

Attachment E

Environmental Appendix Update

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Attachment E-1

**Southwestern Willow Flycatcher (*Empidonax Traillii Extimus*) Summary of Spring 2000
Survey Results And Habitat Assessment for the Coachella Canal Lining Project**

ATTACHMENT E-1

SOUTHWESTERN WILLOW FLYCATCHER (*Empidonax traillii extimus*) SUMMARY OF SPRING 2000 SURVEY RESULTS AND HABITAT ASSESSMENT FOR THE COACHELLA CANAL LINING PROJECT

Summary

Some of the aquatic/marsh and desert riparian habitats along the unlined portion of the Coachella Canal may provide marginal habitat for transient or migrant southwestern willow flycatchers, but these do not represent suitable breeding habitat for this species.

Description and Life Requisites:

Willow flycatchers are found throughout North America and are further divided taxonomically into four subspecies, *E.t. brewseri*, *E.t. adastus*, *E.t. trallii*, and *E.t. extimus*. In January 1992, the U.S. Fish and Wildlife Service (FWS) was petitioned to list the southwestern willow flycatcher, *Empidonax traillii extimus*, as an endangered species. In July 1993, the species was proposed as endangered with critical habitat (58FR39495). On February 27, 1995, FWS listed the southwestern willow flycatcher as an endangered species (60FR10694). There is no recovery plan in place as of this writing and the designated critical habitat does not include the proposed project area.

As a member of the genus *Empidonax*, willow flycatchers are known for the difficulty in identifying individuals to species in the field (Phillips et al., 1964; Peterson, 1990; Sogge et al., 1997). The southwestern willow flycatcher is a small bird, approximately 5.75 inches in length, with a grayish-green back and wings, whitish throat, light grey-olive breast, and pale yellowish body. Two white wing bars are visible. The upper mandible is dark, the lower light. The most distinguishable taxonomic characteristic of the southwestern willow flycatcher is the absent or faintly visible eye ring. The southwestern willow flycatcher can only be positively differentiated in the field from other species of its genus by its distinctive “fitz-bew” song.

Southwestern willow flycatchers nest in riparian habitat characterized by dense stands of intermediate sized shrubs or trees. Most southwestern willow flycatcher nests are located in the fork of a shrub or tree from 4 to 25 feet above the ground (Unitt, 1987; Sogge, 1997). Nesting willow flycatchers of all subspecies generally prefer areas with surface water nearby (Bent 1960, Stafford

and Valentine 1985, Harris et al., 1987), but *E. t. extimus* virtually always nests near surface water or saturated soil (Phillips et al., 1964; Muiznieks et al., 1994; McKernan and Braden, 1998). At some nest sites surface water may be present early in the breeding season but only damp soil is present by late June or early July (Muiznieks et al., 1994; M. Whitfield, Kern research Center, in litt., 1993; J. and J. Griffith, Griffith Wildlife Biology, in litt.- 1993). Ultimately, a water table close enough to the surface to support riparian vegetation is necessary.

The majority of southwestern willow flycatchers observed during the past five years of surveys on the lower Colorado River have been found in salt cedar, *Tamarix ramosissima*, or a mixture of salt cedar and native cottonwood and willow, especially Goodings willow, *Salix gooddingii*, coyote willow, *S. exigua*, and Fremont cottonwood, *Populus fremontii*. Based on available information at the time of this writing, aside from the presence of water and dense structure of vegetation, no clear distinctions can be made based on perennial species composition as to what constitutes appropriate southwestern willow flycatcher habitat. Due to the difficulty in determining the presence of this species in dense habitat, its presence should not be ruled out until surveys have been conducted if habitat meeting the general description given is above is present.

The southwestern willow flycatcher is an insectivore, foraging within and above dense riparian habitat, catching insects in the air or gleaning them from the surrounding foliage. It also forages along water edges, backwaters, and sandbars adjacent to nest sites. Details on specific prey items can be found in Drost et al. (1998).

