

ATTACHMENT B

ENDANGERED SPECIES

BIRDS

Yuma Clapper Rail (*Rallus longirostris yumanensis*)

The Yuma clapper rail inhabits marshes along the lower Colorado River, from near the Nevada-California border, south to the Colorado Delta region of Mexico (Anderson, 1983). Much of this marsh habitat has developed on the silt deposits behind Bureau of Reclamation (Reclamation) dams (Eddleman et al., 1988). Yuma clapper rails also occur in marshes around the Salton Sea and elsewhere in the Imperial Valley where suitable marsh habitat exists (Bennett and Ohmart, 1978). Historic occurrence of the Yuma clapper rail in the Imperial Valley is not well documented, but the species apparently occurred around the Salton Sea at least as early as 1940 (Abbot, 1940; referenced in Anderson, 1983).

Principal Yuma clapper rail population concentrations occur at the Imperial Wildlife Area-Wister Unit and the Salton Sea National Wildlife Refuge. Yuma clapper rails are also known to occur between Drops 3 and 4 along the All-American Canal (AAC) and in other seep areas associated with the Coachella and East Highline Canals (Gould, 1975; Jurek, 1975; Bennett and Ohmart, 1978; Kasprzyk et al., 1987).

Preferred Yuma clapper rail habitat generally consists of freshwater marshes with stands of mature, emergent vegetation such as cattail or bulrush, shallow water, and accessible high ground for nesting areas (Smith, 1974). The highest densities of Yuma clapper rails occur in stands of cattails dissected by narrow channels of flowing water (Anderson, 1983). Food primarily consists of crayfish (*Procambarus* sp. and *Orcopectes* sp.), although Yuma clapper rails tend to be opportunistic and will feed on other items such as small fish, clams, and aquatic insects when available (Ohmart and Tomlinson, 1977).

Until recently, it was thought that most Yuma clapper rails migrated in the fall, as the crayfish resource became dormant (Anderson and Ohmart, 1985). Recent studies indicate that along the lower Colorado River, at least 70 percent of the population does not migrate, and crayfish are active all year (Eddleman, 1989). The year-long residency of this population of Yuma clapper rails along the lower Colorado River, as well as in the Salt Creek marsh area, may be at least partly dependent on the availability of crayfish.

Yuma Clapper Rail Survey Results

Several Yuma clapper rail surveys have been conducted during the past decade along the AAC. Surveys conducted between Drops 3 and 4 on April 30, and May 1, 1981, detected 17 Yuma clapper rails (Wheeler, 1981). Ten birds were detected during a May 20, 1982, survey. However, it is not clear whether this survey included marsh habitat west of the present project area (west of Drop 4) (Busch and Forman, 1982).

As background for preparation of Reclamation's previous biological assessment (Reclamation, 1985), Yuma clapper rails were surveyed in the project area during the spring of 1984. The area covered was identical to that covered by Wheeler (1981). Taped recordings were played at 250-foot intervals. Responses and locations were noted. The survey was conducted on three mornings, each during the weeks of April 9-13, and May 14-18, 1984. From these surveys, a minimum population size of three Yuma clapper rails was identified for 1984.

In 1988, surveys were conducted on April 21 and May 18 (Reclamation, 1988). The area covered and methodology used was the same as previous Reclamation surveys. During each of the surveys, at least three Yuma clapper rails responded to the taped vocalizations in the marsh between the south side of the canal and the collection canal. The Yuma clapper rails appeared to be in marsh types 4 and 5.

Conclusions From Survey Results

The marsh/wetland between Drops 3 and 4 of the AAC is occupied by the Yuma clapper rail. Approximately 111 acres of suitable marsh habitat exists in this area. Suitable habitat continues west of Drop 4 (outside the project area) to approximately the turnout of the East Highline Canal. Based on field inspections, the 103 acres of wetlands between Drops 2 and 3 were determined to be unsuitable Yuma clapper rail habitat (Ray Bransfield, personal communication; personal observation).

CANDIDATE SPECIES

Although candidate species do not have protection in accordance with section 7(c) of the Endangered Species Act of 1973, as amended, they are included in the assessment in the event that their status changes during the course of construction.

