The airstrip is one of the better man-made things to happen to the wilderness. It is a clearing in an otherwise solid stand of ponderosa pine. Many birds occurred here that were found nowhere else. For example, we saw Water Pipits here on 12 June. In August, Western Kingbirds and Lark Buntings were present. These are unusual records for the wilderness and we feel that it was the large, open area at this elevation that attracted the birds. The density of birds around the airstrip was noticeably higher than than the forest 500 feet back in the forest.

Reptiles: Phrynosoma douglassi DLH 183

Amphibians: Bufo microscaphus DLH 184. Another specimen of this species was captured in the Dry Lake Beds about a mile west of the airstrip (DLH 718). In 1963 the senior author collected Pseudacris triseriata in a small "spring" on the eastern edge of the airstrip.

JACKASS PARK. Sec. 27 T 11S R 16W 108°30'05"W/33°18'20"N Catron Co.
 Mogollon Baldy Quadrangle 8,000 feet elevation 16 July, 1972

Vegetation: This area, near the mouth of Cub Creek, is typical of the undulating terrain between drainages. It is a rather open ponderosa pine forest with scattered groves of Quercus gambeli in the more moist depressions. Jackass Park apparently drives its distinction as a park from the "open nature" of the timber, rather than being a distinct clearing such as the previous areas discussed. It is located between Pack Saddle Canyon and Cub Creek. We did not camp here because of the lack of water.

Mammals: No traps or nets set

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Sciurus aberti DLH 146
Ursus americanus Much sign.
Odocoileus sp. A lot of sign along the trails

Birds: They were those of the ponderosa pine forest. It was raining when we passed through this area and there was little bird activity.

Reptiles and Amphibians: None observed.

PACK SADDLE CANYON. Sec. 33 T 11S R 16W 108°29'40"W/33°17'20"N Catron Co.
Lilly Mountain Quadrangle 7,700 feet elevation 12 July, 1972

Vegetation: The canyon bottom, which is V-shaped, has mostly douglas fir and gambel oak. The sides and the mesa above are ponderosa pine forest.

Mammals: No trapping done here.

Tamiasciurus hudsonicus DLH 130

WEST FORK CORRAL. Sec. 20 T 11S R 16W 108°30'50"W/33°19'32"N Catron Co.
Mogollon Baldy Quadrangle 7,550 feet elevation 3-4 April, 1971, 16-18 July, 1972

Vegetation: This area (the corral has since been torn down) is at the mouth of Turkeyfeather Creek. It is a widening of the West Fork canyon and has grassy benches and an open, park-like aspect. Scattered ponderosa pine and gambel oak grow on this bench. The canyon varies from 100 to 300 feet in width. Above and below here, the West Fork Canyon is V-shaped. The river is 6-10 feet wide and runs through a wide gravel bed, which has been brought in by Turkeyfeather Creek. Beavers have made three or four large ponds on the south side of the canyon. North-facing slopes (about 30° slope) were steep and covered with spruce and douglas fir. South-facing slopes had Quercus gambeli, some ponderosa pine and at higher levels there was scrub oak, Holodiscus and Robinia. At the top of the mesas, the tree vegetation consisted of 80% ponderosa pine, 15% gambel oak, 4% scrub oak and 1% douglas fir (canopy cover 40-60%) and an understory of grass.

Forbs: Croton sp., Fragaria sp., Penstemon virgatus, Rubus parviflorus, Potentilla concinna, Potentilla thurberi, Mertensia franciscana, Achillea lanulosa, Monarda sp. and Erysimum.

Mammals: 193 MS, 5 RT, 4 sets GT, 1 bat not set

- 2 Lasiurus cinereus BJH 6283, 6284
- 1 Plecotus phyllotis BJH 6285
- 1 Myotis sp. Seen near camp but not captured; very likely it was M. evotis.
- 1 Sylvilagus sp. Seen near camp.
- 3 Spermophilus lateralis BJH 6287, 6288
- 2 Thomomys bottae DLH 156, 157
- Castor canadensis Not counted.
- 8 Peromyscus boylii BJH 5993-6, DLH 148-50, 158 (rocky south-facing slopes).
- 15 Peromyscus maniculatus BJH 5997, 6279-81, 6286, DLH 147, 151 (bench and floodplain).
- 5 Microtus longicaudus BJH 6282, DLH 152-3 (heavy grass on bench).

Birds: Among the early fall migrants observed here, Virginia Warblers were notable. We observed a Winter Wren at this locality in April, 1971. There was a brood of Yellow-bellied Sapsuckers near camp.

Reptiles: Urosaurus ornatus
Thamnophis elegans DLH 155

Amphibians: None observed.

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WHITE CREEK CABIN. Sec. 1 T 12S R 16W 108°27'25"W/33°16'30"N Catron Co.
Lilly Mountain Quadrangle 6,800 feet elevation 12-15 June, 1972, 6-11 July, 1972

Vegetation: The cabin is located at the mouth of White Creek. Here, the valley is wide, (about 750' at the widest point), and the clearing is about $\frac{1}{2}$ mile long. The canyon is approximately 1,000 feet deep here. Near the cabin there is a large spring which maintains a thick marsh of sedges and grasses. Willows and alders grow (up to 12' high) along the many watercourses that issue from this spring. Elsewhere the valley has a large number of gravel bars (due to the frequency of flooding). A mixture of Populus angustifolia, willows, walnut, alder and conifers grow along the West Fork. There are numbers of beaver ponds in the area of the cabin. Floods frequently take out the beaver dams and the river frequently changes course.

South-facing slopes are forested mainly with ponderosa pine (75% of individuals), 10% young douglas fir and 15% Pinus flexilis, Juniperus scopulorum, Quercus gambeli. Here the canopy cover averages 50%, ground cover about 5%. In more exposed areas the oaks, predominate, there being some Q. grisea and some Q. hypoleucoides. North-facing slopes have more douglas fir, a larger stand of Quercus gambeli and a few scrub oaks.

Mammals: 512 MS, 39 RT, 6 sets GT, 1 bat net set.

1 Sorex vagrans DLH 110 In marshy area.

1 Lasiurus cinereus BJH 6255

1 Sylvilagus sp. Seen.

1 Tamiasciurus hudsonicus DLH 114

4 Eutamias cinereicollis BJH 6161

5 Thomomys bottae DLH 115-6, BJH 6252-4 In horse pasture.

Castor canadensis Several seen; numbers reduced from previous years.

5 Peromyscus boylii BJH 6162-3, 6250, 6256 On rocky slopes.

34 Peromyscus maniculatus BJH 6159-60, 6251, 6249, DLH 29, 38, 39, 112-3, 125, 126.
In river bottom and low slopes.

1 Neotoma mexicana DLH 40

10 Microtus mexicanus BJH 6158, DLH 27, 28, 11, 20, 121, 122-4 Heavy veg. around springs.

1 Microtus longicaudus DLH 119 More open cover along West Fork.

Ursus americana Common in this area.

Odocoileus hemionus Come occasionally to the meadow.

Birds: Coues and Olive-side Flycatchers were seen in White Creek Canyon. We considered these to be unusual and were the only records of this species all summer. A Spotted Sandpiper at the mouth of White Creek was also unusual. We observed a brood of young Brewer Blackbirds near the horse barn one June evening. This is one of the few areas in the wilderness where Dippers can be seen regularly.

Reptiles: Thamnophis elegans Common in the spring area.

Phrynosoma douglassi DLH 117

Sceloporus undulatus DLH 118. At Horse Spring, nearby, the junior author collected 2 specimens of this species (DLH 722, 727) during summer 1971.

Amphibians: Rana pipiens DLH 30. This was the only frog we found in this area.

MOUTH OF HELL'S HOLE CANYON. Sec. 4 T 12S R 15W 108°23'55"W/33°16'35"N Catron Co.
Lilly Mountain Quadrangle 6,400 feet elevation 4-5 April, 1972

Vegetation: The West Fork makes a big loop here and Hell's Hole Canyon comes in at the apex of this loop. There is a broad clearing, a sandy bench with ponderosa pine growing on the bench. Along the creek there are species of Ribes and Salix. Many logs and piles of brush were piled here at the time of our visit. Cottonwood, box-alder and alder grow

along the river in some profusion. The canyon walls are largely forested with ponderosa pine and douglas fir is found in sheltered, north-facing areas. The canyon is about 100 feet wide and 1,000 to 1,200' deep at this point. There are precipitous cliffs in many places.

Mammals: 46 MS, no bat nets set

1 Sciurus arizonensis Seen about $\frac{1}{2}$ mile below Hell's Hole Canyon

2 Peromyscus boylii BJH 5998, 5999

Ursus americanus There were several reports of bears seen in this area during this summer.

Reptiles: Crotalus molossus DLH 737

Sceloporus poinsettii DLH 726

Amphibians: None observed.

3-MILE DWELLING Sec. 17 T 12S R 14W 108°18'02"W/33°18'55"N Catron Co.

