

APPENDIX B: Environmental Resources

Farmer's Mutual Ditch Rehabilitation Farmington, NM

August 2020



**US Army Corps
of Engineers** ®
Albuquerque District

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Biological Assessment

Biological Assessment for Farmers Mutual Ditch San Juan County, New Mexico

Background and Description of Proposed Action

This Biological Assessment evaluates the effect of the Farmers Mutual Ditch acequia rehabilitation project on all federally listed endangered and threatened species with potential to occur in the project area, in accordance with Section 7 of the Endangered Species Act.

The U.S. Army Corps of Engineers (USACE), Albuquerque District, proposes to rehabilitate the ditch by placing two segments into pipe as part of the Acequia Rehabilitation Program. This program is authorized under Section 1113 of the Water Resources Development Act (WRDA) of 1986 (Public Law 99-662; 33 U.S.C. 2201 et. seq. as amended).

The Farmers Mutual Ditch was chartered in the 1880s and supplies irrigation water for 600 users located along its approximate 22 mile length as it courses through the north floodplain of the San Juan River beginning at Farmington, New Mexico. The ditch has two diversion points: one on the Animas River just below the Farmington municipal sewage treatment plant; and the second diversion on the San Juan River about ½ mile downstream of the State Highway 371 bridge. The acequia irrigates 4,200 acres of land at an allotted rate of 3.1 acre-feet per acre annually.

Two previous USACE projects rehabilitated the ditch heading (diversion) below the State Highway 371 bridge (USACE 1988) and improved conveyance on 3.2 miles of the ditch in the vicinity of Kirtland by lining it with concrete and replacing gates (USACE 2002).

The current project is located west of the city of Farmington along the edge of the San Juan River floodplain (Figure 1). An approximately 2-mile portion of Farmers Mutual Ditch that runs below steep bluffs is affected by rock slides. In the past, the rock slides have completely filled the irrigation canal, reducing the water supply to Association members and necessitating frequent maintenance.

In the preferred alternative for this project, USACE proposes to replace two segments totaling approximately 2 miles of earthen ditch with buried irrigation pipe. Irrigation pipe eliminates entry of erosional material where the ditch is at the base of steep slopes. Piping the ditch would alleviate the need for frequent maintenance to clear channel blockages from debris and would provide for more efficient distribution of irrigation water to the users.

The proposed project would take place during the non-irrigation season, between the end of October and mid-March, which is also outside the nesting season for migratory birds. Equipment would access the ditch by paved roads, existing unpaved maintenance roads paralleling the ditch, or on the adjacent graded ditch berm. A staging area has been identified; it is a barn lot near the access road and is outside the riparian zone.

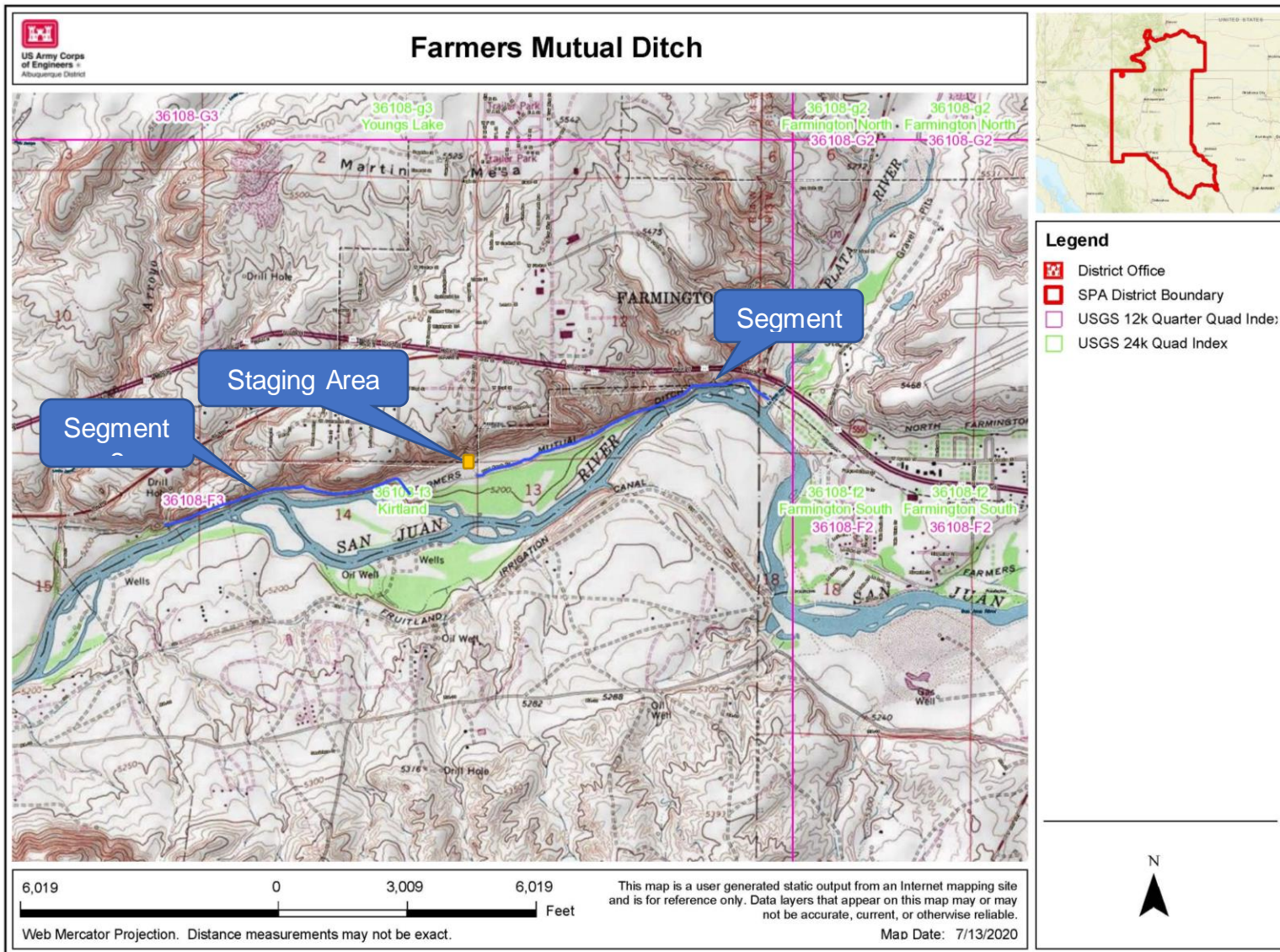


Figure 1: Location of Farmers Mutual Ditch project.

Listed Species in the Project Area

The USACE project biologist obtained a species list from IPaC on January 10 and an update on July 10, 2020 (Consultation 02ENNM00-2020-SLI-0342). The Biota Information System of New Mexico (BISON-M) and the New Mexico Rare Plant Website were also consulted. Federal endangered and threatened species are listed in Table 1.

Table 1: Federal endangered and threatened species

Common Name	Scientific Name	Federal Status (USFWS) ^a	State of New Mexico Status (NMGF) ^b
Canada Lynx	<i>Lynx canadensis</i>	T	---
New Mexico Meadow Jumping Mouse	<i>Zapus hudsonius luteus</i>	E	---
Southwestern Willow Flycatcher	<i>Empidonax traillii extimus</i>	E	E
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	T	---
Colorado Pikeminnow	<i>Ptychocheilus lucius</i>	E	E
Razorback Sucker	<i>Xyrauchen texanus</i>	E	---
Zuni Bluehead Sucker	<i>Catostomus discobolus yarrowi</i>	E	---
Knowlton's Cactus	<i>Pediocactus knowltonii</i>	E	---
Mancos Milk-vetch	<i>Astragalus humillimus</i>	E	---
Mesa Verde Cactus	<i>Sclerocactus mesae-verdae</i>	T	---

Critical habitat for the Colorado pikeminnow is present in the project area, in the river channel. No other critical habitats are present.

Migratory birds of conservation concern include the Pinyon Jay (*Gymnorhinus cyanocephalus*) and Virginia's Warbler (*Vermivora virginiae*). The San Juan River has been noted as wintering habitat for Bald eagles (*Haliaeetus leucocephalus*), which are protected under the Bald and Golden Eagle Protection Act. Several additional species are listed by the New Mexico Department of Game and Fish and will be addressed in the Special Status Species section of the project Environmental Assessment.

The potential of the project to affect these species was evaluated following a reconnaissance visit on June 8 and exploratory bird surveys on June 20 and July 8. Based on the reconnaissance visit, habitat along the ditch itself was deemed marginally suitable for riparian bird species, and likely not utilized for nesting; whereas patches of riparian habitat in the San Juan River floodplain adjacent to but below the ditch were

moderately suitable. Based on the proximity of habitat patches along the ditch to floodplain riparian habitat, and the potential for utilization as foraging habitat, surveys for yellow-billed cuckoo and willow flycatcher were advised.

