

BIOLOGICAL ASSESSMENT

of the
Effects to Federally Endangered Species and Wildlife of Special Concern in Arizona from
Removal of Sonoran Desertscrub Habitat and Construction of a Water Treatment Plant in
Maricopa County, Arizona

Prepared for:

City of Phoenix
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February 15, 2000

BIOLOGICAL ASSESSMENT

1. Project Name/Activity:

The City of Phoenix, water treatment plant project will convert Sonoran Desertscrub habitat for use as a water treatment facility.

2. Activity Location:

The project area lies approximately 30 miles north of Phoenix in Section (S) 34 and S 35 of Township 6 North, Range 1 East in Maricopa County, Arizona. The area is roughly triangular in shape and occupies approximately 225 acres (Figure 1 – Project Location and Figure 2 – Project Vicinity). The eastern boundary extends approximately one mile along New River Road, beginning near the southeastern corner of S 34 extending north north-east to the northern section line of S 35 about ¼-mile east of S 34. The northern boundary extends west approximately one mile along the northern section line of S 34 and S 35 to approximately ¼ mile east of S 33. The western boundary of the project area extends southeast approximately one mile from the western end of the northern boundary to the southern end of the eastern boundary, completing the triangle. Lands adjoining the project area are Arizona State trust lands.

3. Proposed Activity:

The City of Phoenix proposes to construct a water treatment facility on a portion of the 225-acre project area.

4. Species Identification:

The U. S. Fish and Wildlife Service (USFWS) Threatened, Endangered, Proposed, and Candidate Species list for Maricopa County was reviewed to determine which listed species may occur in the project area. In addition, the Arizona Game and Fish (AGFD) list of Wildlife of Special Concern in Arizona (WSCA) was also reviewed. The following species may occur in the project area and vicinity.

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Lesser long-nosed bat	<i>Leptonycteris curasoae verbabuenae</i>	Endangered
Cactus Ferruginous Pygmy-Owl	<i>Glaucidium brasilianum cactorum</i>	Endangered
Desert tortoise	<i>Gopherus agassizii</i>	WSCA

The USFWS list for Maricopa County also includes the Sonoran pronghorn, Bald Eagle, Mexican Spotted Owl, Southwestern Willow Flycatcher, Yuma Clapper Rail, desert pupfish, Gila topminnow, razorback sucker, Arizona agave, Arizona cliffrose, and Arizona hedgehog cactus. These species have not been recorded in the project vicinity and/or require specific habitat not present in the project area and, therefore, were not evaluated.