BATS

The status of bats in California is not well known; however, there is increasing evidence of significant declines in the populations of a number of species. Ongoing studies by California Department of Fish and Game will provide information on statewide occurrence and population trends for special status species (Caryla Larsen, personal communication). There are five candidate species of bats that may occur in the project area and are described as follows:

Mexican Long-Tongued Bat (*Choenycteris mexicana*)

In the United States, the Mexican long-tongued bat is most commonly found in the mountains of southeastern Arizona. However, there is a population in San Diego

County, California. These bats are associated with deep rocky canyons where they roost in caves and mines. These bats feed mostly on nectar and pollen. There are no known records of this species from the project area.

California Leaf-Nosed Bat (*Macrotus californicus*)

This species is a resident of desertscrub communities of the Southwest. It often roosts during the day in abandoned mine tunnels in rocky canyons. Nocturnal sites used for resting during foraging activities include manmade structures, rock shelters, and mines. There are no known records of this species from the project area.

Southwestern Cave Myotis (*Myotis velifer brevis*)

This subspecies occurs in the deserts of Arizona, northern Mexico, and extreme southeastern California mainly along the lower Colorado River. It roosts and nests in caves where it has been probably impacted by human disturbance.

Spotted Bat (*Euderma maculata*)

Little information is available on the spotted bat. This species used to be quite common in coastal and central California. There is one record for the spotted bat in Riverside County, a dead individual found near Mecca in 1903 (Pat Brown, personal communication). There is no evidence that populations of spotted bats occur in the project area.

Greater Western Mastiff Bat (*Eumops perotis californicus*)

This species has declined in number over the years and is considered by some to be the highest priority bat species in California. The mastiff bat ranges from the central California coast into the desert Southwest. It prefers rugged rocky canyons where crevices on high cliff faces provide preferred roost sites (Barbour and Davis, 1969). It is also known to roost in trees, buildings, and tunnels. It emerges at late dusk to feed on hymenopterous insects (Burt and Grossenheider, 1964).

Occult Little Brown Bat (*Myotis occultus*)

The occult bat roosts colonially in caves, mine tunnels, hollow trees, and buildings. It emerges at dusk to feed on insects near water (Burt and Grossenheider, 1964). It is known from riparian areas along the lower Colorado River and is more common in Arizona than in California (Pat Brown, personal communication).

BIRDS

Ten candidate species of birds were indicated by the U.S. Fish and Wildlife Service (FWS) to be of concern in the project area. The most recent surveys for California black rails were conducted concurrent with Yuma clapper rail surveys during April and May 1988 (Reclamation, 1988). The status and distribution of the other nine candidates is based on existing information.

California Black Rail (*Latterallus jamaicensis coturniculus*)

This subspecies of California black rail occurs along the California coast from Tomales Bay in Marin County, north to San Diego Bay and Baja California. It also occurs in interior southern California and in Arizona. The overall status of the California black rail is, at present, unknown. However, it is generally believed that overall numbers of California black rails have declined due to degradation and elimination of fresh and salt water wetland habitat (Wilbur, 1974).

Preferred habitat of California black rails is characterized by minimum water fluctuations that provide moist surfaces or very shallow water, gently sloping shorelines, and dense stands of marsh vegetation (Repking and Ohmart, 1977).

Surveys for the California black rail in the Imperial Valley are few. Jurek's and other investigations of 1974 and 1975 included marsh habitats between the Coachella and East Highline Canals only. Kasprzyk detected 30 to 50 California black rails along the AAC marsh located between Drops 3 and 4 during surveys in April and May 1984 (Kasprzyk et al., 1987). There are no records of California black rails occurring elsewhere along the canal.

Recently, California black rails were censused in the project area during April and May 1988, during surveys for Yuma clapper rails (Reclamation, 1988). A minimum population of three California black rails was recorded for the area between Drops 3 and 4. The California black rails were found in the same general areas as the Yuma clapper rails, in the types 4 and 5 marshes on the south side of the AAC. The reason for the large decrease of numbers of California black rails detected in the 1988 survey compared to the 1984 survey is not known.