Description of Habitat in the Project Area

The ditch banks are vegetated to varying degrees, with patches of sparse to dense coyote willow (*Salix exigua*) intermixed with sparse small tamarisk (*Tamarix* sp.) and Russian olive (*Elaeagnus angustifolia*) trees. A few large cottonwoods (*Populus deltoides* subsp. *wislizeni*) grow on the spoil bank berm between the ditch bank and the floodplain riparian zone below.

Large stretches of the ditch banks are nearly bare from recent maintenance or have young resprouting growth of willows, or are heavily infested with Russian knapweed (*Acroptilon repens*) and hoary cress (*Lepidium* or *Cardaria* sp.), highly invasive species listed by the State of New Mexico as noxious weeds. A few sections of ditch bank have perennial herbaceous vegetation- sedges (*Carex* sp.), non-native creeping bentgrass (*Agrostis stolonifera*), showy milkweed (*Asclepias speciosa*), goldentop (*Euthamia occidentalis*), licorice (*Glycyrrhiza lepidota*) and dogbane (*Apocynum cannabinum*). Upland shrubs including rabbitbrush or chamisa (*Ericameria nauseosa*) and fourwing saltbush (*Atriplex canescens*) are common on the ditch berm slopes.

The adjacent floodplain riparian habitat patches are dominated by Russian olive beneath a mature cottonwood gallery; overstory cottonwood canopy cover is less than 20%. There are occasional Goodding's willows (*Salix gooddingii*), New Mexico olive (*Forestiera pubescens*) and tamarisk in the shrub layer.

On June 8, tamarisk leaf beetle larvae were observed in tamarisk shrubs along the ditch. By July 8, about 50% of the tamarisk in the project area was brown.

Project Description and Direct and Indirect Impacts of the Proposed Action

The new pipe would be placed in the current ditch alignment and bedded in sand and gravel. The ditch would be backfilled using onsite inorganic soil materials as much as possible. Direct impacts associated with piping the ditch include soil disturbance and loss of ditch bank vegetation, either by direct removal, disturbance by machinery, or burial. Vegetation removal would be kept to a minimum and no mature cottonwood trees would be removed. Because the project would take place during the late fall through late winter, direct impacts to wildlife would be negligible. Migratory birds would not be affected as they are not present at this time of year.

Indirect impacts of piping the ditch include potential loss of ditch bank hydrophytic vegetation from seepage elimination. The ditch supports patches of willows interspersed

with tamarisk and Russian olive in a narrow band (less than feet wide), particularly along the bluff side of the ditch.

However, periodic rockfall and debris slides cause disturbance to both sides of the ditch. Once the ditch has been piped and covered, natural rockfall would continue, but the need for maintenance would decrease. The top of the spoil bank ditch berm would continue to be serve as a maintenance/access road, but its sloping sides would revegetate over time.

Segment 1 of the ditch is only slightly higher in elevation than the floodplain and mature riparian trees are expected to be able to access groundwater and survive the loss of seepage water when the ditch is piped. Seepage from the ditch is not a significant source of water to the floodplain; the river and groundwater table provide the water that sustains floodplain vegetation.

Ditch segment 2 is perched higher above the floodplain. A few mature cottonwood trees growing on the berm between the ditch and the floodplain riparian zone may not survive the loss of water supply when seepage from the ditch is eliminated. Similar to segment 1, seepage from the ditch is not a significant water source for the floodplain, but does support a band of willows and other riparian vegetation. Indirect loss of approximately 2,400 feet of ditch bank willows and 2-3 mature cottonwoods may result from elimination of seepage from ditch.

Effects Determination

Potential effects to listed species are summarized in **Table 2** and discussed in text below.

Table 2: T&E Species Effects Determinations

Species/Critical Habitat	Effect Determination	Rationale
Canada Lynx <i>Lynx canadensis</i>	No effect	Habitat for the lynx (boreal or subalpine forest) is not present in project area.
New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i>	No effect	Habitat at project site is unsuitable; no herbaceous or shrub-scrub wetlands present. Herbaceous vegetation along ditch occurs only in a narrow strip and is frequently disturbed; ditch is not a permanent water source and is “perched” above the river, disconnected from floodplain.
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i>	May affect, not likely to adversely affect	Project would take place outside of nesting season; habitat along ditch is marginal, non-continuous, and largely separated from the floodplain riparian area by the ditch berm. Only minor loss of foraging habitat is anticipated.

		Ditch banks are frequently disturbed due to ongoing maintenance needs and clearing rockfall from ditch. Two surveys during breeding season failed to detect any willow flycatchers.
Yellow-billed Cuckoo <i>Coccyzus americanus</i> , Western U.S. DPS	May affect, not likely to adversely affect	Project would take place outside of nesting season; habitat along ditch is marginal, non-continuous, and largely separated from the floodplain riparian area by the ditch berm. Only minor loss of foraging habitat is anticipated. Ditch banks are frequently disturbed due to ongoing maintenance needs and clearing rockfall from ditch. Two surveys during breeding season failed to detect any cuckoos.
Colorado Pikeminnow <i>Ptychocheilus lucius</i>	No effect	Project would take place during non-irrigation season while the ditch is dry, would not touch the river channel, and would not alter the diversion, flow or circulation of water. No change from baseline conditions.
Colorado Pikeminnow <i>Ptychocheilus Lucius</i> critical habitat	No effect	Project would take place during non-irrigation season while the ditch is dry, would not touch the river channel, and would not alter the diversion, flow or circulation of water. No change from baseline conditions.
Razorback Sucker <i>Xyrauchen texanus</i>	No effect	Project would take place during non-irrigation season while the ditch is dry, would not touch the river channel, and would not alter the diversion, flow or circulation of water. No change from baseline conditions.
Zuni Bluehead Sucker <i>Catostomus discobolus yarrowi</i>	No effect	Project would take place during non-irrigation season while the ditch is dry, would not touch the river channel, and would not alter the diversion, flow or circulation of water. No change from baseline conditions.
Knowlton's Cactus <i>Pediocactus knowltonii</i>	No effect	Habitat for this cactus is not present; project area is too highly disturbed; ditch banks where vegetated present too much competition from hydrophytic vegetation or prevalent noxious/invasive species. No cacti of any species were encountered in botanical survey along the ditch.
Mancos Milk-vetch <i>Astragalus humillimus</i>	No effect	Habitat for this species is not present; project area is too highly disturbed; ditch banks where vegetated present too much competition from hydrophytic vegetation or prevalent noxious/invasive species. No <i>Astragalus</i>

		species were encountered on botanical survey along the ditch.
Mesa Verde Cactus <i>Sclerocactus mesae-verdae</i>	No effect	Habitat for this cactus is not present; project area is too highly disturbed; ditch banks where vegetated present too much competition from hydrophytic vegetation or prevalent noxious/invasive species. No cacti of any species were encountered in botanical survey along the ditch.

Endangered and Threatened Species Narratives

Endangered plants: Mancos milk-vetch, Mesa Verde cactus, and Knowlton’s cactus

These species are all narrow endemics restricted to specific geologic formations. The Farmers Ditch project site is situated on the Kirtland and Fruitland geologic formation, whereas these endangered plants occur on different formations. No cacti nor *Astragalus* species were found during the botanical reconnaissance survey conducted by the Corps. The ditch banks have experienced too much disturbance, and the vegetation that occurs on the ditch banks with its prevalence of invasive species presents too much competition for these endangered plant species to survive. Therefore, due to lack of suitable habitat in the project area, **there would be no effect to these three species.**

Mancos milk-vetch distribution closely follows a narrow band of Mesozoic (Point Lookout and Cliff House) sandstone along a 10-mile section of the Hogback geologic formation. The distributional range of *A. humillimus* has not changed since the recovery plan was finalized in 1989 (USFWS 2011a).

Mesa Verde cactus habitat is sparsely vegetated low rolling clay hills formed from the Mancos or Fruitland shale formations at 1,500-1,700 m (4,900-5,500 ft). The soils are highly alkaline, gypsiferous, and have shrink-swell potentials that make them harsh sites for plant growth (New Mexico Rare Plant Technical Council (NMRPTC) 1999).

Knowlton’s cactus occurs within a single natural population in northern San Juan County, New Mexico. The site is on rolling, gravelly hills in a pinion-juniper-sagebrush community at about 1,900 m (6,200-6,300 ft) (NMRPTC 1999).

Endangered fish: Colorado pikeminnow, razorbacksucker, and Zuni Bluehead Sucker

These endangered fish **would not be affected** by the proposed action because of the timing of work when the ditch is dry and because aquatic habitat including the river channel and diversion structures would not be affected. There would be no alteration to the diversion, flow or circulation of water resulting from the project.

Critical habitat for the pikeminnow would be unaffected; there would be no alteration of riverine habitats (eddies, backwaters, shorelines, runs, and inundated floodplains for spawning; USFWS 1994) Conditions after project completion would be unchanged from the baseline.

The Zuni bluehead sucker is endemic to the Little Colorado River drainage of west-central New Mexico and east-central Arizona (Propst et al. 2001). Critical habitat has been designated in McKinley and Cibola Counties, NM (USFWS 2016). Habitat for the Zuni bluehead sucker is not present in the San Juan River.