Distribution and Abundance

Historically, the southwestern willow flycatcher was widely distributed and fairly common throughout its range, especially in southern California and Arizona (Unitt, 1987; Schlorff, 1990). Nest and egg collection by Herbert Brown suggested that the southwestern willow flycatcher was a common breeder along the lower Colorado River near Yuma in 1902 (Unitt, 1987).

A long-distance migrant, the southwestern willow flycatcher winters in Mexico from Nayarit and southwestern Oaxaca south to Panama and possibly extreme northwestern Columbia and migrates widely through the southern U.S., occurring as a regular migrant south to the limits of the wintering range (Peterson, 1990; Sogge, 1997, AOU, 1998). Recent field studies in Costa Rica by Koronkiewicz and Whitfield (1999) and studies of museum specimens by Phil Unitt (1999) collaborate previous information on the species' range. One specimen of willow flycatcher captured in Costa Rica during the winter of 1999 was banded previously at the Ash Meadows National

Wildlife Refuge (NWR) in southern Nevada in July 1998 (Koronkiewicz and Whitfield, 1999). The Ash Meadows NWR is within the identified breeding range of this southwestern subspecies and thus the capture in Costa Rica is the most recent confirmed wintering site of *E. t. extimus*. Breeding range for the species as a whole extends as far south as northern Sonora, and Baja California (AOU, 1998) and north into Canada. Breeding range for the southwestern subspecies (*E. T. extimus*) extends from extreme southern Utah and Nevada, through Arizona, New Mexico, and southern California. The species has been documented at El Doctor wetlands, Colorado River delta, Sonora Mexico June 7 and 8, 1999 (Huerta, University of Arizona, pers. comm.). This sighting confirms the area is used for migration, but does not confirm breeding. The presence of the subspecies after June 15 is required to confirm breeding (Sogge et al., 1997; Braden and McKernan, 1998).

All three subspecies of the willow flycatcher (*E. T. extimus*, *E. t. brewsteri*, and *E. t. adastus*) were once considered widely distributed and common in California, wherever suitable habitat existed (Wheelock, 1912; Willett, 1912; Grinnell and Miller, 1944). The historic range of *E. t. extimus* in California apparently included all lowland riparian areas of the southern third of the State. Unitt (1984, 1987) concluded that it was once fairly common in the Los Angeles basin, San Bernardino/Riverside area, and San Diego County. Willett (1912, 1933) considered the bird to be a common breeder in coastal southern California.

On the lower Colorado River, southwestern willow flycatchers begin arriving on breeding territories in early-May and continue to be present until August, with some records into early September (McKernan and Braden, 1998). Recent studies have documented nest building as early as May 1 (McKernan, 1997) and feeding dates as late as September 9 (McKernan and Braden, 1998).

Population Status

In 1993, FWS, estimated that only 230 to 500 nesting pairs existed throughout its entire range (58FR39495). However, since extensive surveying has been implemented, this number has increased, especially on the lower Colorado River where the species was thought to have been extirpate (Hunter et. Al., Rosenberg et al., 1991; McKernan and Braden, 1999). Sixty four nesting attempts were documented on the lower Colorado River from southern Nevada to Needles, California in 1998 (McKernan and Braden, 1999).

Several factors have caused the decline in southwestern willow flycatcher populations. Extensive areas of suitable riparian habitat have been lost due to river regulation and channelization, agriculture

and urban development, mining, road construction, and overgrazing (Phillips et al., 1964; Johnson and Haight, 1984; Unitt, 1987; Rosenburg et al., 1991; Sogge et al., 1997).