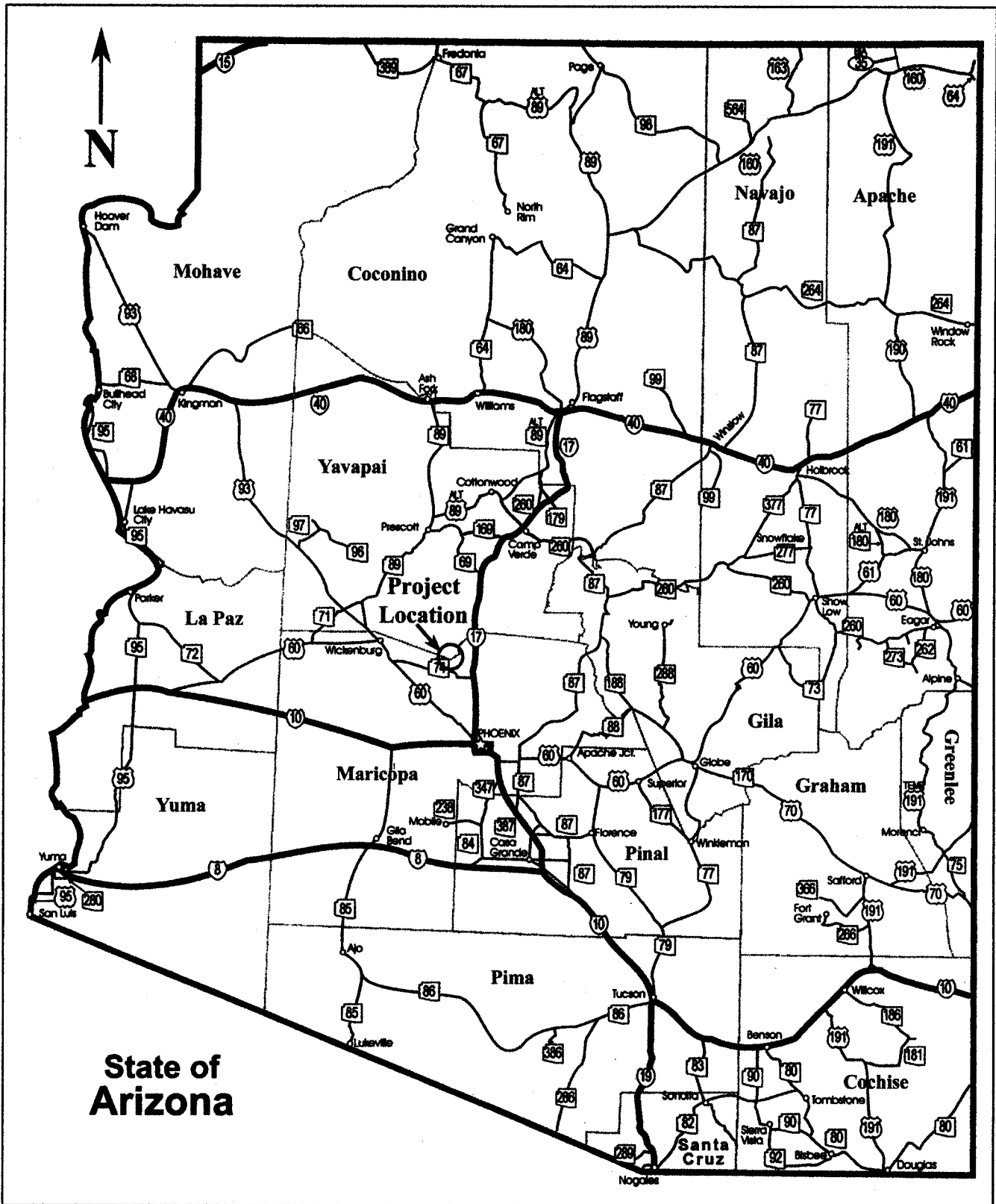


Figure 1. Project Location, Proposed Water Treatment Plant, Maricopa County, Arizona.