The Razorback sucker and Colorado pikeminnow are endangered warmwater fishes of the Colorado River Basin. Habitat for both species exists in the San Juan River, and critical habitat for the pikeminnow is in the river channel adjacent to Farmers Mutual Ditch. The pikeminnow, formerly known as squawfish, was thought to be extirpated in New Mexico until it was found during a 1987 fisheries survey on the San Juan River below Farmington (USACE 1988). Three wild populations of Colorado pikeminnow are currently found in the Green, upper Colorado, and San Juan River subbasins. The San Juan River Recovery Implementation Program is one of two programs working to recover the pikeminnow and recovery goals for the subbasin have been partially met (USFWS 2011b).

The San Juan River subbasin population of razorback sucker has been consistent in size, but also consists almost entirely of hatchery-reared individuals. Only a small percentage of the population is spawning and juvenile recruitment has rarely been documented (USFWS 2018).

Endangered Mammals: Canada lynx and New Mexico Meadow Jumping Mouse

Habitat for the **Canada lynx** occurs at high elevations far from the project area. The lynx inhabits boreal forest or its subalpine counterpart in the Southern Rocky Mountains, and frequents areas with deep winter snow and high population density of snowshoe hares (USFWS 2020).

The New Mexico jumping mouse utilizes riparian communities along streams, wetlands, or ditches that contain persistent emergent herbaceous wetlands or scrub-shrub wetlands composed of willows and alders with an understory of primarily forbs and sedges. It especially uses microhabitats of tall dense sedges on moist soil along the edge of permanent water (USFWS 2014, 2020b). While there are patches of dense herbaceous vegetation along the Farmers Ditch, there are no emergent herbaceous wetlands or shrub-scrub wetlands that have an understory of forbs and sedges as described. The ditch is not a permanent water source that would allow full development of wetland vegetation. Also the ditch banks are frequently disturbed and the ditch is disconnected from the floodplain by its spoil bank berm.

Endangered and threatened birds: Southwestern willow flycatcher and Yellow-billed cuckoo

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) and Yellow-billed Cuckoo (*Coccyzus americanus*) are Neotropical migrants that rely on riparian habitat for nesting. Summary information for each species' life history and habitat is provided below. Because the Farmers Mutual Ditch rehabilitation project would take place outside the migration and nesting season, **there would be no direct adverse effects** to these birds.

Indirect effects to riparian habitat along the ditch may occur due to the elimination of seepage from the ditch, as described above under Impacts of the Proposed Action. The effect on the flycatcher and cuckoo would be minor loss of foraging habitat, if the birds are present in the project area. Because riparian habitat along the ditch is adjacent to San Juan River floodplain riparian habitat, USACE in discussion with the NMESFO determined that surveys would be prudent to attempt to learn if the birds were using this habitat. Two exploratory surveys conducted using call playback on June 20 and July 8, 2020 did not detect either species. This was not a full protocol set of surveys and early migrant flycatchers or late nesting cuckoos could have been missed.

Based on the absence of direct adverse impacts, non-detection of the birds during exploratory surveys, and potential minor indirect impacts on habitat, the Corps determines that the proposed project **may affect, but is not likely to adversely affect**, the Southwestern willow flycatcher and Yellow-billed cuckoo.

The Southwestern willow flycatcher was listed as federally endangered in 1995. The flycatcher occurs in southern California, Arizona, New Mexico, southern portions of Nevada and Utah, and southwestern Colorado (USFWS 1995). These birds are Neotropical migrants, arriving in New Mexico by early to mid-May. Breeding occurs in late May and early June. Young are fledged in late June or early July. The SWFL departs New Mexico for wintering grounds in late September (USFWS 2002).

Nesting habitat for the flycatcher varies greatly by site and includes plant species such as willow (*Salix spp.*), saltcedar (*Tamarix spp.*), box elder (*Acer negundo*), and Russian olive (*Elaeagnus angustifolia*). Nests generally occur adjacent to or over water or saturated substrates (Paxton *et al.* 2007). Along the Middle Rio Grande, breeding territories were found in young and mid-age riparian vegetation dominated by dense growths of willows at least 15 feet high, as well as in mixed native and exotic stands dominated by Russian olive and saltcedar.

There is no designated critical habitat for the flycatcher in San Juan County and habitat utilization by flycatchers along the San Juan is less well documented compared to the Rio

Grande. Flycatchers may occur in riparian habitats along the San Juan during spring or fall migration periods or during the breeding season, but there have been no surveys in the immediate project area other than the two conducted by USACE in 2020. Other surveyors detected non-territorial flycatchers lower in the San Juan Basin during the first survey period in May 2019; survey sites were tributary washes and a perennial pond with riparian vegetation (Ecosphere Environmental Services 2019). These off-channel sites were 9-15 miles distant from the downstream end of the Farmers Ditch project.

The Western population of the Yellow-billed cuckoo was listed as a federally threatened species in 2014 (USFWS 2014). Yellow-billed cuckoo has declined precipitously throughout its range in southern Canada, the United States, and northern Mexico. Breeding populations exist in California, Arizona, New Mexico and Colorado, as detailed in Halterman et al (2015). In New Mexico, cuckoos breed on the Gila River and the Middle Rio Grande (Woodward et al. 2003, Ahlers and Moore 2012).

Yellow-billed cuckoos are riparian obligates and nest in dense riparian woodlands with native trees and shrubs in stands 20 hectares or more in extent (Halterman et al., 2015). They arrive in New Mexico beginning in late April and early May and nest from late May through August (Howe, 1986). Mature cottonwood forests with well-developed willow understory appear to be important characteristics of habitat for the Yellow-Billed Cuckoo (Gaines and Laymon, 1984). While willows appear to be a preferred nest tree, cuckoos will also nest in dense saltcedar stands (Howe, 1986). Nests are constructed of sticks and are located in dense foliage. Cuckoos may nest up to three times a year, with a clutch size of two to six eggs. They may occasionally parasitize nests of other birds, particularly when food is abundant. Yellow-billed cuckoos feed primarily on caterpillars but will also consume bird eggs, frogs, lizards, berries, and other fruits (Erlich et al., 1988). They forage primarily in the foliage layer of shrubby and woody vegetation. Populations fluctuate markedly in response to variation in caterpillar abundance. Population declines resulting from loss or disturbance of riparian habitat have been consistently reported in the West (Finch, 1992).

The San Juan River corridor in the Farmington area was included in an initial critical habitat proposal, but this reach was omitted from the final critical habitat (USFWS 2020). Thus, there is no critical habitat for the cuckoo in San Juan County. Similar to the flycatcher, surveys for cuckoo have not been completed in the project area except for those done by USACE.

Conclusion

This concludes the USACE, Albuquerque District's biological assessment for the Farmers Mutual Ditch acequia rehabilitation project. We are requesting informal consultation and concurrence under section 7 of the Endangered Species Act. In summary, the project may affect, but is not likely to adversely affect the Southwestern willow flycatcher and yellow-billed cuckoo due to project timing outside of nesting season and minor indirect impacts to riparian vegetation along the ditch. The project would have no effect on other listed species with potential to occur in the project area or their critical habitats. The project would not affect endangered plants due to absence of suitable habitat (Knolton's cactus, Mesa Verde cactus, Mancos milk-vetch); would not affect endangered fishes or critical habitat due to project timing and location outside aquatic habitat (Colorado pikeminnow, razorback sucker, Zuni bluehead sucker); and would not affect endangered mammals due to absence of suitable habitat (Canada lynx, New Mexico meadow jumping mouse).

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New Mexico Rare and Endangered Plant Species in San Juan County

NMRPTC 2020

Scientific Name	Common Name	NMRPTC	FWS	State of NM	Habitat and potential occurrence in project area
<i>Abronia bigelovii</i>	tufted sand verbena	R			No: Hills and ridges of gypsum in the Todilto Formation
<i>Aliciella cliffordii</i>	Clifford's glila	R			No: Red, sandy or clay soils in badlands of the Wingate Formation and the Owl Rock Member of the Chinle Formation
<i>Aliciella formosa</i>	Aztec glila	R		E	No: Salt desert scrub communities in soils of the Nacimiento Formation
<i>Allium gooddingii</i>	Goodding's onion	R		E	No: Moist drainage bottoms in the shade of spruce-fir and mixed conifer forest
<i>Asclepias sanjuanensis</i>	San Juan milkweed	R			Possible but not found: Sandy loam soils, usually in disturbed sites, in juniper savanna and Great Basin desert scrub
<i>Astragalus chuskanus</i>	Chuska milkvetch	R			No: Degraded Chuska sandstone in openings of Ponderosa pine and montane coniferous forest
<i>Astragalus cliffordii</i>	Clifford's milkvetch	R			No: Rimrock ledges of the Mesa Verde Group, in sagebrush and pinyon-juniper woodland
<i>Astragalus cottamii</i>	Cottam's milkvetch	R			No: Rimrock habitats within weathered depressions and crevices in Cretaceous sandstone in piñon-juniper woodland
<i>Astragalus humillimus</i>	Mancos milkvetch	R	E	E	No: Mesozoic (Point Lookout and Cliff House) sandstone along a 10-mile section of the Hogback
<i>Astragalus micromerius</i>	Chaco milkvetch	R			No: Gypseous or limy sandstone outcrops (usually blended with Todilto gypsum or limestone) in piñon-juniper woodland or Great Basin desert scrub
<i>Astragalus naturitensis</i>	Naturita milkvetch	R			No: Sandstone ledges and rimrock along canyons in piñon-juniper woodland
<i>Astragalus oocalycis</i>	Arboles milkvetch	R			No: Seleniferous clay soils (Mancos Formation) with sagebrush, piñon-juniper woodland, or transitional areas between p-j and ponderosa pine