Little Turkey Park Quadrangle 5,800 feet elevation 4-5 April, 1971

Vegetation: This locality is three miles above the Gila Cliff Dwellings on the West Fork. The canyon is narrow with narrow benches. It is about 400' deep and 100' wide. The canyon has a stand of Populus angustifolia, Alnus rugosa, Acer negundo along it. Because of the steepness of the canyon walls there is virtually no vegetation on them. At the top there is ponderosa pine.

Mammals: 45 MS, no bat nets set

3 Peromyscus boylii BJH 6000, 6001

Reptiles: Sceloporus poinsettii DLH 728 Collected at the mouth of White Rocks Canyon, a short distance upstream from this locality during summer 1971.

Amphibians: Rana pipiens are common in the West Fork.

GILA CENTER. Sec. 25 T 12S R 14W 108°14'30"W/33°13'25"N Catron Co.

Gila Hot Springs Quadrangle 5,600 feet elevation

Vegetation: This area is located at the junction of the West and Middle Forks of the Gila River. The valley is about $\frac{1}{2}$ to $\frac{1}{2}$ mile wide and parts of it have been farmed in the past. The slopes of the mountains on both sides are very gradual. The stream is lined with cottonwood, walnut, box-elder and alder trees. Pinyon pine and juniper cover the adjacent slopes.

Mammals: No trapping study was completed here this summer, but during the time when the senior author was a collaborator with the National Park Service, he trapped mammals and established a list for the Gila Cliff Dwellings National Monument. Peromyscus boylii are very abundant on all slopes. Neotoma albigula are common in the valley bottom. TJ Mesa is an interesting area, for here Dipodomys ordii, Perognathus flavus as well as Onychomys torridus were captured; the only place in the wilderness area where these species are known to occur at the present time.

Mammal, bird and herpetological lists are available for this area from the Visitor Information Service Division of the Gila National Forest.

LITTLE CREEK

This tributary of the West Fork originates on the north slope of the Diablo Range, and flows approximately 15 miles eastward along the north edge of the Diablos and empties into the West Fork about a mile below the junction of the Middle and West Forks. The first two miles of the stream have permanent water, and the last four miles do also. The remainder of the stream flows through a thick gravel bed. About 3 miles above the mouth, Little Creek

boxes up and there are one or two very nice springs in the walls of the canyon.

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LITTLE CREEK CABIN. Sec. 33 T 12S R 15W 108°24'20"W/33°12'15"N Catron Co.

Diablo Range Quadrangle 7,300 feet elevation 1-8 June, 1972, 2-3 August, 1972

Vegetation: Little Creek Canyon is about 400 feet deep in this area and is V-shaped. The canyon bottom is lined with douglas fir and deciduous riparian species such as Alnus rugosa, Salix sp. and Quercus gambeli. The river benches are covered primarily with ponderosa pine (90%) and a few douglas fir (5%). The understory is very sparse. North-facing slopes are a mixture of ponderosa pine and douglas fir with a few gambel oak. South-facing slopes had open ponderosa stands with about 20% oak (including gambel oak and Quercus hypoleucoides). There are many decaying logs in this area. The cabin is near the famous Little Creek Burn. These areas, after 20+ years of regeneration are still relatively barren. Remnant ponderosas are still scattered thinly over the hillsides. Principal new growth is a mixture of Robinia neomexicana, Quercus gambeli and douglas fir which are usually no taller than 3 feet high. This shows how slow the vegetation recovery is here.

Mammals: 587 MS, 55 RT, 4 sets GT, 6 bat. nets set

- 54 Myotis evotis BJH 6110, 6112, 6120, DLH 4, 5
- 33 Myotis volans BJH 6118, DLH 6
- 7 Myotis thysanodes BJH 6114, 6125, DLH 3
- 3 Myotis leibii BJH 6119, DLH 13
- 2 Myotis californicus BJH 6116
- 10 Plecotus phyllotis BJH 6113, 6117
- 2 Eptesicus fuscus BJH 6115
- 2 Lasiurus cinereus BJH 6111
- 1 Myotis auriculus BJH 6126
- 1 Sciurus aberti On Granite Peak Trail, DLH 8
- 4 Tamiasciurus hudsonicus Seen.
- 4 Eutamias cinereicollis DLH 9, BJH 6122, 6127
- 3 Thomomys bottae BJH 6128-30
- 6 Peromyscus boylii BJH 6121, 6131, 6302, DLH 10, 11 Canyon bottom.
- 4 Peromyscus maniculatus BJH 6109, 6132 DLH 1, 2 More frequent on hillsides.
- 3 Neotoma mexicana BJH 6108, 6123, 6124, DLH 12
- 3 Microtus mexicanus Only at the very edge of the creek.
- 1 Ursus americanus Came by the cabin one night. Sign elsewhere.
- 1 Cervus canadensis Seen in canyon near cabin....lots of sign.
- Odocoileus sp. Tracks. We believe these to be O. virginiana.

Birds: It was interesting to see the overlapping ranges of the Whip-poor-wills and the Poor-wills here. Each night we watched the Whip-poor-wills hawking insects from the large firs in front of the cabin. We counted three singing individuals along this small stretch of stream.

Reptiles: Urosaurus ornata DLH 717

Amphibians: Bufo microscaphus

LITTLE TURKEY PARK. Sec. 20 T 13S R 14W 108°18'30"W/33°11'30"N Grant Co.

Little Turkey Park Quadrangle 7,350 feet elevation 13-15 August, 1972

Vegetation: This is a NE/SW clearing in ponderosa pine at the eastern end of the Diablos. The clearings are in three segments. The whole park is about 1500' long and varies in width from 200 to 400'. The area is relatively flat and the pine forest is typical parkland; in depressions there is a thick Muhly bunchgrass cover. Fallen logs and trees are everywhere. Canopy cover is about 40% in most places. There is a large tank

at the northeastern end of the park. It was overflowing at the time we were there.

Mammals: 16 $\frac{1}{2}$ MS, 16 RT, 4 sets GT, 2 bat nets set

" 35 "

2 Myotis evotis DLH 235, 236

2 Myotis thysanodes DLH 248, 249

2 Placotus phyllotis DLH 233, 234

1 Sylvilagus sp. Seen around camp.

1 Thomomys bottae There seemed to be a surprising lack of pocket gophers here.

8 Peromyscus maniculatus BJH 6345-7

Canis latrans Heard near camp.

Ursus americanus Fresh sign on the Miller Springs Trail.

Birds: Of interest in this locality, were the two nighthawks roosting on the ground along the Miller Spring Trail. We also found a Band-tailed Pigeon nest 10 feet above the ground in a dead ponderosa pine. The birds were incubating.

Reptiles: None observed.

Amphibians: Ambystoma tigrinum and Bufo microscaphus wandered through the camp at night. The tank had a great many salamanders in it.

EE CORRAL. Sec. 33 T 12S R 14W 108°18'05"W/33°12'20"N Catron Co.

Little Turkey Park Quadrangle 6,420 feet elevation 1 June, 1972, 2 August, 1972

Vegetation: The corral area is located in Little Creek Canyon just above the box (about 1.1 $\frac{1}{2}$ miles). The valley is wide here, sandy and contains sparse stands of ponderosa pine. Little Creek does not have permanent water at this point. The understory consists of young ponderosa pines about 30' tall, young Populus angustifolia and a very few young douglas fir. Canopy cover along Little Creek is about 60% ...farther back on the bench, it approximates 5-10%. Forbs in bloom in early August were: Hemiplopappus gracilis (most common), Argemone sp., Geranium sp., Gilia aggregata, Eriogonum sp., Erysimum sp., Lotus wrightii and a small cover of grasses.

Mammals: No treplines or bat nets were set here, since we did not camp at this locality. However, one mammal of interest was Eutamias dorsalis. This is the only locality in the wilderness where we saw this species this summer.

The Main Gila begins at the junction of the East and West Forks. New Mexico Highway 15 crosses it at this point. The area is frequently referred to as Gila Forks. Below here, the canyon is moderately wide and the river course meanders back and forth across the valley, often changing course after major storms. The benches along the sides of the canyon tend to remain, however. We spent 12 nights studying 9 different localities in this segment of the study.

MOUTH OF SAPILLO CREEK. Sec. 32 T 14S R 14W 108°18'15"W/33°02'55"N Grant Co.
Granny Mountain Quadrangle 5,200 feet elevation 5-6 May, 1972 8-9 Oct., 1971

Vegetation: The Gila makes a 160° bend at this point. The valley is at least 200' wide. Vegetation is deciduous riparian. The north-facing slopes have ponderosa pine, gambel oak and walnut. Ground cover consists of sparse Muhly bunch grass among the large rocks and boulders. The south-facing slopes are covered with pinyon-juniper woodland.