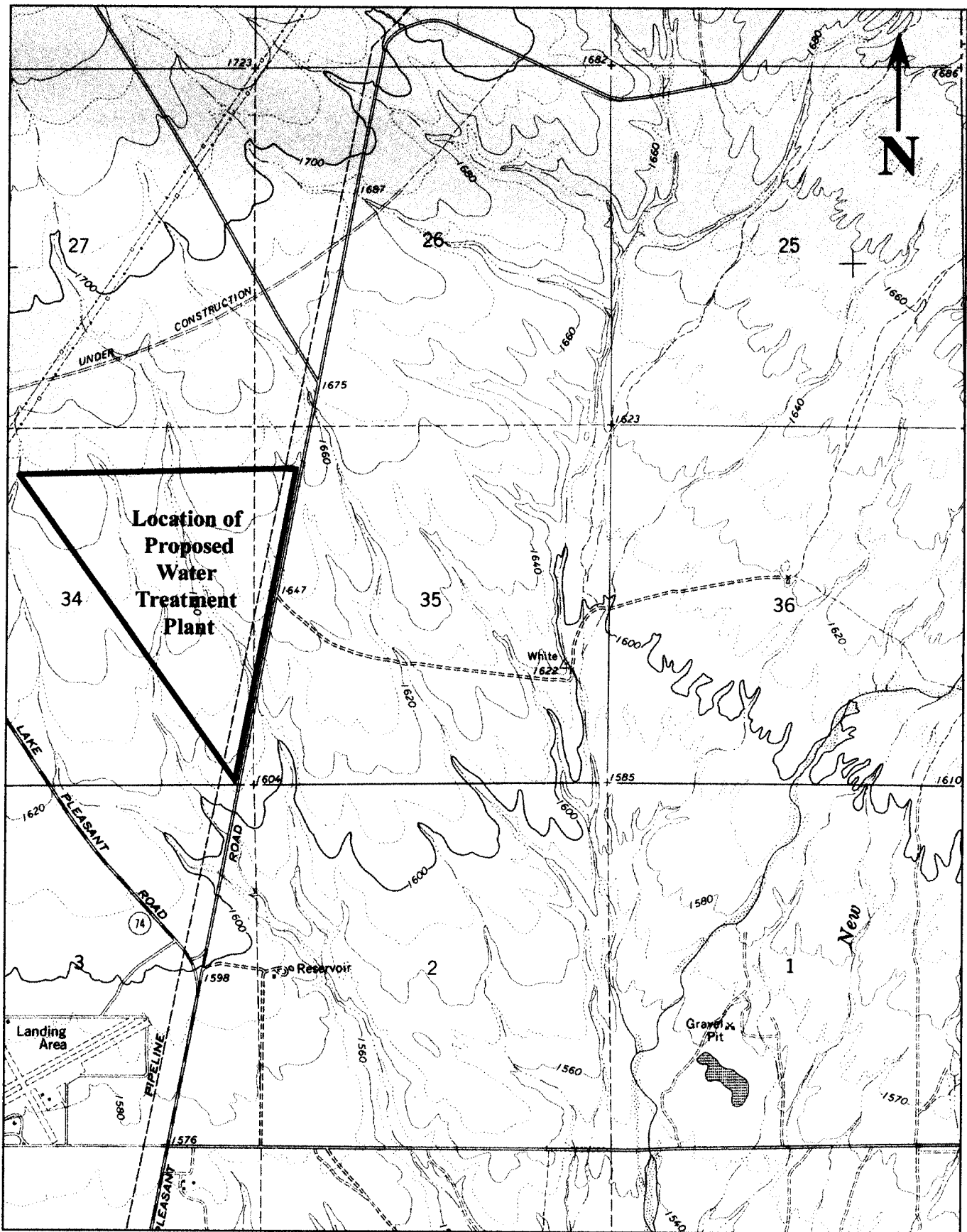


Figure 2. Project Vicinity, Proposed Water Treatment Facility, Maricopa County, AZ. Biscuit Flat USGS 7.5 min. Quad. Scale 1:24,000.

5. Critical Habitat in Activity Area:

No designated or proposed Critical Habitat exists within the proposed project area.

6. Species Evaluation and Determination of Effect:

Habitat Present

The project area lies between 1,590 and 1,680 feet above mean sea level (MSL) on relatively flat terrain gently sloping to the south. The majority of the proposed project area is natural undisturbed desert and includes three minor arroyos which cross the project area from north to south. Soils are alluvial fill with gravel stones and cobbles of metamorphic and volcanic origin. The vegetation community is part of the Arizona Upland Subdivision of Sonoran Desertscrub dominated by the creosote bush and triangle-leaf bursage community (Turner and Brown 1994). Common plants found within the project area include saguaro, desert hackberry, foothill paloverde, barrel cactus, golden cholla, teddy bear cactus, mesquite, ironwood, wolfberry, Coulter's globe mallow, galleta, and Russian thistle. See Tables 1 and 2 at the end of this report for lists of plants and animals observed within the project area and vicinity.

EcoPlan biologist Jeff McMichael conducted a 100 percent pedestrian survey of the project area on January 29, 30 and 31, 2000.

The following species evaluation is based on the field survey and habitat present in the project area and vicinity.

Lesser Long-nosed Bat

The lesser long-nosed bat, is one of four Phyllostomid bats ranging into the United States. Adult bats are gray to reddish brown. The lesser long-nosed bat, with a wingspan to 14 inches, is a relatively large nectar and pollen-feeding bat. Relying mainly on its sense of smell, it has a relatively long rostrum with a triangular nose-leaf, small non-specialized ears, and no tail. The species does not hibernate, so it is dependent on the flowering cycles of the columnar cactus and agave species on which it feeds (Hoffmeister 1986). It winters in Mexico and Central America and extends its range into southern Arizona from mid-April to early October (USFWS 1993). The species roosts in caves, mineshafts and tunnels. Females form maternity colonies where they rear their young between May and July. Males form separate roosting colonies. Once the young are self sufficient, the maternity colonies disperse and expand its range to take advantage of summer flowering agaves at higher elevations. Lesser long-nosed bats are known to travel large distances (20 to 35 miles) from their roosting sites to feeding areas (USFWS 1993). The species has been recorded in Arizona as far north as Phoenix, and is restricted to saguaro-dominated desert of south central Arizona and the agave rich grasslands of southeastern Arizona (Hoffmeister 1986). An recent unconfirmed sighting of a lesser long-nosed bat occurred in the McDowell Mountains near northeast Phoenix in 1992 (Tim Snow, AGFD, pers. comm.)

The presence of saguaro in the project area, flowering in May to early June, provide a potential food source to this species during these months. Additional food sources in the form of agaves are not present in the project area. Following the saguaro flowering period, lesser long-nose bats would be expected to leave the project vicinity for areas where agaves are more abundant. Some

saguaros will be transplanted outside the area affected by the proposed activity, which will maintain the presence of this potential food source. Caves and abandoned mines potentially suitable as roost sites may be present in the general project vicinity, but will not be affected by project activities. The proposed project will not affect the lesser long-nosed bat.