<i>Erigeron rhizomatus</i>	Zuni fleabane	R	T	E	No: Nearly barren clay hillsides with soils derived from shales of the Chinle or Baca formations
<i>Pediocactus knowltonii</i>	Knowlton cactus	R	E	E	No: occurs naturally on a single site, rolling, gravelly hills in a pinion-juniper-sagebrush community
<i>Phlox cluteana</i>	Navajo Mountain phlox	R			No: Light to heavy shade on sandy soils in ponderosa pine forest
<i>Proatriplex pleiantha</i>	Mancos saltplant	R			No: Desert badlands of Colorado Plateau on saline clay soils of the Mancos and Fruitland shale formations
<i>Puccinellia parishii</i>	Parish's alkali grass	R		E	No: Alkaline springs, seeps, and seasonally wet areas
<i>Sclerocactus cloverae</i> ssp. <i>brackii</i>	Brack hardwall cactus	R		E	No: Sandy clay strata of the Nacimiento Formation in sparse shadscale scrub
<i>Sclerocactus mesae-verdae</i>	Mesa Verde cactus	R	T	E	No: alkaline, gypsiferous sparsely vegetated low rolling clay hills formed from the Mancos or Fruitland shale formations

Biota Information System of New Mexico

(BISON-M, 2020)



All Species San Juan

<u>Taxonomic Group</u>	<u># Species</u>	<u>Taxonomic Group</u>	<u># Species</u>
Amphibians	8	Birds	281
Coleoptera; beetles	16	Crustaceans	2
Ephemeroptera; mayflies	21	Fish	25
Lepidoptera; moths and butterflies	125	Mammals	76
Misc. Arachnids	1	Molluscs	17
Odonata; dragonflies	30	Orthoptera; grasshoppers & crickets	56
Reptiles	26	Spiders	2

TOTAL SPECIES: 686

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>US FWS</u>	<u>Critical Habitat</u>	<u>SGCN</u>	<u>Photo</u>
Black-tailed Jackrabbit	Lepus californicus					View
Desert Cottontail Rabbit	Sylvilagus audubonii					View
Nuttall's Cottontail Rabbit	Sylvilagus nuttallii					No Photo
Dusky Shrew	Sorex monticola					No Photo
Big Free-tailed Bat	Nyctinomops macrotis					No Photo
Brazilian Free-tailed Bat	Tadarida brasiliensis					View
Hoary Bat	Aeorestes cinereus					No Photo
Pallid Bat	Antrozous pallidus					View
Pale Townsend's Big-eared Bat	Corynorhinus townsendii				Y	View
Big Brown Bat	Eptesicus fuscus					No Photo
Spotted Bat	Euderma maculatum	T			Y	View
Silver-haired Bat	Lasiorycteris noctivagans					No Photo
California Myotis	Myotis californicus					No Photo
Western Small-footed Myotis	Myotis ciliolabrum					View
Long-eared Myotis	Myotis evotis					No Photo
Fringed Myotis	Myotis thysanodes					No Photo
Long-legged Myotis	Myotis volans					View
Yuma Myotis	Myotis yumanensis					View
Canyon Bat	Parastrellus hesperus					View
Coyote	Canis latrans					View
Common Gray Fox	Urocyon cinereoargenteus					View

All Species San Juan

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Kit Fox	Vulpes macrotis					View
Red Fox	Vulpes vulpes					View
Canada Lynx	Lynx canadensis		T			No Photo
Bobcat	Lynx rufus					View
Mountain Lion	Puma concolor					View
Striped Skunk	Mephitis mephitis					View
Western Spotted Skunk	Spilogale gracilis					View
North American River Otter	Lontra canadensis				Y	View
Long-tailed Weasel	Mustela frenata					View
American Badger	Taxidea taxus					View
Ringtail	Bassariscus astutus					View
Common Raccoon	Procyon lotor					View
Black Bear	Ursus americanus					View
Feral Horse	Equus caballus					No Photo
Pronghorn	Antilocapra americana americana					View
Barbary Sheep	Ammotragus lervia					No Photo
Elk	Cervus canadensis nelsoni					View
Mule Deer	Odocoileus hemionus					View
American Beaver	Castor canadensis					View
Long-tailed Vole	Microtus longicaudus longicaudus; alticola; baileyi; mordax					No Photo
Navajo Mogollon Vole	Microtus mogollonensis navaho					No Photo
Montane Vole	Microtus montanus fusus					No Photo
Meadow Vole	Microtus pennsylvanicus					No Photo
White-throated Woodrat	Neotoma albigula					View
Bushy-tailed Woodrat	Neotoma cinerea					No Photo
Mexican Woodrat	Neotoma mexicana mexicana; inopinata; pinetorum; scopulorum					No Photo
Stephen's Woodrat	Neotoma stephensi					No Photo
Common Muskrat	Ondatra zibethicus pallidus; osoyooensis; cinnamominus					View
Northern Grasshopper Mouse	Onychomys leucogaster					No Photo

All Species San Juan

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Brush Mouse	Peromyscus boylii					No Photo
Canyon Mouse	Peromyscus crinitus					No Photo
Deer Mouse	Peromyscus maniculatus					No Photo
Northern Rock Mouse	Peromyscus nasutus					No Photo
Pinyon Mouse	Peromyscus truei					No Photo
Western Harvest Mouse	Reithrodontomys megalotis megalotis; aztecus					No Photo
Common Porcupine	Erethizon dorsatum					View
Botta's Pocket Gopher	Thomomys bottae actuosus; alienus; aureus; collis; connectens; cultellus; fulvus; guadalupensis; lachuguilla; mearnsi; morulus; opulentus; paguatae; pectoralis; peramplus; pervagus; planorum; rufidulus; ruidosae; tol					No Photo
Northern Pocket Gopher	Thomomys talpoides fossor; kaibabensis					No Photo
Ord's Kangaroo Rat	Dipodomys ordii					No Photo
Banner-tailed Kangaroo Rat	Dipodomys spectabilis baileyi; clarenci; spectabilis					No Photo
Plains Pocket Mouse	Perognathus flavescens					No Photo
Silky Pocket Mouse	Perognathus flavus flavus; hopiensis					No Photo
House Mouse	Mus musculus					View
White-tailed Antelope Squirrel	Ammospermophilus leucurus					View
Golden-mantled Ground Squirrel	Callospermophilus lateralis					View
Gunnison's prairie dog	Cynomys gunnisoni				Y	View
Yellow-bellied Marmot	Marmota flaviventris					View
Rock Squirrel	Otospermophilus variegatus grammurus					View
Abert's Squirrel	Sciurus aberti aberti; chuscensis; ferreus					View
Cliff Chipmunk	Neotamias dorsalis					View
Least Chipmunk	Neotamias minimus atristriatus; operarius; chuskaensis					View

All Species San Juan

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Colorado Chipmunk	Neotamias quadrivittatus quadrivittatus; australis; oscuraensis					View
Red Squirrel	Tamiasciurus fremonti					No Photo
Red Squirrel	Tamiasciurus hudsonicus lychnuchus; mogollonensis					View
Spotted Ground Squirrel	Xerospermophilus spilosoma					No Photo
Greater White-fronted Goose	Anser albifrons					View
Snow Goose	Anser caerulescens					View
Ross's Goose	Anser rossii					View
Canada Goose	Branta canadensis					View
Tundra Swan	Cygnus columbianus					View
Wood Duck	Aix sponsa					View
Northern Shoveler Duck	Spatula clypeata					View
Cinnamon Teal Duck	Spatula cyanoptera					View
Blue-winged Teal Duck	Spatula discors					View
American Wigeon Duck	Mareca americana					View
Gadwall Duck	Mareca strepera					View
Mallard Duck	Anas platyrhynchos					View
Northern Pintail	Anas acuta					View
Green-winged Teal Duck	Anas crecca					View
Canvasback Duck	Aythya valisineria					View
Redhead Duck	Aythya americana					View
Ring-necked Duck	Aythya collaris					View
Lesser Scaup Duck	Aythya affinis					View
Bufflehead Duck	Bucephala albeola					View
Common Goldeneye Duck	Bucephala clangula					View
Barrow's Goldeneye Duck	Bucephala islandica					View
Hooded Merganser Duck	Lophodytes cucullatus					View
Common Merganser Duck	Mergus merganser					View
Red-breasted Merganser Duck	Mergus serrator					No Photo
Ruddy Duck	Oxyura jamaicensis					View