White-Faced Ibis (*Plegadis chichi*)

The white-faced ibis is a fairly common transient and summer visitor in the Salton Sea area, breeding locally and irregularly (Garrett and Dunn, 1981). Personnel from the Salton Sea National Wildlife Refuge report flocks of 4,000 to 5,000 in the winter at the Salton Sea, where they feed in flooded alfalfa fields (B. Henry, personal communication). The white-faced ibis feeds on crayfish, other invertebrates, and small fish in marshes, irrigated fields, and shallow backwaters. It has not been reported from the project area but could occur in the seep wetlands.

Fulvous Whistling Duck (*Dendrocygna bicolor*)

The fulvous whistling duck is an uncommon breeder in the Salton Sea area, preferring dense stands of cattails with adjacent shallow water (Garrett and Dunn, 1981). Salton Sea National Wildlife Refuge reports 40-50 pairs of fulvous whistling ducks (B. Henry, personal communication). It also is known to forage in irrigated fields in the Imperial Valley. There are no known records in the project area.

Swainson's Hawk (*Buteo swainsoni*)

The Swainson's hawk is observed occasionally in the Imperial Valley during spring and particularly during fall migration (Garrett and Dunn, 1981; B. Henry, personal communication). This hawk is not known to breed in the general area and has not been observed in the affected environment. It winters in South America.

Ferruginous Hawk (*Buteo regalis*)

Migrating ferruginous hawks are observed with greater frequency than Swainson's hawks during spring in the vicinity of the Salton Sea National Wildlife Refuge (B. Henry, personal communication). The species is also known as a winter visitor in the Imperial Valley (Garrett and Dunn, 1981) but is not known to breed in the desert southwest. It is usually associated with agricultural land but has not been observed in the project area.

Western Snowy Plover (*Charadrius alexandrinus nivosus*)

The Western snowy plover is primarily a summer resident in the Imperial Valley. It nests at the Salton Sea along gravelly beaches, salt pans, and alkali flats. It feeds in very shallow water not far from the nest area (Garrett and Dunn, 1981; B. Henry, personal communication). It also feeds in agricultural fields. This species has not been observed in the project area.

Mountain Plover (*Charadrius montanus*)

Mountain plovers are fairly common winter residents in the Imperial Valley (Garrett and Dunn, 1981), congregating in flocks of up to 1,000 in bermuda grass and plowed fields (B. Henry, personal communication). This species has not been observed in the project area.

Long-Billed Curlew (*Numenius americanus*)

The long-billed curlew is present most of the year in the Imperial Valley, foraging in flooded alfalfa fields. There are no documented breeding records of this species for the area (B. Henry, personal communication).

Tricolored Blackbird (*Agelaius tricolor*)

Personnel from the Salton Sea National Wildlife Refuge regard the tricolored blackbird as accidental in its occurrence in the area (B. Henry, personal communication). Reports of large flocks near the north end of the Salton Sea have been determined to be nonconclusive (Garrett and Dunn, 1981). However, this species is associated with wetlands of the desert Southwest (Ray Bransfield, personal communication). This species has not been observed in the project area.

Large-Billed Savannah Sparrow (*Passerculus sandwichensis rostratus*)

This species breeds in marshes in the head of the Gulf of California, particularly in the Colorado River Delta. Its decline as a fall and winter visitor of coastal California may be due to habitat changes in the Colorado River Delta (Unitt, 1984).

It is a rare postbreeding and winter visitor to the Salton Sea area and lower Colorado River. The large-billed savannah sparrow has been observed primarily in salt cedar scrub near the mouths of rivers (Garrett and Dunn, 1981).

REPTILES

Flat-Tailed Horned Lizard (*Phrynosoma m'callii*)

The flat-tailed horned lizard occurs in the desert lowlands of Imperial, Riverside, and San Diego Counties; south to Baja California and Sonora, Mexico, and in the extreme southwestern portion of Arizona (Turner et al., 1980). The original range of the species has diminished in recent years due to human activities (Turner et al., 1980). In Imperial County, habitat has diminished with the development of agriculture, housing, off-road vehicle use, and other human activities. Flat-tailed horned lizard habitat is characterized by areas of low relief with surface soils of fine, packed sand, or pavement overlain with loose, fine, windblown sand (Turner et al., 1980). Optimal habitat is found in the desertscrub community; however, the species is also known to occur at the edges of vegetated sand dunes, on barren clay soil, and in sparse saltbush communities. Diet of the flat-tailed horned lizard consists almost exclusively of harvester ants. Observations of the species were correlated with numbers of black harvester ant nests (Turner and Medica, 1982).