Mammals: 36 MS, 1 RT, 2 bat nets set
No bats captured, but many were seen
6 Peromyscus boylii BJH 6099, 6100, 6101, 6070
2 Eutamias dorsalis
Neotoma albigula

Birds: No observations were made during the avian breeding season

Reptiles: Urosaurus ornatus
Sceloporus undulatus

Amphibians: Rana pipiens
Rana catesbeiana

SHELLEY CAMP. Sec. 21 T 14S R 15W 108°23'35"W/33°04'12"N Grant Co.
Canyon Hill Quadrangle 4,950 feet elevation 11 October, 1971, 7 May 1972

Vegetation: This is a cow camp on a wide meadow in the Main Gila at the mouth of Hell's Canyon. There are open benches of loose alluvium here supporting mesquite and junipers. The river is lined with stands of Baccharis and Alnus. Very large cottonwoods and sycamores are present along the stream at regular intervals. Because of the grazing, there is little ground cover on this bench and consequently it is poor habitat for rodents.

Mammals: 76 MS, 1 RT, 2 bat nets set
1 Myotis leibii
1 Lasiurus cinereus
1 Tadarida brasiliensis (no doubt migrating)
3 Peromyscus boylii
1 Ondatra zibethica Observed in the river the evening of 11 October.

Reptiles: Urosaurus ornata
Sceloporus clarki

Amphibians: Rana pipiens

HEAD OF TURKEY CREEK. Sec. 9 T 13S R 15W 108°23'20"W/33°11'30"W Grant Co.
Diablo Range Quadrangle 7,800 feet elevation 5-6 June 1972

Vegetation: Turkey Creek heads on the north side of Granite Peak. The upper 5 or 6 miles

has no permanent water. Here it is a V-shaped canyon with ponderosa pine stands on both slopes (about 20% canopy cover). The understory consists of Quercus hypoleucoides, choke-cherry and small douglas firs as well as Muhly bunchgrass. Ground cover is about 30%.

Mammals: 58 MS, 1 RT, no bat nets set

" 37 "

1 Peromyscus boylii
1 Neotoma mexicana

Birds: A flock of 30 Clark Nutcrackers was seen around Granite Peak on several occasions. White-throated Swifts were present in small numbers in this area as well. The other birds were those typical of the ponderosa pine forest. Several Townsend Solitaires were singing during early June in this vicinity.

Reptiles and Amphibians: None Observed.

MILLER SPRING. Sec. 35 T 13S R 15W 108°21'20"W/33°07'25"N Grant Co.

Granny Mountain Quadrangle 6,950 feet elevation 12-13 August, 1972

Vegetation: Miller Spring Canyon heads on the western slopes of Granny Mountain and flows through ponderosa pine forest to Turkey Creek at the point where it has permanent water. At the head of one of the tributary streams is Miller Spring and a cabin owned by the N.M. Game Dept. A large stock tank was full of water at the time we were there. The canyon is 50' wide near the cabin and the stream channel has deep sedge along the water course. The water is semi-permanent in the spring. There was none at the time of our visit. The ponderosa pine forest along the stream had 30% canopy cover and 10% ground cover.

Mammals: 91 MS, 9 RT, 4 sets GT, no bat nets set (the tank was much too large)

Nyctis sp. Seen flying around the cabin...either M. leibii or M. californicus.

Sylvilagus sp. One was seen at the upper end of the tank.

3 Thomomys bottae BJH 6330, 6340, 6341

2 Peromyscus boylii BJH 6342

Peromyscus maniculatus Tail caught in mouse trap

3 Peromyscus truei DLH 221, 222, 223

1 Microtus mexicanus BJH 6342 Captured on the stream edge in a sedge mat

Ursus americanus. It was reported that a bear broke into the cabin shortly after we left

Reptiles: Gerrhonotus kingi DLH 220

Sceloporus undulatus In the cabin.

Amphibians: Ambystoma tigrinum DLH 218 (in the tank)

Bufo microscaphus DLH 219

MOUTH OF MANZANITA CREEK. Sec. 30 T 13S R 15W 108°25'20"W/33°08'55"N Grant Co.

Diablo Range Quadrangle 5,900 feet elevation 11-12 August, 1972

Vegetation: Turkey Creek, in this area, is a wide, grassy canyon about 400 feet in width. The stream is lined with Populus angustifolia, Juglans major, Acer negundo, and Alnus rugosa. There is a large outwash bench at this point which supports a rather lush stand of forbs. Dry, rocky, south-facing slopes have 20% canopy cover and about 5% ground cover of Quercus grisea, Juniperus deppeana, Arctostaphylos pungens and Pinus ponderosa. The substrate consists of exfoliating rhyolitic rock. On the ridges there were small stands of Pinus leiophylla. North-facing slopes had mostly ponderosa pine and small amounts of scrub oak.

Mammals: 86 MS, 9 RT, no bat nets set

Sylvilagus sp. Seen near camp.

We looked for pocket gopher mounds but found very few. Farther upstream there were more.

6 Peromyscus boylii DLH 214, 215-7, BJH 6335-8

We had hoped to catch Microtus mexicanus here but we did not.

There was a strange call of a cat during the night...probably a mountain lion.

Birds: A brood of Painted Redstarts was around camp. We saw Band-tailed Pigeons here commonly.

" 38 "

Reptiles: Crotalus molossus seen about $\frac{1}{2}$ mile below camp.

Amphibians: None observed.

MOUTH OF SYCAMORE CREEK. Sec. 35 T 13S R 16W 108°28'25"W/33°07'55"N Grant Co.
Diable Range Quadrangle 5,400 feet elevation 10-11 August, 1972

Vegetation: Trapping was done only in Turkey Creek Canyon. There was a narrow band of the usual deciduous riparian trees, including sycamore. South-facing slopes were covered with scrub oak, cholla, sotol, and prickly pear. Canopy cover is about 30% and the ground cover averages 5% at the most. The canyon slopes are very steep here; many rock falls are present. North-facing slopes have ponderosa pine, Juniperus deppeana, and Quercus grisea. Ground cover is about 30%; canopy cover is 50%.

Mammals: 90 MS, 9 RT, no bat nets set.

6 Peromyscus boylii BJH 6333, 6334, DLH 211, 212
Neotoma sp. (probably N. albigula). Lots of pack rat sign.
Peromyscus leucopus? DLH 213
Bear sign along the trail. They had been eating juniper berries.

Reptiles: Crotalus molossus On Sycamore Creek, $\frac{1}{2}$ mile above its mouth.
Urosaurus ornatus

Amphibians: Rana pipiens All along Turkey Creek.

MOUTH OF TURKEY CREEK. Sec. 21 T 14S R 16W 108°29'W/33°04'N Grant Co.
Canyon Hill Quadrangle 4,800 feet elevation 22-23 April, 1971

Vegetation: Where Turkey Creek joins the Gila, there is a very broad, sloping floodplain covered with mesquite and junipers (J. monospermum and J. deppeana). The mesquites are 15-20' high and the junipers reach 30-40'. There is very little undergrowth under this canopy, a few prickly and annuals being the only plants. This is due principally to grazing.

Mammals: 137 MS, 34 LT, no bat nets set.

3 Peromyscus boylii BJH 6002-4,

Reptiles: Urosaurus ornatus
Sceloporus undulatus
Sceloporus clarki

Amphibians: Rana pipiens
Rana catesbiana

Our studies included several localities on Mogollon Creek, but the streams needs much more study.

MOUTH OF TURKEY CANYON. Sec. 4 T 13S R 16W 108°30'10"W/33°11'50"N Grant Co.
Shelley Peak Quadrangle 7,050 feet elevation 9-10 August, 1972

Vegetation: The East Fork of Mogollon Creek is wide at this point...perhaps 300' wide. The benches are flat and stable, and are forested with ponderosa pine and a few gambel oak. The stream is intermittent and the bed is about 40' wide. There are many rocks

and boulders in the stream bed. Shrubby willows are common along the banks. North-facing slopes have douglas fir and aspen (canopy cover 60%; ground cover 80%). South-facing slopes have mostly ponderosa pine. Higher up, near 7,500', these slopes have manzanita, Quercus hypoleucoides and a few Quercus arizonica.

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Mammals: 90 MS, 9 RT, no bat nets set

- 1 Sciurus aberti Seen
- 1 Eutamias cinereicollis + more heard
- 4 Peromyscus maniculatus BJH 6331, DLH 208-10 Open Terrain
- 1 Neotoma mexicana BJH 6332

Birds: No unusual birds were seen here.

Reptiles and Amphibians: None Observed.

KEMP PLACE. Sec. 36 T 12S R 17W 108°33'30"W/33°12'40"N.

Gatron Co.

Shelley Peak Quadrangle 6,550 feet elevation 7-9 August, 1972

Vegetation: This former ranch was located at the junction of the East and South Forks of Mogollon Creek. No buildings remain at this location, but there is still an old wooden corral here. The canyon is about 1,500' deep, the creek is 20' wide and is lined with box-elder, narrow-leaved cottonwood, alder and a few ponderosa pine. There is 8% canopy cover and 50% ground cover in these areas. The benches along the creek have scrub oak, ponderosa pine, some alder, walnut and many young junipers and small amounts of Parthenocissus. South-facing slopes have many ponderosas, averaging 60' high, a few large Juniperus deppeana, and some very small ones. Scrub oak and Quercus hypoleucoides up to 5' tall grow on the steep parts of the slope. A few young douglas firs (none more than 3' high) grow here. Canopy cover is 50% and ground cover is 20% including Mahly bunch grass. Higher up on these same slopes, Cercocarpus was very abundant as was Agave parryi. The north-facing slopes of the canyon were mixtures of ponderosa pine and douglas fir in equal densities.