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Scaled Quail	Callipepla squamata					View
Gambel's Quail	Callipepla gambelii					View
Ring-necked Pheasant	Phasianus colchicus					View
Chukar	Alectoris chukar					View
Dusky Grouse	Dendragapus obscurus					View
Wild Turkey	Meleagris gallopavo merriami; intermedia; silvestris					View
Pied-billed Grebe	Podilymbus podiceps					View
Eared Grebe	Podiceps nigricollis				Y	View
Western Grebe	Aechmophorus occidentalis					View
Clark's Grebe	Aechmophorus darkii				Y	View
Rock Pigeon	Columba livia					View
Band-tailed Pigeon	Patagioenas fasciata					View
Inca Dove	Columbina inca					View
Mourning Dove	Zenaida macroura					View
Greater Roadrunner	Geococcyx californianus					View
Yellow-billed Cuckoo (western pop)	Coccyzus americanus occidentalis		T		Y	View
Common Nighthawk	Chordeiles minor				Y	View
Common Poorwill	Phalaenoptilus nuttalli					No Photo
Black Swift	Cypseloides niger				Y	View
White-throated Swift	Aeronautes saxatalis					View
Blue-throated Mountain-gem	Lampornis demenciae					View
Black-chinned Hummingbird	Archilochus alexandri					View
Broad-tailed Hummingbird	Selasphorus platycercus					View
Rufous Hummingbird	Selasphorus rufus					View
Calliope Hummingbird	Selasphorus calliope					View
Broad-billed Hummingbird	Cynanthus latirostris		T		Y	View
Virginia Rail	Rallus limicola					View
Sora	Porzana carolina					View
Common Gallinule	Gallinula galeata					View
American Coot	Fulica americana					View

All Species San Juan

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Sandhill Crane	<i>Antigone canadensis</i>					View
Black-necked Stilt	<i>Himantopus mexicanus</i>					View
American Avocet	<i>Recurvirostra americana</i>					View
American Golden Plover	<i>Pluvialis dominica</i>					No Photo
Killdeer	<i>Charadrius vociferus</i>					View
Semipalmated Plover	<i>Charadrius semipalmatus</i>					View
Mountain Plover	<i>Charadrius montanus</i>				Y	View
Snowy Plover	<i>Charadrius nivosus</i>				Y	View
Long-billed Curlew	<i>Numenius americanus</i>				Y	View
Marbled Godwit	<i>Limosa fedoa</i>					View
Baird's Sandpiper	<i>Calidris bairdii</i>					View
Pectoral Sandpiper	<i>Calidris melanotos</i>					View
Western Sandpiper	<i>Calidris mauri</i>					View
Long-billed Dowitcher	<i>Limnodromus scolopaceus</i>					View
Wilson's Snipe	<i>Gallinago delicata</i>					View
Spotted Sandpiper	<i>Actitis macularius</i>					View
Solitary Sandpiper	<i>Tringa solitaria</i>					View
Lesser Yellowlegs	<i>Tringa flavipes</i>					View
Willet	<i>Tringa semipalmata</i>					View
Greater Yellowlegs	<i>Tringa melanoleuca</i>					View
Wilson's Phalarope	<i>Phalaropus tricolor</i>					View
Red-necked Phalarope	<i>Phalaropus lobatus</i>					No Photo
Franklin's Gull	<i>Leucophaeus pipixcan</i>					View
Mew Gull	<i>Larus canus</i>					No Photo
Ring-billed Gull	<i>Larus delawarensis</i>					View
California Gull	<i>Larus californicus</i>					View
Least Tern	<i>Sternula antillarum</i>	E	E		Y	View
Black Tern	<i>Chlidonias niger</i>					View
Common Tern	<i>Sterna hirundo</i>					View
Forster's Tern	<i>Sterna forsteri</i>					View
Pacific Loon	<i>Gavia pacifica</i>					View

All Species San Juan

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Common Loon	Gavia immer					No Photo
Double-crested Cormorant	Phalacrocorax auritus					View
American White Pelican	Pelecanus erythrorhynchos					View
Brown Pelican	Pelecanus occidentalis	E				View
American Bittern	Botaurus lentiginosus				Y	View
Least Bittern	Ixobrychus exilis exilis					View
Great Blue Heron	Ardea herodias					View
Great Egret	Ardea alba					View
Snowy Egret	Egretta thula					View
Cattle Egret	Bubulcus ibis					View
Green Heron	Butorides virescens					View
Black-crowned Night-Heron	Nycticorax nycticorax					View
White-faced Ibis	Plegadis chihi					View
Turkey Vulture	Cathartes aura					View
Osprey	Pandion haliaetus					View
Golden Eagle	Aquila chrysaetos					View
Northern Harrier	Circus hudsonius					View
Sharp-shinned Hawk	Accipiter striatus					View
Cooper's Hawk	Accipiter cooperii					View
Northern Goshawk	Accipiter gentilis					View
Bald Eagle	Haliaeetus leucocephalus	T			Y	View
Mississippi Kite	Ictinia mississippiensis					View
Common Black Hawk	Buteogallus anthracinus	T			Y	View
Broad-winged Hawk	Buteo platypterus					View
Swainson's Hawk	Buteo swainsoni					View
Zone-tailed Hawk	Buteo albonotatus					View
Red-tailed Hawk	Buteo jamaicensis					View
Ferruginous Hawk	Buteo regalis					View
Barn Owl	Tyto alba					View
Western Screech-Owl	Megascops kennicottii					View
Eastern Screech-Owl	Megascops asio					No Photo

All Species San Juan

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Great Horned Owl	Bubo virginianus					View
Northern Pygmy Owl	Glaucidium gnoma					View
Burrowing Owl	Athene cucularia				Y	View
Mexican Spotted Owl	Strix occidentalis lucida		T	Y	Y	View
Long-eared Owl	Asio otus					View
Short-eared Owl	Asio flammeus					View
Northern Saw-whet Owl	Aegolius acadicus					View
Belted Kingfisher	Megasceryle alcyon					View
Lewis's Woodpecker	Melanerpes lewis				Y	View
Red-headed Woodpecker	Melanerpes erythrocephalus				Y	View
Acorn Woodpecker	Melanerpes formicivorus					View
Williamson's Sapsucker	Sphyrapicus thyroideus				Y	View
Red-naped Sapsucker	Sphyrapicus nuchalis					View
American Three-toed Woodpecker	Picoides dorsalis					No Photo
Downy Woodpecker	Dryobates pubescens					View
Hairy Woodpecker	Dryobates villosus					View
Northern Flicker	Colaptes auratus					View
American Kestrel	Falco sparverius					View
Peregrine Falcon	Falco peregrinus		T		Y	View
Arctic Peregrine Falcon	Falco peregrinus tundrius					No Photo
Prairie Falcon	Falco mexicanus					View
Ash-throated Flycatcher	Myiarchus cinerascens					View
Cassin's Kingbird	Tyrannus vociferans					View
Western Kingbird	Tyrannus verticalis					View
Eastern Kingbird	Tyrannus tyrannus					View
Olive-sided Flycatcher	Contopus cooperi				Y	View
Western Wood Pewee	Contopus sordidulus					View
Willow Flycatcher	Empidonax traillii brewsteri; adastus					View
Southwestern Willow Flycatcher	Empidonax traillii extimus	E	E	Y	Y	View
Hammond's Flycatcher	Empidonax hammondii					View

All Species San Juan

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Gray Flycatcher	Empidonax wrightii					View
Dusky Flycatcher	Empidonax oberholseri					View
Cordilleran Flycatcher	Empidonax occidentalis					View
Black Phoebe	Sayornis nigricans					View
Say's Phoebe	Sayornis saya					View
Loggerhead Shrike	Lanius ludovicianus				Y	View
Northern Shrike	Lanius borealis					No Photo
Gray Vireo	Vireo vicinior	T			Y	View
Hutton's Vireo	Vireo huttoni					View
Cassin's Vireo	Vireo cassinii					View
Blue-headed Vireo	Vireo solitarius					View
Plumbeous Vireo	Vireo plumbeus					View
Warbling Vireo	Vireo gilvus					View
Red-eyed Vireo	Vireo olivaceus					View
Pinyon Jay	Gymnorhinus cyanocephalus				Y	View
Steller's Jay	Cyanocitta stelleri					View
Blue Jay	Cyanocitta cristata					View
Woodhouse's Scrub Jay	Aphelocoma woodhouseii					View
Clark's Nutcracker	Nudifraga columbiana				Y	View
Black-billed Magpie	Pica hudsonia					View
American Crow	Corvus brachyrhynchos					View
Common Raven	Corvus corax					View
Horned Lark	Eremophila alpestris					View
Bank Swallow	Riparia riparia				Y	View
Tree Swallow	Tachycineta bicolor					View
Violet-green Swallow	Tachycineta thalassina					View
Northern Rough-winged Swallow	Stelgidopteryx serripennis					View
Barn Swallow	Hirundo rustica					View
Cliff Swallow	Petrochelidon pyrrhonota					View
Black-capped Chickadee	Poecile atricapillus					View
Mountain Chickadee	Poecile gambeli					View