The majority of the project area may be classified as flat-tailed horned lizard habitat, with the exception of the wetlands between Drops 3 and 4, and the main portion of the Sand Hills.

Flat-Tailed Horned Lizard Survey Results

Surveys for the flat-tailed horned lizard were conducted in May 1984 and again in June 1993 (FWS, 1984 and FWS, 1993a). Techniques followed those of Turner and Medica (1982) and Bureau of Land Management (1990) which determine presence and absence and the possibly relative abundance based on counts of flat-tailed horned

lizards and their scat. Results of the two surveys were similar. The only areas in which flat-tailed horned lizards were observed were between Drops 1 and 3; however, scat was also observed east of the eastern Interstate 8 crossing of the Algodones Dunes. Number of scat per hour were comparable to other studies. The greatest number of scat were counted between Drops 1 and 2, and within 2.8 miles of the southeast of the eastern Interstate 8 crossing (FWS, 1993a; Rorabaugh, 1984). FWS (1993a) surmised that the species is probably absent from the high dunes between Drop 1 to about the eastern Interstate 8 crossing, and in the eastern 4.2 miles of the project area. Although this species is well distributed along the AAC, this area has not been identified as a key area for the species (Turner and Medica, 1982). Also, the area is isolated from other flat-tailed horned lizard habitat by the AAC, Interstate 8 on the north, and agricultural development in the Mexicali Valley to the south.

Colorado Desert Fringe-Toed Lizard (*Uma notata notata*)

The range of this species is extreme southeastern California west to extreme eastern San Diego County, and northeastern Baja California. The Colorado desert fringe-toed lizard is highly adapted to living in areas of windblown sand and is not known to occur elsewhere (Smith, 1971). Distribution is restricted to fine, loose, windblown sand of dunes, flats, riverbanks, and washes (Stebbins, 1985). It is most abundant on well-developed dunes, but does occur on level or undulating sand with very low vegetation.

Colorado desert fringe-toed lizards often seek cover under shrubs at the foot of dunes. They burrow in sand during hot or cold weather and go into torpor in winter. The lizards usually hibernate on the lee side of the dunes and can tolerate being buried by up to 12 feet of wind-deposited sand. Hibernation occurs between November and February.

Habitat for this species occurs within the affected environment, specifically where the AAC traverses the Sand Hills. During Reclamation surveys for the flat-tailed horned lizard, approximately 100 Colorado desert fringe-toed lizards were sighted in the Sand Hills along the 600-foot-wide transect immediately adjacent to the north side of the AAC. The number of sightings probably reflects both their apparent high abundance in this area and their relative detectability.

During April 1989, a Reclamation survey was conducted along the AAC to ascertain the quality of sand dune habitat in relation to current off-road vehicle use. On the basis of apparent impacts of off-road vehicle use and habitat suitability for sensitive dune associated species, reaches of the canal berms were identified as low, moderate, or high sensitivity to disturbance. It was determined that approximately 2 miles along the north side of the canal between Interstate 8 crossing and Drop 1 was highly sensitive to disturbance and was relatively good Colorado desert fringe-toed lizard habitat. This area appeared to have relatively light off-road vehicle disturbance, probably due to the steep slopes of the dunes encroaching on the AAC bank. Colorado desert fringe-toed lizards were observed in this area.

Surveys for the Colorado desert fringe-toed lizard were conducted concurrently with sensitive plant surveys in April 1993 (FWS, 1993a). As rare plants were surveyed,

Colorado desert fringe-toed lizards were counted in the AAC right-of-way through the sand dunes from about 1.5 miles west of Pilot Knob to Drop 1. A total of 240 Colorado desert fringe-toed lizards was observed. The species was observed in 36 of 55 1,000-foot reaches and well distributed through both high and low dunes. The Colorado desert fringe-toed lizard probably occurs wherever dune habitats are present. Reaches where the species was not observed were likely surveyed too early or too late in the day when temperatures were not suitable for activity.