Forbs identified were: Tephrosia thurberi, Oenothera flava, Tradescantia pinetorum.

Mammals: 179 MS, 20 RT, 8 sets CT, no bat nets set

- 5 Thomomys bottae BJH 6324-29 River Bench
- 8 Peromyscus boylii BJH 6323, DLH 202-6, DLH 188, DLH 199 Hillsides
- 2 Microtus mexicanus BJH 6330, DLH 207 Heavy grass near clearing.

We saw bats flying about over the clearing at night and we judged them to be Lasiurus noctivagans.

Reptiles: Crotalus viridis DLM 200

Sceloporus poinsetti DLH 201

Sceloporus undulatus PLH 733 collected 3 miles downstream

Amphibians: None Observed.

Sorex vagrans. Wandering Shrew. This is the only common shrew found in the Mogollons. Several other species should occur here—Sorex nanus and possibly Sorex merriami, but they are very difficult to capture for they seldom ever go in traps. A shrew from Mimbres Valley in the collection of Western New Mexico University may possibly be Sorex nanus. At lower elevations (below 6,500') Notiosorex is probably common, but it is never caught in traps either. Most records of this animal are derived from owl pellet analyses. Owls seem to be very good at catching them.

Sorex vagrans is nearly always captured in thick vegetation, usually along streams or in mountain parks. Apparently this species needs heavy cover and moisture where their invertebrate food supply is abundant. We collected this species at Half-moon Park, Iron Creek, McKenna Spring and White Creek Cabin. The site at McKenna Spring was interesting for we would not have predicted catching them there. It was in thick ~~thick~~ grass in one of the dry feeder fingers of McKenna Creek. Catching them at White Creek Cabin was surprising because of the low elevation. However they do doubt occur throughout White Creek and moved down from the Mogollon Crest in this manner. We do not expect them any lower than this. Ordinarily, they are found in localities above 8,000 feet. Of the six shrews captured, four were females.

The mouse-eared bats (Myotis) have very maneuverable flight. This allows them to feed in thick forest and to drink at small water holes, the kind that are practical to net. We captured six species of this genus.

Myotis auriculus. Mexican Long-eared Myotis. This species was uncommon—due largely to the fact that we did not net in their principal habitat—pinon-juniper woodland. We did collect them in small numbers (usually one or two per night) at three localities: Little Creek Cabin, McKenna Spring and Lilly Park Spring. They were always in the nets much later than Myotis evotis. Whether they fly later, or they had to go farther to find water is purely conjectural. 3♂; 1♀ were captured during the summer.

Myotis californicus. California Myotis. This small, fluttery bat occurs throughout the mountains of New Mexico and adjacent mountain states. It is an early flying bat found in woodland and pine forests. They appear about sunset and are usually the first bats in the nets $\frac{1}{2}$ an hour later. We captured them as high as Iron Creek Mesa Lake (8,300'). They quit flying shortly after 9. 14 bats were captured—93% (13) were ♀.

Myotis evotis. Long-eared Myotis. This is probably the most common Myotis in the wilderness—at least it is caught most frequently in mist nets. They were captured in nearly every locality we netted. They appear about $\frac{3}{4}$ an hour after sunset and quit flying about 10 p.m. Like most bats they feed only for a few hours in the evening. We observed them at Prior Cabin feeding on insects about 15-20 feet above the ground in the small clearings. They patrol specific areas, flying circular routes on a rather regular basis. 111 individuals caught—60♂ (54%), 51♀ (46%).

These bats do not occur below the ponderosa pine zone frequently. In lower elevations their niche is occupied by Myotis auriculus. The two species do overlap slightly in their altitudinal range.

Myotis leibii. Small-footed Myotis. This species is easily confused with Myotis californicus and their habits are quite similar. They are often caught in the same net, but their abundance varies depending upon the area netted. Myotis californicus tends to be caught more often in areas where the water source is in an open area.

Myotis leibii dominates when the nets are set across small streams in narrow canyons, such as Mogollon Creek and Turkey Creek (in their upper reaches). They both come into water early and there seems to be no major differences in time of their activity. We have seldom ever caught them after 9 p.m. Their stomachs appear to get filled within an hour of emergence. Nines individuals were caught—7♂ (78%), 2♀ (22%).

Myotis thysanodes. Fringe-tailed Myotis. This species occurs throughout the western United States. It is a common attic or "old barn" bat throughout much of its range. We had expected to find many of these. The fact that they were not common may reflect the lack of potential roosting areas for them. Or, they may be common at lower elevations. Several individuals were collected at each of five localities: Little Creek Cabin, Little Turkey Park, McKenna Spring, Lilly Park Spring and Iron Creek Mesa Lake. In previous years they were regularly caught around Willow Creek Campground (although in greater numbers). Ten individuals were captured--9♂, 1♀.

Myotis volans. Long-legged Myotis. This seems to be the second most common bat in the wilderness. It flies early in the evening and always seems to forage in group or flocks. We usually caught three or four individuals in the nets at the same time and frequently they were no more than 3 or 4 feet apart in the nets. We believe that this species probably roosts in tree cavities of one sort or another. They do not occur as high as Myotis evotis and their range probably extends into the woodland habitats. 77 individuals were caught--20♂ (26%), 56♀ (74%).

Myotis lucifugus occultus should occur in the wilderness. Its absence is puzzling.

Eptesicus fuscus. Big Brown Bat. This widespread, adaptable species probably occurs throughout the elevational zones of the wilderness. In some places where nets were set, they were caught in huge numbers. This may indicate they roost in large colonies (hollow trees?). Despite this apparent abundance, we caught them only four places: Little Creek Cabin, Woodland Park, McKenna Spring and Lilly Park Spring. At this latter locality there must have been a maternity colony nearby for most of the bats were females, and obviously pregnant. Our experience has shown that these bats fly later than most of the other species. Seldom do they come into the net before 9 p.m. and you will find them in nets until 12 midnight or 1 a.m. Late checks of the nets usually show these bats active during much of the night, and they have a feeding period before dawn too. Of 25 individuals 56% (14) were males, 44% (11) were females.

Lasiurus cinereus. Hoary Bat. This large tree dwelling bat is, according to authorities, strictly migratory in New Mexico. However, we caught males during most of the summer. They drink at water where there is a lot of room for maneuvering. These bats fly high above the trees and seem to come out early--about ½ hour after sunset. They don't come into the nets until 9:15 though. It seems that they must feed before they drink. We caught them in mist nets as late as 11:30 p.m. Most times these bats are found in stream canyons, probably they can be observed in any of the coniferous, riparian areas. We captured 11 individuals--all males.

Lasionycterus noctivagans. The silver-haired bat is common everywhere in the Gila Forest. It often comes out about sunset or maybe 10 minutes later, feeds high above the trees for ½ hour and then comes in to water about ¾ hour after sunset. At Iron Creek we watched one patrolling up and down the stream in a regular "beat" for as long as light lasted. Because they are not as maneuverable as the Myotis, they prefer more open water surfaces for drinking. This species feeds longer than the Myotis, being caught in the nets late at night and being in the nets when we checked them in the morning. Of 15 individuals 67% (10) were ♀.

Plecotus phyllotis. Big-eared Bat. This common bat was once considered rare. It is found everywhere in the wilderness above 7,000 feet and was found in small numbers at most netting localities. The bats have audible chirps which are distinctive enough to recognize to the species level. Nineteen of the 20 individuals that we netted were females, apparently males are quite rare in this part of their range. This species flies late at night--one being in the nets prior to 9:30 (at least one hour after sunset). The species is very docile.

Euderma maculata. Spotted Bat. We caught only one specimen (♀), although we predicted there should have been more. The species is reported to be restricted to ponderosa pine forests and they drink in large open tanks in big clearings. Woodland Park fits this description and this is where we caught our one specimen. They should have been at Little Turkey Park Tank too, but we did not catch any. The bat was in the net the next morning when we checked. This species apparently flies very late and many records are for captures after midnight. Since the net was last checked at midnight that night, the bat got into the net sometime between 12 midnight and 7 a.m. More intensive netting over these large tanks should yield more specimens. It is reported that they prefer cracks and crevices in high cliffs.

There is a pond above Willow Creek Campground that is famous for being an area where Spotted Bats can be captured. At least 10 specimens have been captured by University of New Mexico mammalogists.

Tadarida brasiliensis. Guano Bat. We expected to catch a few bats of this species, but in fact, we caught no molossids at all. There are rumors of large Tadarida caves north of Silver City, but these have never been located. The species is apparently migratory in this area. The senior author has collected these in mist nets on the Main Gila near Hell's Canyon and in the Gila Valley around Cliff, during migration periods. The lack of caves and caverns may also explain the general lack of this species during the summer season. Also, in light of current populations trends in this species, their absence is further substantiated. The widespread use of DDT has apparently reduced the huge colonies of this species to about 10% their former size.