Cactus Ferruginous Pygmy-owl

The Cactus Ferruginous Pygmy-owl (CFPO) is a small owl, 6.5 to 7.0 inches long, with a long, rufous colored tail accented by dark barring (Udvardy 1977). The range of the CFPO extends from south-central Arizona, south through western Mexico, and from southern Texas south through northeastern Mexico (USFWS 1991). In Arizona, the CFPO was historically abundant in mesquite-cottonwood woodlands, which provided abundant nesting cavities and prey base along the lower Salt, Verde, Gila, San Pedro, and Santa Cruz rivers and their tributaries.

Much of Arizona's riparian broadleaf habitat has been destroyed or severely altered, which may have resulted in local population declines and extirpation in some areas. The CFPO also occurs in Sonoran Desertscrub associations in southern and southwestern Arizona, comprised of mesquite (*Prosopis velutina*), ironwood (*Olneya tesota*), paloverde (*Cercidium spp*), acacia (*Acacia spp*), bursage (*Ambrosia spp*), saguaro (*Carnegiea gigantea*) and organpipe cactus (*Stenocereus thurberi*) (Phillips et al. 1964). Their occurrence in this vegetation type has been uncommon and unpredictable. CFPOs are more predictably found in xeroriparian habitats comprised of very dense desertscrub thickets bordering dry desert washes than more open uplands (USFWS 1994). Xeroriparian and adjacent scrub habitat provide nesting cavities and a high diversity of wildlife species providing a prey base for this species.

The northern-most record for the CFPO in Arizona is from New River (Phillips et. al. 1964, USFWS 1993b, 1994). Pygmy-owls were collected and observed numerous times in Maricopa County prior to 1908 (SWCA 1998). It is likely that all were encountered along riparian habitats of the Salt and Gila rivers. The most recent record of CFPO closest to the project area occurred in 1971 near the Verde River and Salt River confluence (Millsap and Johnson 1986). Johnson and Haight (1998) surveyed this location and vicinity in 1998 and did not detect any CFPOs.

The decline in range and abundance of the CFPO lead to its classification of candidate category 2 species by the USFWS in 1989. The USFWS upgraded this species classification to candidate Category 1 in 1991 after further evaluation (USFWS 1991). In 1994, the USFWS proposed listing the owl as endangered, however, a moratorium on listing species stopped the process (USFWS 1994). The CFPO was listed as endangered in 1997 after the moratorium expired in 1996 (USFWS 1997). Critical habitat for the species was determined (USFWS 1998) and includes nearly contiguous areas including Semidesert Grassland habitat in the Altar Valley in southern Pima County, paloverde – saguaro dominated Arizona Upland Subdivision of Sonoran Desertscrub northwest of Tucson and desert riparian habitats along the San Pedro and Gila River, extending into eastern Maricopa County. No critical habitat exists in the project area.

Formal surveys for CFPOs, in Arizona began in 1991 and have continued (Lesh and Corman 1995). The majority of surveys, since 1993 have been conducted by the AGFD, which from 1993 to 1995, found CFPOs in xeroriparian habitat in Sonoran Desertscrub at two locations in Organ Pipe Cactus National Monument. In 1996, the AGFD conducted surveys in the Tucson

Area. A total of 41 CFPO detections were made in survey areas within the northwestern Tucson basin including Sonoran Desertscrub habitat south of the Tortolita Mountains. These detections suggested that an estimated that 14 birds were present including a nesting pair. Surveys were conducted between January and June and indicated a peak of activity in the months of February, March and April. CFPOs were most often detected in the morning from one hour before sunrise to two hours after. Approximately half as many detections were recorded in the evening from one to two hours before sunset to two hours after. Although survey times were often extended earlier and later than these time periods, no detections were made at other times.

CFPOs were most often encountered along or within 100 feet of desert riparian areas. All detections were made in paloverde-cacti mixed scrub series of the Arizona Upland subdivision of Sonoran Desertscrub as defined by Turner and Brown (1994). CFPOs were often detected in saguaros and tree species including foothill paloverde, ironwood and velvet mesquite. In addition, CFPOs were often detected in close proximity to residences suggesting the species is tolerant of human activity and low density housing (Abbate et al. 1996).