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Juniper Titmouse	Baeolophus ridgwayi				Y	View
Bushtit	Psaltriparus minimus					View
Red-breasted Nuthatch	Sitta canadensis					View
White-breasted Nuthatch	Sitta carolinensis					View
Pygmy Nuthatch	Sitta pygmaea				Y	View
Brown Creeper	Certhia americana					View
Rock Wren	Salpinctes obsoletus					View
Canyon Wren	Catherpes mexicanus					View
House Wren	Troglodytes aedon					View
Winter Wren	Troglodytes hemialis					No Photo
Marsh Wren	Cistothorus palustris					View
Bewick's Wren	Thryomanes bewickii					View
Blue-gray Gnatcatcher	Poliptila caerulea					View
Black-tailed Gnatcatcher	Poliptila melanura					View
American Dipper	Cinclus mexicanus					View
Golden-crowned Kinglet	Regulus satrapa					No Photo
Ruby-crowned Kinglet	Regulus calendula					View
Western Bluebird	Sialia mexicana				Y	View
Mountain Bluebird	Sialia currucoides				Y	View
Townsend's Solitaire	Myadestes townsendi					View
Hermit Thrush	Catharus guttatus					View
American Robin	Turdus migratorius					View
Gray Catbird	Dumetella carolinensis					View
Brown Thrasher	Toxostoma rufum					View
Bendire's Thrasher	Toxostoma bendirei				Y	View
Sage Thrasher	Oreoscoptes montanus					View
Northern Mockingbird	Mimus polyglottos					View
European Starling	Sturnus vulgaris					View
Bohemian Waxwing	Bombycilla garrulus					No Photo
Cedar Waxwing	Bombycilla cedrorum					View
House Sparrow	Passer domesticus					View

All Species San Juan

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American Pipit	Anthus rubescens					View
Sprague's Pipit	Anthus spragueii				Y	View
Evening Grosbeak	Coccothraustes vespertinus				Y	View
Gray-crowned Rosy-Finch	Leucosticte tephrocotis					View
Black Rosy-Finch	Leucosticte atrata					View
Brown-capped Rosy-Finch	Leucosticte australis				Y	View
House Finch	Haemorhous mexicanus					View
Cassin's Finch	Haemorhous cassinii				Y	View
Red Crossbill	Loxia curvirostra					View
Pine Siskin	Spinus pinus					View
Lesser Goldfinch	Spinus psaltria					View
American Goldfinch	Spinus tristis					View
Grasshopper Sparrow	Ammodramus savannarum perpallidus					View
Black-throated Sparrow	Amphispiza bilineata					View
Lark Sparrow	Chondestes grammacus					View
Lark Bunting	Calamospiza melanocorys					View
Chipping Sparrow	Spizella passerina					View
Brewer's Sparrow	Spizella breweri					View
Fox Sparrow	Passerella iliaca					View
American Tree Sparrow	Spizelloides arborea					No Photo
Dark-eyed Junco	Junco hyemalis					View
White-crowned Sparrow	Zonotrichia leucophrys					View
Golden-crowned Sparrow	Zonotrichia atricapilla					View
Harris's Sparrow	Zonotrichia querula					View
White-throated Sparrow	Zonotrichia albicollis					View
Sagebrush Sparrow	Artemisospiza nevadensis				Y	View
Vesper Sparrow	Poocetes gramineus				Y	View
Baird's Sparrow	Centronyx bairdii		T		Y	View
Savannah Sparrow	Passerculus sandwichensis nevadensis; anthinus					View
Song Sparrow	Melospiza melodia					View

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Lincoln's Sparrow	Melospiza lincolnii					View
Swamp Sparrow	Melospiza georgiana					View
Canyon Towhee	Melospiza fusca					View
Green-tailed Towhee	Pipilo chlorurus					View
Spotted Towhee	Pipilo maculatus					View
Yellow-breasted Chat	Icteria virens					View
Yellow-headed Blackbird	Xanthocephalus xanthocephalus					View
Western Meadowlark	Sturnella neglecta					View
Hooded Oriole	Icterus cucullatus					View
Bullock's Oriole	Icterus bullockii					View
Baltimore Oriole	Icterus galbula					View
Scott's Oriole	Icterus parisorum					View
Red-winged Blackbird	Agelaius phoeniceus					View
Brown-headed Cowbird	Molothrus ater					View
Brewer's Blackbird	Euphagus cyanocephalus					View
Common Grackle	Quiscalus quiscula					View
Great-tailed Grackle	Quiscalus mexicanus					View
Ovenbird	Seiurus aurocapilla					No Photo
Northern Waterthrush	Parkesia noveboracensis					View
Black-and-white Warbler	Mniotilta varia					View
Orange-crowned Warbler	Leiothlypis celata					View
Lucy's Warbler	Leiothlypis luciae				Y	View
Virginia's Warbler	Leiothlypis virginiae				Y	View
Macgillivray's Warbler	Geothlypis tolmiei					View
Common Yellowthroat	Geothlypis trichas					View
American Redstart	Setophaga ruticilla					View
Yellow Warbler	Setophaga petechia					View
Palm Warbler	Setophaga palmarum					View
Yellow-rumped Warbler	Setophaga coronata					View
Grace's Warbler	Setophaga graciae				Y	View
Black-throated Gray Warbler	Setophaga nigrescens				Y	View

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Townsend's Warbler	Setophaga townsendi					View
Black-throated Green Warbler	Setophaga virens					View
Wilson's Warbler	Cardellina pusilla					View
Western Tanager	Piranga ludoviciana					View
Rose-breasted Grosbeak	Pheucticus ludovicianus					View
Black-headed Grosbeak	Pheucticus melanocephalus					View
Blue Grosbeak	Passerina caerulea					View
Lazuli Bunting	Passerina amoena					View
Indigo Bunting	Passerina cyanea					View
Painted Bunting	Passerina ciris					View
Dickcissel	Spiza americana					View
Western Painted Turtle	Chrysemys picta					View
Sonoran Mud Turtle	Kinosternon sonoriense sonoriense				Y	View
Eastern Collared Lizard	Crotaphytus collaris					View
Long-nosed Leopard Lizard	Gambelia wislizenii					View
Common Lesser Earless Lizard	Holbrookia maculata maculata; bunkerii; ruthveni					View
Hernandez's Short-horned Lizard	Phrynosoma hernandesi					View
Northern Sagebrush Lizard	Sceloporus graciosus					View
Desert Spiny Lizard	Sceloporus magister					View
Plateau Fence Lizard	Sceloporus tristichus					View
Northern Tree Lizard	Urosaurus ornatus					View
Common Side-blotched Lizard	Uta stansburiana					View
Woodland Striped Whiptail	Aspidoscelis inornata junipera					No Photo
Tiger Whiptail	Aspidoscelis tigris					No Photo
Plateau Striped Whiptail	Aspidoscelis velox					View
Glossy Snake	Arizona elegans					View
North American Racer	Coluber constrictor					View
Desert Striped Whipsnake	Coluber taeniatus					View
Plains Hog-nosed Snake	Heterodon nasicus					View
Desert Nightsnake	Hypsiglena chlorophaea					No Photo

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Chihuahuan Nightsnake	Hypsiglena jani					View
California Kingsnake	Lampropeltis californiae				Y	View
Milk Snake	Lampropeltis gentilis					View
Gophersnake	Pituophis catenifer					View
Black-necked Gartersnake	Thamnophis cyrtopsis					View
Wandering Gartersnake	Thamnophis elegans					View
Prairie Rattlesnake	Crotalus viridis					View
Tiger Salamander	Ambystoma mavortium mavortium; nebulosum					View
Plains Spadefoot	Spea bombifrons					View
New Mexico Spadefoot	Spea multiplicata					View
Red-spotted Toad	Anaxyrus punctatus					View
Woodhouse's Toad	Anaxyrus woodhousii					View
Boreal Chorus Frog	Pseudacris maculata				Y	View
Bullfrog	Lithobates catesbeianus					View
Northern Leopard Frog	Lithobates pipiens				Y	View
Threadfin Shad	Dorosoma petenense					No Photo
Grass Carp	Ctenopharyngodon idella					No Photo
Red Shiner	Cyprinella lutrensis					View
Common Carp	Cyprinus carpio					View
Roundtail Chub (upper basin populations)	Gila robusta	E			Y	No Photo
Fathead Minnow	Pimephales promelas					View
Colorado Pikeminnow	Ptychocheilus lucius	E	E	Y	Y	View
Speckled Dace (Non-Gila pop.)	Rhinichthys osculus					No Photo
White Sucker	Catostomus commersoni					View
Bluehead Sucker	Catostomus discobolus discobolus					No Photo
Flannelmouth Sucker	Catostomus latipinnis					No Photo
Razorback Sucker	Xyrauchen texanus		E	Y	Y	View
Black Bullhead	Ameiurus melas					View
Channel Catfish	Ictalurus punctatus					View
Cutthroat Trout	Oncorhynchus darkii					No Photo