Sylvilagus sp. Two species of cottontails probably occur in the wilderness--S. auduboni in the woodland areas and S. floridanus in the forest. Where the ranges overlap is not known. We did not see large numbers of them, but they were present at many places we studied. We saw them at seven localities, ranging in elevation from 5,900 feet (Turkey Creek) to 9,900 feet (Snow Creek). Nowhere were they common. Most of these were probably Sylvilagus floridanus.

Ochotona princeps. Pika. Back packers have reported seeing this species among the talus slopes of Sacaton Mountain. We did not get there this summer, but we have asked competent friends to look for these animals. It is our belief that these sightings were probably rock squirrels which inhabit similar surroundings and have very similar vocalizations. The presence of pikas in the Mogollons would be very unusual, when you consider all the other boreal species which are absent.

Lepus californicus. Black-tailed Jack Rabbit are found around the margin of the wilderness in pinyon-juniper and grassland areas. We saw only one during the summer between Yellow Mountain and mouth of Indian Creek Canyon. This is open grassland and the species is to be expected there.

Sciurus aberti. Tassel-eared Squirrel. This species is restricted to ponderosa pine forests. Therefore in an area such as the wilderness where ponderosa pine is so abundant, you would expect to see quite a few tassel-eared squirrels...and we did, though not really abundant anywhere in the wilderness, they are most common in the 7,000 to 8,000 feet range. The junior author has ridden much of the wilderness district in previous years and feels that they occur regularly but not in great numbers. At Little Creek Cabin, Middle Creek and Lilly Park they occupy the same areas as Tamiasciurus.

Sciurus arizonensis. Gray Squirrel. This species is gradually extending its range up the Gila and San Francisco Rivers. They occur in the deciduous riparian forest along the Main Gila in the wilderness. They have been observed as far up the West Fork, as the mouth of Hell's Hole Canyon and up the Middle Fork about 2 miles above Gila Center. Another pair was seen many times by the junior author near the 3-mile ruin on the West Fork. The increase in range of these will be interesting to watch.

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Tamiasciurus hudsonicus. Chickaree. This species is probably the most common species of squirrel in the wilderness, and is locally abundant. At several study sites we found two or three pair in a relatively small area. Their elevational range is from 7,500 feet to 10,770 feet, although they occasionally will be found around 7,000 feet if local conditions are right. They are usually considered to be squirrels of spruce and fir forests. At Little Creek Cabin however, we found them building nests in ponderosa pines.

Spermophilus lateralis. Golden-mantled Ground Squirrels occur in most of the river canyons of the wilderness and along the Mogollon Crest. They are most common around cabins and picnic areas where food is abundant. Possibly food supply is a limiting factor that keeps their numbers low throughout much of the wilderness. Seven thousand feet seems to be the lower limit of their range of habitation. White Creek Cabin was the lowest place we found them.

Spermophilus variegatus. Rock squirrels are mammals of open country, or woodland areas. Therefore they are not common in the Wilderness Ranger District. They are abundant around Gila Center and in the grassy plains north of the Meadows. One was seen in Woodland Park. Another was observed at Hell's Hole and another on Gilita Creek above the mouth of Iron Creek. They may be more abundant on the western slope of the Mogollons among the large rock slides.

Eutamias cinereicollis. The Gray-headed Chipmunk is the common chipmunk of the wilderness. They are found in most of the localities we visited. They are most abundant in the stream valleys. This species is replaced at lower elevations by E. dorsalis. The boundary between these is not well known. Probably it is the forest-woodland boundary.

Eutamias dorsalis. The Cliff Chipmunk is the low elevation chipmunk. It is common along the Main Gila below the mouth of Sapillo Creek. We have seen it no farther upstream, although it probably occurs there. It probably also occurs in lower Turkey Creek and lower Mogollon Creek.

Thomomys bottae. Pocket Gopher. This species is found wherever the soil is soft enough to allow them to dig. This summer, we collected them at all elevations, except on Mogollon Baldy. They are abundant at Gila Center and all along the valley of the Main Gila below there. It is probably a safe guess that this species occurs in every canyon in the wilderness that has alluvium. We had hoped to find T. umbrinus at high elevations and we trapped diligently there. But apparently they do not occur in the Mogollons.

mean total length of 15 adult ♂ was 201.4 (174-220); of 33 adult ♀ was 200.2 (175-228)
mean tail length of 15 adult ♂ was 57.8 (51-62); Of 33 adult ♀ was 60.0 (49-69)
68% of adults (N=49) were ♀, 32% ♂
96% of specimens were adult, 4% were subadult.

Dipodomys ordii. Ord Kangaroo Rat. This species is rare in the wilderness. The senior author collected some specimens on TJ Mesa at Gila Center several years ago and felt that this was unusual. The wilderness areas do not have enough grassy areas to support many kangaroo rats. Perhaps these have moved into Gila Center from the east.

Perognathus flavus. The Silky Pocket Mouse is another desert-grassland species which was found to occur on TJ Mesa. We have found it nowhere else.

Reithrodontomys megalotis. The Harvest Mouse is a grassland species, quite common around Silver City and areas south of there. Therefore we were very surprised to catch specimens at Gilita Creek and at Middle White Creek. The White Creek specimen is a real puzzle. How did it get through all this forest environment to this one spot? Gilita Creek is close enough to the big grasslands of Collins Park and Airplane Mesa so that they could move through here to the river, but the White Creek specimen should not have been there. It is a mouse characteristic of heavy grass or weeds and there is not much of this habitat in the wilderness.

Castor canadensis. Beavers are now common on the major tributaries of the Gila... primarily the West Fork, Middle Fork and White Creek. They are found in areas below 8,000 feet where there is deciduous riparian habitat. Five years ago they were abundant around White Creek Cabin, and destroyed most of the mature deciduous trees there. A big flood in October 1971, destroyed most of their dams and apparently quite a few beaver. They have not come back in great numbers since. There were three active beavers at White Creek Cabin this summer. Previously there were 10 to 12. The beavers have effectively destroyed most of the cottonwood and willow trees along this section of the West Fork. For some reason, they will not touch alder, preferring instead to cut young junipers. There are several larger dams in the West Fork Corral area. There are several clans of beaver in the Gila Center area. These get flooded out often, but so far, have rebuilt their dams at different places shortly thereafter.

Onychomys torridus. Grasshopper Mouse. This grassland species has been collected only on TJ Mesa at Gila Center.

Peromyscus boylii. Brush Mouse. Ninety percent of the mouse specimens trapped in canyons of the Gila tributaries below 7,000 feet are Brush Mice. The species is largely restricted to pinyon-juniper-oak woodland, but it is found less abundantly in lower portions of the ponderosa pine forest where it overlaps in range with P. maniculatus. The pine forest no doubt does not have enough cover to allow P. boylii to survive; where it must compete with another species for the same niche. The maximum elevation to which it seems to get is Maras Spring (7,950').

Sex ratios of adults were approximately 50:50. Sex ratios of young were 65% ♂, 35% ♀.

Measurements of specimens were as follows:

SA♂	Total total length=	182.9 (172-195)
N=17	Mean tail length=	96.05 (88-105)
SA♀	Mean total length=	186.4 (175-200)
N=7	Mean tail length=	96.6 (85-111)
Im♀	Total lengths=	153-159
N=2	Tail lengths=	73-79
Ad♂	Mean total length=	194.7 (183-216)
N=17	Mean tail length=	104.1 (94-117)
Ad♀	Mean total length=	196.7 (182-212)
N=17	Mean tail length=	103.4 (94-113)

Peromyscus leucopus. Normally, the white-footed mouse is a deciduous riparian species. Several specimens from the West Fork of the Gila were tentatively identified as this species. They are a bit out of their normal habitat and elevation here.

Peromyscus maniculatus. Deer Mouse. This is the common high elevation mouse in the wilderness. They occur as low as 6,850 feet at White Creek Cabin. They compete with P. boylii which occupies the same niche at lower elevations. Where the two species are sympatric, P. maniculatus occupies open hillsides and areas where there is relatively little cover. P. boylii is always captured close to logs and brush piles and is more common in the canyon bottoms. This indicates that P. boylii is dominant over P. maniculatus. In areas of allopatry both species occur throughout the ranges of habitats in each location.

Measurements of specimens were as follows:

SA♀	Mean total length=	146.9 (123-173)
N=15	Mean tail length=	62.9 (54-72)
SA♂	Mean total length=	143.3 (127-154)
N=19	Mean tail length=	63.4 (56-72)
Ad♀	Mean total length=	158.7 (144-172)
N=16	Mean tail length=	68.3 (60-78)
Ad♂	Mean total length=	151.6 (136-166)
N=53	Mean tail length=	66.5 (52-78)

56%♀, 44%♂ Sex Ratio

77%♂, 23%♀ Sex Ratio

Peromyscus maniculatus continued. It is ^{an} interesting observation that the first night of trapping usually produces many more males than females. Trapping a second night will yield more females. Apparently the males wander over a much wider area in their daily activities.