Recently, extensive CFPO surveys were conducted on the Tonto National Forest in northern Maricopa County to within 20 miles east of the project area. No CFPO detections were made (Johnson and Haight 1998). In addition, a review of a recent summary of all CFPO surveys in Arizona indicate that this species is not likely to be present (SWCA 1998)

The basic habitat requirements for the CFPO within paloverde-cacti mixed scrub series of the Arizona Upland subdivision of Sonoran Desertscrub are present in the project area. Saguaros, though widely scattered are present, some with nest cavities. Foothill paloverde, mesquite, and ironwood are present, with increased density along desert arroyos. Surveys for the CFPO were conducted both morning and evening of January 29 and 30, 2000 according to the survey methods established in the newly revised CFPO survey protocol. No CFPO detections were made.

Despite the presence of seemingly favorable habitat, the project area lies outside the historic distribution of the CFPO. Neither CFPOs or other resident birds (defensive vocalizations or aerial mobbing) responded to taped-call broadcasts, nor were CFPOs heard calling spontaneously along survey routes in the area (see Section 9, Additional Information). The fact that no CFPOs were encountered within the proposed project area does not prove beyond-a-doubt that this species is not present. However, the lack of recent sightings suggests that the species no longer occurs in the Phoenix area, further indicating that no CFPOs are present in the project area. The proposed project will not affect the Cactus Ferruginous Pygmy-owl.

Desert Tortoise

The Sonoran Desert population of the desert tortoise is usually associated with rolling often rocky terrain in the foothills of and within desert mountain ranges, where the relief is apt to provide naturally occurring shelter sites, than in flatter terrain (Barrett 1990; Fritts and Jennings 1994; Germano et al. 1994). In their distribution map for the species, Germano, et al. (1994) include virtually all hilly to mountainous Arizona Upland habitat excluding the intermontane valleys in the region as desert tortoise habitat.

Sonoran Desert tortoises most often utilize, and modify for their use, natural shelter sites. Such sites include caliche bank holes along arroyos, rock crevices, spaces under and among boulder piles (Germano et al. 1994; Martin 1995), debris piles created by woodrats, *Neotoma spp.* (Bailey 1992; Martin 1995) and thick vegetation (Bailey 1992; Martin 1995; Vaughan 1984). Sonoran Desert tortoises will also dig soil burrows to provide additional shelter sites (Bailey 1992; Fritts and Jennings 1994).

It is likely that desert tortoises occur in the general project vicinity. Although the project area is nearly flat, the topography transitions to rolling and low mountainous terrain within three to five miles to the north and west of the project area, promoting the formation of natural shelter sites in arroyo banks and rock piles. The minor desert arroyos present are shallow in depth and do not promote the formation of natural shelter sites. Soil in the area is shallow and underlain by a layer of frequently emergent caliche hardpan, which does not favor construction of underground burrows. No tortoises or evidence of their presence (i.e., scat, scutes, or skeletons) in the area were observed during surveys of the project area. Due to the habitat present, it is unlikely desert tortoises live in the area or travel through the project area from more favorable habitat while foraging. The project will not affect the desert tortoise.

7. Coordination:

The following persons contributed information used in the preparation of this document.

Dr. Steven H. Edelman, Holguin, Fahan & Associates, Inc.
R. Blain Work, Environmental Engineer, City of Phoenix.
Tim Snow, Biologist, Arizona Game and Fish Department

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9. Signatures:

PREPARER: I prepared this Biological Assessment.

Thomas C. Ashbeck, Project Biologist EcoPlan Associates, Inc.	Date
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10. Additional Information:

Complete field notes, supplementary photographs, and maps are available for the aforementioned survey in the project file at EcoPlan Associates, Inc., Mesa, Arizona.

This biological assessment was prepared by Stephen F. Hale, Jeff (TJ) McMicaels and Bruce Brown of EcoPlan Associates.

The project area currently is used for cattle grazing, which share the area with feral burros. The City of Phoenix plans to fence the area, which will prevent entry of cattle and burros. A natural gas pipeline, approximately 200 feet within the project area, parallels New River Road along its eastern boundary. An electrical power line, with wooden poles, lies along the northern boundary, and an Arizona Public Service double steel tower electrical transmission line crosses the northwestern corner of the project area. A large bird nest of branches is lodged near the top of one of the transmission line towers just north of the northern project area. During the survey, a pair of Red-tailed Hawks was observed in the area.