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Rainbow Trout	Oncorhynchus mykiss					View
Kokanee Salmon	Oncorhynchus nerka					View
Brown Trout	Salmo trutta					View
Northern Pike	Esox lucius					View
Plains Killifish	Fundulus zebrinus					No Photo
Western mosquitofish	Gambusia affinis					No Photo
Mottled Sculpin	Cottus bairdi					No Photo
Green Sunfish	Lepomis cyanellus					View
Bluegill	Lepomis macrochirus					View
Largemouth Bass	Micropterus salmoides					View
Forest Disc Snail	Discus whitleyi					No Photo
Rocky Mountainsnail	Oreohelix strigosa					View
Montane Snaggletooth Snail	Gastrocopta pilsbryana					No Photo
Rocky Mtn. Column Snail	Pupilla blandi					No Photo
Crestless Column Snail	Pupilla hebes					No Photo
Vertigo Snail	Vertigo arizonensis					No Photo
Vertigo Snail	Vertigo concinnula					No Photo
Glossy Pillar Snail	Cionella lubrica					No Photo
Silky Vallonia Snail	Vallonia cyclophorella					No Photo
Multirib Vallonia Snail	Vallonia gracilicosta					No Photo
Thin-lipped Vallonia Snail	Vallonia perspectiva					No Photo
Lovely Vallonia Snail	Vallonia pulchella					No Photo
Western Glass Snail	Vitrina pellucida					No Photo
Minute Gem Snail	Hawaiiia minuscula					No Photo
Amber Glass Snail	Nesovitreia hammonis					No Photo
Quick Gloss Snail	Zonitoides arboreus					No Photo
Brown Hive Snail	Euconulus fulvus					No Photo
Fuzzy Cyst Clam Shrimp	Eulimnadia antlei				Y	No Photo
Tiger Beetle	Amblycheila picolomini					No Photo
Tiger Beetle	Cicindela fulgida fulgida; pseudowillistoni					No Photo

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Tiger Beetle	Cicindela hirticollis					No Photo
Tiger Beetle	Cicindela lengi lengi; jordai					No Photo
Dainty Tiger Beetle	Cicindela lepida					No Photo
Tiger Beetle	Cicindela marutha					No Photo
Tiger Beetle	Cicindela nigrocoerula					No Photo
Tiger Beetle	Cicindela obsoleta obsoleta; santadarae					No Photo
Tiger Beetle	Cicindela oregona					No Photo
Tiger Beetle	Cicindela punctulata					No Photo
Tiger Beetle	Cicindela repanda					View
Tiger Beetle	Cicindela sperata					No Photo
Tiger Beetle	Cicindela tenuisignata					No Photo
Tiger Beetle	Cicindela tranquebarica					No Photo
Tiger Beetle	Habroscelimorpha fulgoris fulgoris					No Photo
Nevada Tiger Beetle	Ellipsoptera nevadica tubensis					No Photo
Five Spotted Hawk Moth	Manduca quinquemaculata					View
Moth	Pachysphinx occidentalis					View
Blinded Sphinx Moth	Paonias excaecatus					View
Moth	Sagenosoma elsa					No Photo
One-eyed Sphinx Moth	Smerinthus cerisyi					View
Great Ash Moth	Sphinx chersis					View
Moth	Sphinx libocedrus					No Photo
Moth	Sphinx separata					No Photo
Vashti Sphinx Moth	Sphinx vashti					View
White-lined Sphinx Moth	Hyles lineata					View
Moth	Proserpinus vega					No Photo
Tersa Sphinx Moth	Xylophanes tersa					No Photo
Silver-Spotted Skipper	Epargyreus darus darus					View
Sleepy Duskywing Skipper	Erynnis brizo					View
Funereal Duskywing Skipper	Erynnis funeralis					View
Dreamy Duskywing Skipper	Erynnis icelus					View

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Pacuvius Duskywing Skipper	Erynnis pacuvius					No Photo
Persius Duskywing Skipper	Erynnis persius					No Photo
Rocky Mtn Duskywing Skipper	Erynnis telemachus					View
Northern White Skipper	Heliopetes ericetorum					No Photo
Saltbush Sootywing Skipper	Hesperopsis alpheus					No Photo
Mohave Sootywing Skipper	Hesperopsis libya					No Photo
Common Checkered Skipper	Pyrgus communis					View
Small Checkered Skipper	Pyrgus scriptura					View
Mexican Cloudwing Skipper	Thorybes mexicanus					No Photo
Northern Cloudywing Skipper	Thorybes pylades					View
Short-Tailed Skipper	Zestusa dorus					No Photo
Russet Skipperling Skipper	Piruna pirus					View
Sachem Skipper	Atalopedes campestris					View
Viereck's Skipper	Atrytonopsis vierecki					No Photo
Kiowa Dun Skipper	Euphyes vestris					View
Juba Skipper	Hesperia juba					No Photo
Pahaska Skipper	Hesperia pahaska pahaska					No Photo
Uncas Skipper	Hesperia uncas uncas					No Photo
Green Skipper	Hesperia viridis					View
Yuma Skipper	Ochlodes yuma yuma					No Photo
Taxiles Skipper	Poanes taxiles					View
Sandhill Skipper	Polites sabuleti					No Photo
Tawny-Edged Skipper	Polites themistodes					View
Morrison's Skipper	Stinga morrisoni					No Photo
Navajo Yucca Borer Skipper	Megathymus coloradensis navajo					No Photo
Strecker's Giant Skipper	Megathymus streckeri streckeri					View
Baird's Swallowtail Butterfly	Papilio bairdii					No Photo
Minor's Swallowtail Butterfly	Papilio indra					No Photo
Black Swallowtail Butterfly	Papilio polyxenes asterius					View
Anise Swallowtail Butterfly	Papilio zelicaon zelicaon					View
Ingham's Orangetip Butterfly	Anthocharis sara					View

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Two-Tailed Swallowtail Butterfly	Pterourus multicaudatus					View
Southern Marble Butterfly	Euchloe hyantis					No Photo
Pine White Butterfly	Neophasia menapia					View
Cabbage White Butterfly	Pieris rapae					View
Becker's White Butterfly	Pontia beckerii					No Photo
Checkered White Butterfly	Pontia protodice					View
Spring White Butterfly	Pontia sisymbrii elivata					No Photo
Orange Sulphur Butterfly	Colias eurytheme					View
Western Common Sulphur Butterfly	Colias philodice					View
Little Yellow Butterfly	Eurema lisa					View
Mexican Yellow Butterfly	Eurema mexicanum					No Photo
Sleepy Orange Butterfly	Eurema nicippe					View
Dainty Sulphur Butterfly	Nathalis iole					View
Southern Dogface Butterfly	Zerene cesonia					View
Colorado Hairstreak Butterfly	Hypaurotis crysalus					View
Great Purple Hairstreak Butterfly	Atides halesus					View
Apama Hairstreak Butterfly	Callophrys affinis apama					No Photo
Western Elfin Butterfly	Incisalia augustinus iroides					No Photo
Western Pine Elfin Butterfly	Incisalia eryphon					No Photo
Desert Elfin Butterfly	Incisalia fotis					No Photo
Juniper Hairstreak Butterfly	Mitoura siva					View
Thicket Hairstreak Butterfly	Mitoura spinetorum					No Photo
Cross's Hairstreak Butterfly	Satyrium behrii					No Photo
Itys Hairstreak Butterfly	Satyrium sylvinum					No Photo
Frank's Common Hairstreak Butterfly	Strymon melinus					View
Rustic Blue Butterfly	Agriades rusticus					View
Arizona Blue Butterfly	Celastrina ladon cinerea					No Photo
Ellis's Blue Butterfly	Euphilotes battoides ellisi					No Photo
Ancilla Blue Butterfly	Euphilotes enoptes					No Photo
Emmel's Blue Butterfly	Euphilotes rita emmeli					No Photo
Spalding's Blue Butterfly	Euphilotes spaldingi					View

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Western Tailed Blue Butterfly	Everes amyntula					View
Silvery Blue Butterfly	Glaucoopsyche lygdamus oro					View
Arrowhead Blue Butterfly	Glaucoopsyche piasus					No Photo
Reakirt's Blue Butterfly	Hemiargus isola					View
Marine Blue Butterfly	Leptotes marina					View
Melissa Blue Butterfly	Lycaeides melissa					View
Texas Blue Butterfly	Plebejus acmon					View
Lycea Blue Butterfly	Plebejus icarioides lycea					View
Whitmer's Blue Butterfly	Plebejus saepiolus whitmeri					View
Mormon Metalmark Butterfly	Apodemia mormo mormo					No Photo
Purplish Copper Butterfly	Epidemia helloides					View
Leda Hairstreak Butterfly	Ministrymon leda					No Photo
Western Pygmy Blue Butterfly	Brephidum exile					View
Milbert's Tortoise Shell Butterfly	Aglais milberti					View
Buckeye Butterfly	Junonia coenia					View
Mourning Cloak Butterfly	Nymphalis antiopa					View
California Tortoise Shell Butterfly	Nymphalis californica					View
Hoary Comma Butterfly	Polygonia gracilis					View
Satyr Angewing Butterfly	Polygonia satyrus					No Photo
West Coast Lady Butterfly	Vanessa annabella					View
Red Admiral Butterfly	Vanessa atalanta					View
Painted Lady Butterfly	Vanessa cardui					View
American Lady Butterfly	Vanessa virginiensis					View
Variegated Fritillary Butterfly	Euptoieta daudia					View
Dorothy's Fritillary Butterfly	Speyeria hesperis dorothea					No Photo
Nokomis Fritillary Butterfly	Speyeria nokomis nokomis					No Photo
Chuska Mountains Checkerspot Butterfly	Euphydryas anicia chuskae					No Photo
Mylitta Crescent Butterfly	Phyciodes mylitta					View
Painted Crescent Butterfly	Phyciodes pictus					View
Camillus Crescent Butterfly	Phyciodes pulchella					View