Peromyscus truei. Pinyon Mouse. This big-eared species is not common in the wilderness. It was captured at Prior Cabin, Woodland Park and Miller Spring--areas where there were oak trees mixed with the conifers. Apparently oak is critical, and it may be that they are restricted to scrub oak areas. In October we captured several specimens of this species east of Snow Lake on the slope of Loce Mountain.

Neotoma albigula. White-throated Wood Rat. Like Peromyscus, Eutamias and Myotis this genus has species pairs. N. albigula is the low elevation form common along the Main Gila and the lower sections of the West Fork and Middle Fork. It is replaced above 7,000 feet by N. mexicana a somewhat larger species. But our findings did not indicate the exact boundary line, between the two species.

Neotoma mexicana. The Mountain Wood Rat was present in most of the localities we trapped this summer. Because the springs on our traps were not strong enough, we failed to catch many of the adults, but we did capture a lot of immatures and sub-adults. In the area of sympatry this species tends to occur on the hillsides, whereas N. albigula is found in the stream valley.

Clethrionomys gapperi. Red-backed Mouse. We were interested in determining the distribution of this boreal species of microtine. On previous trips we had found it only at Bursma Campground on the Willow Creek-Mogollon road (9,000'). Here it inhabited the big rock slides on the north-facing slopes. This summer we did ^{not} catch it below 9,900 feet. It inhabited dense spruce forests on the crest, being found where there was total canopy cover and very little ground cover. This is the southernmost extension of its range in the U. S.

Ondatra zibethica. Muskrat. The distribution of muskrats needs a lot more study. Many people apparently mistake these animals for young beaver and there are not many reports. We have seen it at Hell's Canyon (Shelly Camp) and in the Gila Valley below the mouth of Mogollon Creek. Bill Rogers reported seeing it in the Little Creek Pond along the West Fork near Gila Center and at the mouth of the Middle Fork. The Gila country is apparently rather marginal habitat for this species. Cattail seems to be one of its major food items and there not many cattails in this area.

Microtus longicaudus. Long-tailed Vole. Potentially, there are four species of Microtus in the wilderness. We found only two, the common ones. M. longicaudus is the largest species and occupies thick cover at high elevations (usually 8,000 feet). We were surprised to find specimens at White Creek Cabin and Middle White Creek. But the vegetation here is definitely thick and characteristic of areas farther up the mountains. The vole has no doubt moved down White Creek from the crest where it is very common. The following data are available for this species:

Ad♂	Mean total length=166.3	(146-177)	80%♂, 20%♀ Sex Ratio
N=19	Mean tail length=54.6	(45-63)	
Ad♀	Mean total length=179.8	(148-186)	
N=5	Mean tail length=53.5	(53-73)	
SA♀	Mean total length=153.8	(125-176)	
N=12	Mean tail length=53.5	(40-61)	

Microtus mexicanus. Mexican Vole. This southern species occurs along streams in areas of lower vegetation density than M. longicaudus. It is typically captured in narrow bands of vegetation along Little Creek, Mogollon Creek, White Creek, Middle Fork of the Gila, and Iron Creek. But it also occurred at elevations sympatric with M. longicaudus where it was hard to see any difference in habitat. On several occasions the two species were trapped in adjacent traps. Generally though, M. mexicanus occurs in more sparse vegetation whereas the other species is a dense vegetation form at high elevations.

Data for this species is as follows:

Ad♀	Mean total length=139.2	(129-151)		
N=13	Mean tail length=31.7	(26-35)		
Ad♂	Mean total length=135.6	(128-144)	52%♂	48%♀
N=14	Mean tail length=29.1	(25-34)		Sex Ratio

Erethizon dorsatum. Oddly, porcupines are most common below 6,000 feet elevation, in the Gila Forest. This is definitely unusual. We did not see a single porcupine this summer. In this area you most often encounter them in woodland or grassland areas. It would be interesting to know what limits their numbers in the forest areas—possibly mountain lions. Recently the senior author talked to a "lion hunter" who said that he had never shot a lion that did not have porcupine quills in its head.

Canis latrans. Coyote. We heard coyotes often in many parts of the wilderness. We saw scats but we never did see an animal. Elevational distribution was from 7,500 feet to 10,200 feet. But they also occur much lower than this and more work will substantiate this fact. It was impossible to tell how large the packs of coyotes were. Probably they were small.

Urocyon cinereoargenteus. Gray Fox. This should be a fairly common species in the woodland areas of the wilderness. The junior author has seen them at McKenna Park, White Creek Cabin and along the Zig-Zag Trail to Woodland Park. He has also seen them at the mouth of Hell's Hole Canyon, and at the mouth of Hell's Canyon. This indicates that they also occur well into the ponderosa pine zone and thus perhaps common there as well.

Procyon lotor. Raccoons are gradually extending their range up the Gila River systems. They are now abundant on the Main Gila, they are common at Gila Center and we saw tracks at White Creek Cabin and in the Middle Fork canyons.

Bassariscus astutus. Cacomistle. Paul Harvey, the lookout at Mogollon Baldy, reported that this species was present in Mogollon. Ring-tails are common in southeastern Arizona and parts of northern Mexico. They reach their northern extent of range in this area. Several years ago Doc Campbell had a ring-tail living in his attic at the Gila Hot Springs. They are strictly nocturnal and very hard to trap, so it is possible that they are much more abundant than we suspect.

Ursus americanus. Black Bear. There was a lot of bear sign throughout the wilderness... many piles of droppings, trail signs munched by bears and areas where bears had followed trails flipping over rocks, presumably looking for invertebrate food. We saw bears in lower Turkey Creek (5,400'), Little Creek Cabin, Jerky Mountains and White Creek Cabin. The highest sighting was Iron Creek Mesa about 8,500 feet.

Mephitis mephitis. Striped skunks occur on the Main Gila but do not extend far up into the higher parts of the wilderness. They have been observed at Gila Center.

Skollagale putorius. The spotted Skunk is an uncommon species. Paul Harvey reports that they occur at the Bear Wallow Lookout north of Willow Creek. They have been trapped at Cliff in the past. We know of no other records in between.

Lynx rufus. Bobcat. We saw none all summer. They should be common in the wilderness areas. There was a rabid bobcat at Gila Center in early August 1971. It had to be dispatched because it was attacking National Park Service employees.

Felis concolor. Cougar. We saw sign on occasions and the night we spent at the mouth of Manzanita Creek we heard one "calling". One was seen in McKenna Park. This summer the Game Department research people saw three mountain lions which they tagged. Despite the feelings of local ranchers and hunters, the species is probably not very abundant. However, it occurs throughout the wilderness.

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Pecari tajacu. Javelina. The range of this species is expanding and it will be interesting to watch it spread into the wilderness. This summer, three tourists reported javelinas along NM 15 between Copperas Lookout and Gila Forks. They described them well and it is very possible that this is a valid observation. However, the occurrence within the wilderness should be listed as hypothetical for the time being. At other times they have been reported from the Twin Sisters Peak area north of Silver City and in the vicinity of Little Dry Creek on the west side of the Mogollons.

Odocoileus virginianus. White-tailed Deer. This species is uncommon in comparison with O. hemionus. The junior author has seen doe at the head of Horse Canyon, a ♂ and ♀ around the mouth of Ring Canyon on several occasions (1971), a group of 9 ♂ on Haystack Mountain (1970), a single ♀ in Woodland Park, a lone ♂ 9 miles below Little Creek Cabin (1971), several in McKenna Park (1971) and 4 ♀ near the mouth of Johnson Canyon (on the Main Gila) in 1970.

Odocoileus hemionus. Mule Deer are common wherever the forest is open enough to have browse. They were seen even on Mogollon Baldy. We saw sign nearly everywhere we went. They are especially common in McKenna Park and Woodland Park.

Corvus canadensis. Elk were observed as low as 6,900 feet near Prior Cabin (a group of 33). They were most common here and in Woodland Park. We did see them on the slope of Whitewater Baldy in dense fir forest and they occurred commonly all along the crest, coming to the lookout at Mogollon Baldy for salt.

Antilocapra americana. Antelope. A herd of 150 spent the winter of 1967 in the Gila Center area. But they have seldom been seen in recent years.

The regularly reported species of birds in the wilderness included Broad-tailed Hummingbird, Hairy Woodpecker, Western Flycatcher, Violet-green Swallow, Steller Jay, Common Raven, Pygmy Nuthatch, House Wren, Robin, Hermit Thrush, Audubon Warbler, Red-faced Warbler, and Gray-headed Junco. These are largely birds of the ponderosa pine forest and riparian habitats below 7,500 feet elevation.

The following is a summary of the species observed in the area. This should be considered to be a summary of the breeding birds of the wilderness--or at least birds that occur there during the summer months. Migratory species all not included.

Great Blue Heron....occasional in the wilderness in the deciduous riparian forest.
There is a small rookery at the Gila Center.

Mallard.....occasional; more common on the Main Gila than anywhere.

Cooper Hawk....Occasional below 8,000 feet.

Red-tailed Hawk....Uncommon throughout the wilderness.

Black Hawk....Occasional in deciduous riparian habitat.