PLANTS

Giant Spanish Needles (*Palafoxia arida* var. *gigantea*)

This species is a woody perennial restricted to stable and active sand dunes in southeast California, western Arizona, and Baja California. During the 1984 survey, 2,908 plants were counted between Interstate 8 and Drop 1 (Reclamation, 1984). Its distribution varied from widely spaced individuals to dense clumps in both disturbed and undisturbed sand habitat. Results of April 1993 surveys (FWS, 1993a) indicated an abundance of this species within the proposed canal right-of-way. Over 23,000 individuals were found.

Peirson's Milkvetch (*Astragalus magdalene* var. *perisonii*)

Peirson's milkvetch is a candidate species for Federal listing and listed as endangered by the State of California. This species is a woody perennial member of the pea family restricted to slopes and hollows of mobile dune systems in the Algodones system and Borrego Valley, California.

In the Algodones area, the species tends to grow in the west and central portions of the dunes. During 1984 surveys, Reclamation biologists found 1,422 plants in sand dune habitat between Interstate 8 and Drop 1 (Reclamation, 1984). The species was found grouped in clusters on stable slopes, depressions, and conically shaped hollows. Results of April 1993 surveys (FWS, 1993a) indicated an occurrence of this species within a 1-mile reach of the proposed canal right-of-way. Over 1,300 individuals were found.

Sand Food (*Pholisma sonora*)

Sand food is a candidate species for Federal listing. This species is an obligate parasite. Its host plants include two species of coldenia, *coldenia palmeri* and *c. plicata*, and desert buckwheat *eriogonum desertigola*. This species is found throughout the project area. FWS and Reclamation personnel surveyed a 600-foot wide corridor along the proposed realignment route for sensitive plant species on April 10 and 12, 1984 (Smith et al., 1984). The area was resurveyed by FWS in 1993 (FWS, 1993a). During the 1993 survey, 215 individuals were observed.

Silver-Leaved Dune Sunflower (*Helianthus niveus* spp. *tephrodes*)

Silver-leaved dune sunflower is a candidate species for Federal listing, listed as endangered with the State of California, and is also listed with California Native Plant Society. This species is restricted to unconsolidated and fairly mobile sand dunes. The subspecies in question is restricted to the Sand Hills in Imperial County, Yuma County, Arizona, and northern Mexico. On the Sand Hills, it is generally found only on the central axis of the area. During the 1984 surveys,¹ a total of 885 plants was found evenly distributed along the survey area between Interstate 8 and Drop 1 along the north side of the canal (Reclamation, 1984).

Results of April 1993 surveys (FWS, 1993a) indicated an occurrence of this species within the high dunes system. A total of 218 individuals were observed within the proposed canal right-of-way.

Wiggin's Croton (*Croton wigginsii*)

Wiggin's croton is listed as endangered with the State of California. In California, this woody perennial inhabits stable and active sand dunes and sandy washes in the Sand Hills system. During the 1984 surveys, 1,447 individuals were counted in the western section of the dunes north of the Interstate 8 (Reclamation, 1984).

Results of April 1993 surveys (FWS, 1993a) indicated an occurrence of this species within the high dunes system as well as isolated populations in the smaller dunes. A total of 338 individuals were observed within the proposed canal right-of-way.

INSECTS

Andrew's Dune Scarab Beetle (*Pseudocatalpa andrewsii*)

Andrew's dune scarab beetle is presumed to be endemic to the Sand Hills, Imperial County, California, and probably in portions of the sand dune system in Baja California Norte, Mexico. Distribution of the species is apparently widespread across the main dune mass. However, there is no evidence that it inhabits areas other than the main dunes (Hardy and Andrews, 1979). This beetle specifically inhabits troughs of loose drifting sand between the dunes. They have been observed buried 12 inches deep in the sand. Little is known about its life history.

Surveys were not conducted for this species. It is presumed that it occurs in most sandy habitat in and adjacent to the Sand Hills, especially in the area between the Interstate 8 crossing and Drop 1.

¹ This survey consisted of walking a 600-foot-wide section which was subdivided into 200-foot zones (Reclamation, 1984).