Table 1. Vascular plants observed within or in the vicinity of the City of Phoenix, water treatment Plant project area, Maricopa County, Arizona

<u>Scientific Name</u>	<u>Occurrence</u>	<u>Common name</u>
<i>Acacia greggii</i>	common	catclaw
<i>Ambrosia deltoidea</i>	dominant	triangleleaf bursage
<i>Baccharis sarothroides</i>	rare	desert broom
<i>Bromus rubens</i>	common	red brome
<i>Carnegiea gigantea</i>	common	saguaro
<i>Celtis pallida</i>	common	desert hackberry
<i>Cercidium floridum</i>	rare	blue paloverde
<i>Cercidium microphyllum</i>	common	foothill paloverde
<i>Descurainia pinnata</i>	common	tansy mustard
<i>Echinocereus engelmannii</i>	common	hedgehog
<i>Ephedra fasciculata</i>	rare	Mormon tea
<i>Erioneuron (Tridens) pulchellus</i>	abundant	fluffgrass
<i>Erodium cicutarium</i>	common	filaree
<i>Euphorbia melandenia</i>	common	spurge
<i>Fouquieria splendens</i>	uncommon	ocotillo
<i>Larrea tridentata</i>	dominant	creosote-bush
<i>Mammillaria microcarpa(grahamii)</i>	common	pincushion
<i>Olneya tesota</i>	common	ironwood
<i>Opuntia acanthocarpa</i>	common	buckhorn cholla
<i>Opuntia bigelovii</i>	common	teddy bear cactus
<i>Opuntia leptocaulis</i>	common	desert Christmas cactus
<i>Opuntia phaeacantha</i>	uncommon	Engelmann prickly pear
<i>Plantago insularis</i>	common	plantain
<i>Pleuraphis (Hilaria) jamesii</i>	common	galleta
<i>Prosopis velutina</i>	common	velvet mesquite
<i>Senna covesii (Cassia)</i>	common	desert senna
<i>Sphaeralcea couleri</i>	common	Coulter globe mallow
<i>Zizyphus obtusifolia</i>	uncommon	gray thorn

Table 2. Animals or evidence of their presence observed in the vicinity of the City of Phoenix, Waddell Canal pump station project area, Maricopa County, Arizona

<u>Scientific Name</u>	<u>Evidence</u>	<u>Common name</u>
MAMMALS		
<i>Ammospermophilus harrisi</i>	seen	Harris' ground squirrel
<i>Canis latrans</i>	seen, tracks, droppings	coyote
<i>Dipodomys deserti</i>	mounds	desert kangaroo rat
<i>Dipodomys merriami</i>	mounds	Merriam's kangaroo rat
<i>Equus asinus</i>	seen, track, droppings	feral burro
<i>Lepus californicus</i>	seen	black-tailed jackrabbit
<i>Neotoma albigula</i>	nests	white-throated woodrat
<i>Odocoileus hemionus crooki</i>	shed antlers	desert mule deer
<i>Perognathus spp.</i>	seen	pocket mouse
<i>Sylvilagus auduboni</i>	seen	desert cottontail
<i>Urocyon cinereoagenteus</i>	tracks	gray fox
BIRDS		
<i>Amphispiza bilineata</i>	seen	Black-throated Sparrow
<i>Auriparus flaviceps</i>	seen	Verdin
<i>Buteo jamaicensis</i>	seen	Red-tailed Hawk
<i>Calypte costae</i>	seen	Costa's Hummingbird
<i>Campylorhynchus brunneicapillus</i>	seen	Cactus Wren
<i>Chordeiles acutipennis</i>	seen	Lesser Nighthawk
<i>Colaptes chrysoides</i>	seen	Roadrunner
<i>Eremophila alpestris</i>	seen	Horned Lark
<i>Geococcyx californicus</i>	seen	Gila Woodpecker
<i>Lophortyx gambelii</i>	seen	Gambel's Quail
<i>Melanerpes uropygialis</i>	seen	Gila Woodpecker
<i>Parabuteo unicinctus</i>	seen	Harris' Hawk
<i>Phainopepla nitens</i>	seen	Phainopepla
<i>Picoides scalaris</i>	seen	Ladder-backed Woodpecker
<i>Polioptila melanura</i>	seen	Black-tailed Gnatcatcher
<i>Sayornis saya</i>	seen	Say's Phoebe
<i>Toxostoma curvirostra</i>	seen	Curve-billed Thrasher
<i>Zenaida asiatica</i>	seen	White-winged Dove
<i>Zenaida macroura</i>	seen	Mourning Dove