Zone-tailed Hawk....Occasional below 8,000 feet.

Turkey Vulture.....Seen uncommonly soaring. Probably food limits their distribution.

Sparrow Hawk.....Uncommon in ponderosa pine and pinyon-juniper, but nesting here occasionally.

Blue Grouse.....Uncommon in the spruce forests. Several broods seen.

Gambel Quail.....Common in pinyon-juniper habitat and adjacent deciduous riparian forest.

Harlequin Quail.....Uncommon in deciduous riparian habitat.

Turkey.....Common in the ponderosa pine, uncommon elsewhere.

Killdeer....Occasional along the Main Gila below the mouth of Turkey Creek, common during migration.

Spotted Sandpiper.....Occasional during migration. One was seen at White Creek cabin.

Mourning Dove.....Uncommon in woodland and pine-oak areas.

Band-tailed Pigeon.....Uncommon to common depending on food sources.

Pygmy Owl.....Occasional in ponderosa pine forest.

Great Horned Owl.....Occasional below 8,000 feet.

Saw-whet Owl.....Possible, but record not verified.

Spotted Owl.....Uncommon occurrence in ponderosa pine and pinyon-juniper habitats.

Common Nighthawk.....Several each night over most habitats.

- Whip-poor-will.....common in coniferous riparian forest, occasional elsewhere.
- Poor-will.....common in woodland habitats, occasional in ponderosa pine,
- Broad-tailed Hummingbird.....common at most elevations.
- Rufous Hummingbird.....common during migration in the river valleys, first fall record on 8 July at White Creek cabin.
- Black-chinned Hummingbird.....uncommon at lower elevations, none above 8,000 feet.
- Belted Kingfisher.....occasional on the Middle Fork and around White Creek Cabin, possibly nesting here.
- Downy Woodpecker.....occasional in ponderosa pine and fir forests.
- Hairy Woodpecker.....common in nearly all habitats.
- Red-shafted Flicker.....common below 9,000 feet, uncommon up higher.
- Acorn Woodpecker.....common up to 8,500 feet.
- Yellow-bellied Sapsucker.....uncommon in the ponderosa pine and woodland, occasional at higher elevations.
- Williamson Sapsucker.....Occasional in spruce and fir forests. One unusual record from McKenna Spring which is low.
- Northern Three-toed Woodpecker.....Uncommon in the spruce forest.
- Ladder-backed Woodpecker.....Common in pinyon-juniper, occasional in ponderosa pine.
- Western Flycatcher.....Abundant in deciduous riparian forest, uncommon above this.
- Cones Flycatcher.....Occasional in coniferous riparian.
- Olive-sided Flycatcher.....Occasional in coniferous riparian habitat.
- Say Phoebe.....Occasional in deciduous riparian habitat.
- Black Phoebe.....Common in deciduous riparian habitat, particularly below Gila Forks.
- Western Wood Pewee.....Uncommon in ponderosa pine forest.
- Violet-green Swallow.....Abundant above 6,000 feet.
- Purple Martin.....Occasional in clearings below 9,000 feet.
- Water Pipit.....Rare. Two seen in McKenna Park on 12 June; unusual in this area for summer---undoubtedly late spring migrants.
- Stellar Jay.....Abundant in ponderosa pine forest, common in other conifer areas.
- Common Raven.....Uncommon throughout the forest,
- Scrub Jay.....Uncommon in woodland areas,
- Mexican Jay.....Occasional in woodland areas,
- Pinyon Jay.....Occasional wherever there are oaks,

- Clark Nutcracker.....Found irregularly and occasionally in all the conifer zones, most of
often higher up. Seen as low as 7,800 feet.
- Mountain Chickadee.....Uncommon in the conifer zones.
- Bushtit.....Uncommon in the woodland areas.
- Pygmy Nuthatch.....Abundant in ponderosa pine forest, common in other conifer zones.
- White-breasted Nuthatch.....Common in deciduous zones, uncommon in conifer areas.
- Red-breasted Nuthatch.....occasional in spruce forest.
- House Wren.....common in coniferous riparian habitat or other areas where there is
water.
- Canyon Wren.....common in steep canyons in the lower part of the Gila Wilderness.
- Robin.....Abundant in ponderosa pine, common above that.
- Hermit Thrush.....Common in coniferous forest zones.
- Townsend Solitaire.....Uncommon in ponderosa pine and fir forests.
- Western Bluebird.....common in ponderosa pine; uncommon other conifer forests.
- Mountain Bluebird.....Occasional in high elevation clearings.
- Ruby-crowned Kinglet.....uncommon in spruce and fir forests.
- Golden-crowned Kinglet.....occasional in spruce and fir forests.
- Blue-gray Gnatcatcher occasional in pine-oak woodland.
- Solitary Vireo.....Occasional in ponderosa pine forest, common during migration.
- Warbling Vireo.....Uncommon in deciduous riparian forest.
- Audubon Warbler.....common in ponderosa pine and fir, uncommon in spruce forest.
- Red-faced Warbler.....common in fir forest, frequently along shallow canyons.
Common during migration in the riparian forests.
- Grace Warbler.....Uncommon in ponderosa pine.
- Virginia Warbler.....Occasional in deciduous riparian forest.
- Painted Redstart.....common in deciduous riparian forest, occasional coniferous
riparian.
- Black-throated Gray Warbler.....occasional in woodland zones.
- MacGillivray Warbler.....occasional deciduous riparian forest.
- Brown-headed Cowbird.....occasional in clearings and parks.
- Red-winged Blackbird.....Primarily a migrant; however a few nest near Gila Center and the
lower Gila.
- Yellow-headed Blackbird Bill Rogers reported them from Gila Center, possibly nesting
there.
- Brewer Blackbird.....occasional near settlements in clearings.

Western Tanager.....common in ponderosa pine, occasional in fir zone.

Hepatic Tanager.....occasional in deciduous riparian forest.

Red Crossbill.....occasional in conifer forests,

Pine Siskin.....uncommon in spruce forest,

American Goldfinch.....occasional. Two seen at McKenna Spring on 11 June, were probably late spring migrants,

Black-headed Grosbeak.....uncommon in deciduous riparian forest.

Rufous-sided Towhee....common in deciduous riparian forest.

Green-tailed Towhee.....uncommon in clearings at high elevation.

Lark Sparrow.....occasional in clearings in the ponderosa pine forest.

Chipping Sparrow.....uncommon in the ponderosa pine forest.

Gray-headed Junco.....common in conifer forests, abundant at times along streams.

The high elevations of the wilderness limit the variety of reptiles. They were not numerous any place. The greatest number of species occur along the Main Gila between 4,000 and 5,000 feet elevation.

Potentially, there are three species of turtles, six genera of lizards (8 species) 8 colubrid, one elapid and 3 crotalid snakes, occurring in the wilderness. We did not find that many however. Much more herpetological work is necessary to adequately discuss the herpetofauna of this area.

---LIZARDS---

Urosaurus ornatus. Tree Lizard. This species occurs throughout the elevational range of the wilderness...being as common on Mogollon Baldy as it is at the mouth of Turkey Creek. We found this to be one of the most common lizards, as it is everywhere in the forested part of the southwestern New Mexico.

Sceloporus clarki. Clark Spiny Lizard. This seems to be the dominant hillside lizard especially in the pinyon-juniper-oak woodland areas. We saw a number of these in the 6,500 to 8,000 feet elevations. In the canyon bottoms of the major drainages it is replaced by the following species.

Sceloporus poinsettii. Rock Crevice Spiny Lizard. This species is common from Gila Center up the West Fork of the Gila to White Creek Cabin. It is also common in the canyon of the Middle Fork of the Gila. Probably it is the most obvious lizard of this habitat. We also collected one at the Kemp Place (DLH 201), and we know them to be common in rocky areas along the main Gila.

Sceloporus undulatus. Eastern Fence Lizard. This species is more common in the lower Gila areas, among the cottonwoods and sycamores. However we did find a few of these at most elevations below 8,500 feet. They are not found much higher than that. We caught one specimen (DLH 118) at White Creek Cabin.

Phrynosoma douglassi. Short Horned Lizard. This lizard is found everywhere in the wilderness from Mogollon Baldy down to the lowest elevations. We saw them at almost every locality that we visited. Most of these, however, were small, young ones. We recorded them from Lilly Spring, McKenna Park Airstrip (DLH 183), Snow Park (DLH 102), White Creek Cabin (DLH 117), Middle White Creek (DLH 194), and the top of West Baldy. These are always the brightly colored high elevation subspecies Phrynosoma douglassi hermandezii.

Gnemidophorus. Racerunners. We did not see many racerunners although C. exsanguis must surely occur quite commonly in the wilderness. We did see a few in the West Fork of the Gila River and at the Trotter Place. The species of this genus are hard to catch and hard to identify. Their taxonomy is in such a state of flux at the moment that specific identification would be difficult, even if we had caught them.

Crotaphytus collaris. Collared Lizard. This species occurs in the Gila Center area and elevations lower than this. It is a pinyon-juniper woodland species.