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Pearl Crescent Butterfly	Phyciodes tharos Type B					No Photo
Montane Penstemon Checkerspot Butterfly	Poladryas minuta arachne					No Photo
Fulvia Checkerspot Butterfly	Thessalia fulvia					View
Arizona Sister Butterfly	Adelpha bredowii					View
Mead's Wood Nymph Butterfly	Cercyonis meadii meadii					View
Charon Satyr Butterfly	Cercyonis oetus					View
Common Wood-Nymph Butterfly	Cercyonis pegala					View
Little Satyr Butterfly	Cercyonis sthenele					No Photo
Canyonland Satyr Butterfly	Cyllopsis pertepida dorothea					No Photo
Striated Queen Butterfly	Danaus gilippus					View
Monarch Butterfly	Danaus plexippus					View
Pearly Checkerspot Butterfly	Charidryas acastus acastus					No Photo
Alena Checkerspot Butterfly	Occidryas anicia alena					No Photo
Viceroy Butterfly	Limenitis archippus archippus					No Photo
Obsolete Viceroy Butterfly	Limenitis archippus obsoleta					No Photo
Weidemeyer's Admiral Butterfly	Limenitis weidemeyerii weidemeyerii					View
Arizona Viceroy	Limenitis archippus obsoleta					No Photo
Plateau Spreadwing	Lestes alacer					View
Spotted Spreadwing	Lestes congener					View
American Rubyspot	Hetaerina americana					View
Western Red Damselfly	Amphiagrion abbreviatum					View
Springwater Dancer	Argia plana					View
Vivid Dancer	Argia vivida					View
Northern Bluet	Enallagma annexum					View
Double-striped Bluet	Enallagma basidens					No Photo
Boreal Bluet	Enallagma boreale					No Photo
Tule Bluet	Enallagma carunculatum					View
Familiar Bluet	Enallagma civile					View
Arroyo Bluet	Enallagma praevarum					No Photo
Plains Forktail	Ischnura damula					View

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Black-fronted Forktail	Ischnura denticollis					No Photo
Western Forktail	Ischnura perparva					No Photo
Common Green Darner	Anax junius					View
Blue-eyed Darner	Rhionaeschna mticolor					View
Pale Snaketail	Ophiogomphus severus					View
Western Pondhawk	Erythemis collocata					No Photo
Dot-tailed Whiteface	Leucorrhinia intacta					No Photo
Eight-spotted Skimmer	Libellula forensis					View
Widow skimmer	Libellula luctuosa					View
Twelve-spotted Skimmer	Libellula pulchella					View
Flame Skimmer	Libellula saturata					View
Blue Dasher	Pachydiplax longipennis					View
Common Whitetail	Plathemis lydia					View
Variegated meadowhawk	Sympetrum corruptum					View
Black Meadowhawk	Sympetrum danae					View
Band-winged Meadowhawk	Sympetrum semicinctum					View
Black Saddlebags	Tamea lacerata					View
Club-Horned Grasshopper	Aeropedellus clavatus					No Photo
White Whiskers Grasshopper	Ageneotettix deorum					No Photo
Striped Slant-Faced Grasshopper	Amphitornus coloradus					No Photo
Elliott Grasshopper	Aulocara ellioti					No Photo
White Cross Grasshopper	Aulocara femoratum					No Photo
Cream Grasshopper	Cibolacris parviceps					No Photo
Spotted Wing Grasshopper	Cordillacris occipitalis					No Photo
Rufous Grasshopper	Heliaula rufa					No Photo
Obscure Grasshopper	Opeia obscura					No Photo
Grasshopper	Paropomala virgata					No Photo
Brown Spotted Range Grasshopper	Psoloessa delicatula					No Photo
Grasshopper	Psoloessa texana					No Photo
Slant-Faced Grasshopper	Syrbula admirabilis					No Photo
Speckled Rangeland Grasshopper	Arphia conspersa					No Photo

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Red-Winged Grasshopper	Arphia pseudonietana					No Photo
Clear-Winged Grasshopper	Camnula pellucida					No Photo
Groove-Headed Grasshopper	Conozoa sulcifrons					No Photo
Grasshopper	Conozoa texana					No Photo
Carolina Grasshopper	Dissosteira carolina					No Photo
Grasshopper	Encoptolophus subgradilis					No Photo
Blue-Winged Grasshopper	Lepus intermedius					No Photo
Blue Winged Grasshopper	Lepus wheeleri					No Photo
Campestral Grasshopper	Spharagemon campestris					No Photo
Mottled Sand Grasshopper	Spharagemon collare					No Photo
Grasshopper	Trimerotropis barnumi					No Photo
Strenuous Grasshopper	Trimerotropis californica					No Photo
Grasshopper	Trimerotropis cincta					No Photo
Thomas' Slender Grasshopper	Trimerotropis gracilis					No Photo
Grasshopper	Trimerotropis inconspicua					No Photo
Grasshopper	Trimerotropis modesta					No Photo
Pallid-Winged Grasshopper	Trimerotropis pallidipennis					View
Barren Land Grasshopper	Trimerotropis pristrinaria					No Photo
Great Basin Grasshopper	Trimerotropis sparsa					No Photo
Red Shanks Grasshopper	Xanthippus corallipes					No Photo
Grasshopper	Xanthippus montanus					No Photo
Green Bird Grasshopper	Schistocerca alutacea shoshone					No Photo
Grasshopper	Aeoloplides chenopodii					No Photo
Narrow-Winged Bush Grasshopper	Aeoloplides tenuipennis					No Photo
Thistle Grasshopper	Aeoloplides turnbulli					No Photo
Fuzzy Olive-Green Grasshopper	Campylacantha olivacea					No Photo
Green Streak Grasshopper	Hesperotettix viridis					No Photo
Narrow-Winged Spur-Throat Grasshopper	Melanoplus angustipennis					No Photo
Arid Land's Spur-Throat Grasshopper	Melanoplus aridis					No Photo
Two-Striped Grasshopper	Melanoplus bivittatus					No Photo

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Bowditch's Spur-Throat Grasshopper	Melanoplus bowditchi					No Photo
Little Pasture Spur-Throat Grasshopper	Melanoplus confusus					No Photo
Differential Grasshopper	Melanoplus differentialis					No Photo
Red-Legged Grasshopper	Melanoplus femurrubrum					No Photo
Grasshopper	Melanoplus foedus					No Photo
Gladston's Spur-Throat Grasshopper	Melanoplus gladstoni					No Photo
Grasshopper	Melanoplus lakinus					No Photo
Flabellate Grasshopper	Melanoplus occidentalis					No Photo
Packard's Grasshopper	Melanoplus packardi					No Photo
Yarrow's Spur-Throat Grasshopper	Melanoplus yarrowi					No Photo
Platte Range Grasshopper	Mestobregna plattei					No Photo
Grasshopper	Mestobregna terricolor					No Photo
Mayfly	Acentrella insignificans					No Photo
Mayfly	Baetis flavistriga					No Photo
Mayfly	Baetis tricaudatus					No Photo
Mayfly	Callibaetis ferrugineus					No Photo
Mayfly	Callibaetis montanus					No Photo
Mayfly	Camelobaetidius warreni					No Photo
Mayfly	Labiobaetis apache					No Photo
Mayfly	Prodoen conturbatum					No Photo
Mayfly	Heptagenia elegantula					No Photo
Mayfly	Heptagenia solitaria					No Photo
Mayfly	Nixe criddlei					No Photo
Mayfly	Nixe simplicioides					No Photo
Mayfly	Rhithrogena morrisoni					No Photo
Mayfly	Rhithrogena undulata					No Photo
Mayfly	Paraleptophlebia memorialis					No Photo
Mayfly	Lachlania saskatchewanensis					No Photo
Mayfly	Siphonurus occidentalis					No Photo
Mayfly	Ephemerella inermis					No Photo
Mayfly	Ephemerella molli tia					No Photo

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Mayfly	Serratella micheneri					No Photo
Mayfly	Tricorythodes explicatus					No Photo
Tarantula	Aphonopelma behlei					No Photo
Tarantula	Aphonopelma vogeli					No Photo
Pseudoscorpion	Hysterochelifer proprius					No Photo
Northern Crayfish	Orconectes virilis					View