Gerrhonotus kingi. Sonoran Alligator Lizard. We collected this species at Miller Spring. They tend to be pinyon-juniper woodland forms, although they sometimes occur higher. Bill Rogers reports seeing them at Gila Center.

Thamnophis elegans. Western Garter Snake. This snake occupies a wide variety of habitats. We found them along streams where there was dense vegetation. We saw this species at White Creek Cabin, at Little Creek Cabin and at West Fork Corral (DLH 115). They probably live in all the tanks and still water ponds in the wilderness. We believe that they live on frogs and possibly salamanders. We have seen them stalking frogs in some of the ponds.

Thamnophis marcianus. Checkered Garter Snake. This species tends to occur higher in elevation in the wilderness than the previous one, although it is sympatric with it at a number of localities such as White Creek Cabin and Trotter Place (DLH 57). It does not occur as frequently in the water as in the dense vegetation along the margins.

Thamnophis cyrtopsis. Black-necked Garter Snake. Of the garter snakes, this one occurs the lowest in elevation in the wilderness. It occurs more frequently in rocky side canyons which have more intermittent stream flow. We have found it most common in small pools of water here. The Main Gila and Turkey Creek are areas of greatest abundance.

Diadophis punctatus. Eastern Ring-necked Snake. This species is found occasionally in deciduous riparian habitats. Bill Rogers reports seeing at least five of this species in the Gila Cliff Dwellings National Monument during the last three years.

Lampropeltis pyromelana. Arizona Mountain King Snake. This species is most common between 4,000 and 7,000 feet elevation. They are seen regularly near Gila Center and there is a report of a "coral snake" along the West Fork of the Gila this summer. This was no doubt a king snake, for coral snakes do not get that high and the average person does not differentiate the two species. They have been seen two miles up the Middle Fork from its mouth and two were seen on the National Monument this year (Bill Rogers). Stebbins (1954) says that they occur as high as 7,500 feet. Oddly, most observations are made in May and June.

Masticophis taeniatus. Desert Striped Whipsnake. This species inhabits woodland areas and deciduous riparian habitat. Bill Rogers reports seeing the species in the Gila Center area. We have seen it in previous years along streams on the west side of the wilderness in pinyon-juniper habitat.

Pituophis melanoleucus. Gopher Snake. In most areas of the western U.S. this is THE common snake. However, this does not seem to be true in the wilderness. It is most often seen in the pinyon-juniper woodlands. Individuals are frequently seen at Gila Center and regularly seen along the Main Gila.

Salvadora hexalepis. Western patch-nosed Snake. This species reaches its upper elevational range in the wilderness. One was observed in the canyon of the Middle Fork below the mouth of Little Bear Canyon on 2 June, 1971 by the senior author.

Crotalus molossus. Black-tailed Rattlesnake. This is the common poisonous snake in the area studied. The Middle Fork seems to be the area of highest abundance, or least the area where they are most commonly seen. It is called the timber rattler by many people, an unfortunate misnomer that applies to an eastern species. It is the species of rattlesnakes usually seen in the national monument.

Crotalus viridis. Western Rattlesnake. This is a low elevational species occupying grassland zones usually. We did catch one at the Kamp Place (DLH 200), a rather unusual place to find one of these.

Crotalus lepidus. Green Rock Rattlesnake. This species is known in the wilderness from areas above 7,000 feet elevation. It is common in shaded, rocky canyon bottoms. However, we did observe one on a talus slope at the head of Water Canyon in 1970.

Microioides euryxanthus. Coral Snake. Several specimens in the WNMU collection are from Lower Turkey Creek. A dead one was found on the Main Gila four miles above Sapillo Creek. The species seems to be restricted to the pinyon-juniper zone in southwestern New Mexico. Fall 1972 was a good year for coral snakes; more were reported than any other time we know of. Specimens were captured at Riverside (near Cliff), above Cliff along the river and near Bullard Peak in the Burro Mountains.

---TURTLES---

Kinosternon sonoriense. Sonoran Mud Turtle. We photographed one of these in the hot spring of the Main Gila below the junction of the East and West Forks in April 1971. They are common in the Gila Valley near Cliff and it is probable they occur between these areas as well. We suspect that they also occur at Gila Center.

Terrapene ornata. Box Turtle. Because people pick these up so often and liberate them capriciously, it is hard to establish the true range of this species. Bill Rogers saw them on two occasions near Gila Center. They are the only species of turtle which moves overland to any extent, so it is possible that they occur in many places in the pinyon-juniper zone. We did not see any turtles in the wilderness this summer.

Prionyx ferox. Spiny Soft-shelled Turtle. This species occurs in the Main Gila near the mouth of Mogollon Creek. It may occur farther upstream in the wilderness.

The number of amphibians in the wilderness is restricted by the paucity of water and the low temperature of the water in most of the streams. Most amphibians occur in ponds or tanks away from these streams.

Ambystoma tigrinum. Tiger Salamander. This is the common salamander of New Mexico. It should occur in almost every stock tank in the wilderness. We found them at Miller Spring (DLH 218) and at Little Turkey Park (DLH 224, 225). But they should also be present in Woodland Park Tank and any other pond of this sort.

One of the fire fighters this summer reported finding a salamander under a log on the Mogollon Crest in late July. From his description, it was not a tiger salamander, the only logical one to be there. This raises the possibility of it being another species...and most likely a different species, such as the endemics in the Sacramento Mountains and the Jemez Mountains. If so, then it may even be a restricted species. We were not on the crest after the rains started, so we could not substantiate this. But it is an exciting possibility. Unfortunately the fire fighter did not bring in the specimen.

Bufo woodhousei. Woodhouse Toad. We captured this species near McKenna Spring (DLH 34). This species is found commonly along the Main Gila at lower elevations. Bill Rogers reports them as being common at Gila Center. Apparently there are elevational limitations, and it is replaced by Bufo microscaphus at elevations above 8,000 feet.

Bufo punctatus. Desert Toad. This is a low elevation species which is characteristic of grasslands and pinyon-juniper woodlands. We captured one very small one (DLH 174) on the Middle Fork near the mouth of Clear Creek. They are very abundant at Gila Center (Bill Rogers). Apparently they have dispersed up the Middle Fork. How far?

Bufo microscaphus. Southwestern Toad. We found them in a variety of places--McKenna Park Airstrip (DLH 184), Miller Spring (DLH 219), Little Turkey Park (DLH 226, 227), West Fork Cerral, Little Creek Cabin, Middle Fork near Clear Creek. It seems to be the most abundant toad in the wilderness. The species is sympatric with Bufo woodhousei along the Main Gila, but tends to replace it at higher elevations.

Scaphiopus hammondi. Spadefoot. Theoretically we should have seen these animals, but we did not. Probably, the rainy season had not progressed far enough for them to come out of torpidity. We terminated our study about the time the soaking rains began. They occur around Gila Center commonly, especially when grass was being irrigated.

Hyla arenicolor. Canyon Tree Frog. This is the common tree frog of the wilderness, occurring in our experience, below 8,000 feet. We found them at Woodland Park (DLH 49, 52), at Prior Cabin (DLH 58), at Iron Creek Mesa Lake (DLH 84, 85) and at McKenna Spring (DLH 31). This frog occurs around marshy borders and calls loudly during the spring and early summer months. At McKenna Spring they were sympatric with the following species, a fact showing the specific nature of the two taxa. The two differ in color pattern and their calls are distinctly different. The latter form has a much deeper, banjo-like call and this seems to be louder as well.

Hyla wrightorum. Mountain Tree Frog. We found this species at McKenna Spring. We collected four (DLH 32, 35, 36, 37). Dale Zimmerman has reported finding them at Mill Creek, just north of Pinos Altos, the southernmost extent of their range in New Mexico. They are a northern species that just reaches into the Gila Wilderness area.

Pseudacris nigrita. Swamp Cricket Frog. This very small frog is not common in the wilderness. In 1963 the senior author collected them in a pond in the McKenna Park Airstrip (it was dry when we visited it this year). We did however collect cricket frogs in Iron Creek Mesa Lake. They were not singing but they certainly seemed to be abundant.

Rana pipiens. Leopard Frog. This is a very common frog along the main branches of the Gila River. They were the only frog at White Creek Cabin, at Hallmoon Park (DLH 154), Little Creek Cabin and at the Meadows (DLH 176). These frogs are variable in their spotting and dorsal coloration and this has caused considerable confusion among taxonomists. However, Rana pipiens is extremely variable throughout its range and we feel that the differences are not worthy of specific distinctions. Stebbins (1954) cites Rana tarahumarae as occurring at the XSX Ranch, near Gila Center. Intensive collecting by herpetologists over the last 10 years has failed to yield a single specimen of this Mexican species. Therefore, it is frequently and unofficially agreed that the species does not really occur on the Gila country, or anywhere in the U.S. for that matter.

Rana catesbeiana. Bullfrog. This frog is not native to New Mexico, but it has been widely introduced all over southwestern New Mexico. It is common in the ponds near Gila Center and downstream from there. We did not encounter any in the wilderness however. This is not surprising.

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