In California breeding by all three subspecies has declined, with declines most critical in *E. t. extimus*, which remains only in small, disjunct nesting groups (Unitt, 1984 and 1987; Gaines, 1988; Schlorff, 1990). Only two nesting groups have been stable or increasing in recent years. One is on private land where habitat impacts from livestock grazing have been virtually eliminated (Harris et al., 1987; Whitfield, 1990). This group on the South Fork of the Kern River experienced numerical declines in 1991 and 1992, but increases in nesting success were realized in 1992 and 1993, attributed to the removal of cowbird eggs or nestlings found in flycatcher nests, and also by trapping adult cowbirds. The other apparently stable nesting group is along the Santa Margarita River on Marine Corps Base Camp Pendleton, where cowbird numbers have also been reduced by trapping (Griffith and Griffith, 1993). Approximately eight other nesting groups are known in southern California, all of which consisted of six or fewer nesting pairs in recent years (Unitt, 1987; Schlorff, 1990). Using the most recent information for all areas, approximately 70 pairs and 8 single southwestern willow flycatchers are known to exist in California. Where information on population trends since the mid-1980s is available, most areas show declines. Three recent status reviews considered extirpation from California to be possible, even likely, in the foreseeable future (Garrett and Dunn, 1981; Harris et al, 1986; Schlorff, 1990). The State of California classifies the willow flycatcher as endangered.

Effects Analysis

Habitat associated with the Coachella Canal and which may have some potential to be used by the southwestern willow flycatcher are areas of dense riparian and/or marsh vegetation types. These areas are found primarily within the Dos Palmas Area of Critical Environmental Concern (ACEC). Although approximately 3,000 acres of generally described aquatic/marsh and desert riparian habitat exists within the ACEC, less than approximately 400 acres have potential to provide habitat for the southwestern willow flycatcher. The areas with the highest degree of potential are the areas along the western edge of the canal near Frink Springs, Imperial County, and Dos Palmas Oasis, Riverside County.

The area near Frink Spring contains a series of natural braided channels which drain west from the Coachella canal. These braided channels near Frink Springs contain emergent vegetation either cattail (*Typha sp.*) or willow (*Salix sp.*), as well as, salt cedar (*Tamarix sp.*). Occasionally these braided channels are > 200m in length and 2-4m wide. Source waters from the Dos Palmas Springs

Oasis feed into channels and ponds that support marsh/aquatic, California fan palm oasis, and tamarisk vegetation types.

To determine suitability and/or occupancy of these areas by southwestern willow flycatchers, three (non-protocol) initial surveys were conducted by Reclamation and San Bernardino County Museum biologist on the 2nd and 3rd of May and the 14th of June, 2000. All surveys were conducted using willow flycatcher playback tapes between 0430 and 1100. All suitable vegetation in the Frink Springs and Dos Palmas Springs Oasis area was included in the surveys.

During the field reviews the habitat observed was, at best, rated marginal due to its linear nature, lack of saturated soil, and/or overall paucity of dense vegetation with associated (underlying) surface water or saturated substrate (McKernan, pers. comm.). Nonetheless, the survey efforts resulted in one willow flycatcher vocal response in the vicinity of Frink Springs. The response was a “wit” call which is not indicative of breeding southwestern willow flycatchers. In an effort to further eliminate, or confirm, the possibility of breeding breeds, a follow-up survey was conducted on the 24th of June, 2000. The area where the “wit” response was detected was vigorously re-surveyed, again using playback tapes. No additional willow flycatcher responses were detected during this survey. The fact that the only response was a “wit” response and was not further detected on the June 24th survey indicates that the initial response was from a transient bird and not a breeding bird.¹

From the information obtained from the above mentioned surveys, the habitat presently associated with the Coachella Canal should not be considered southwestern willow flycatcher breeding habitat. At a minimum, the areas which have the highest potential was only rated marginal habitat. Given these observations and in consideration of the proposed mitigation for the marsh habitat associated with the Coachella Canal, it is our conclusion that the proposed Coachella Canal Lining Project may, but not likely adverse affect, the southwestern willow flycatcher.

¹ Wit responses are not indicative of breeding southwestern willow flycatchers and only “fitz bew” responses after June 15 should be considered to be non-transitory, breeding birds (Sogge et al., 1997)

REPORT PREPARATION

This summary report was prepared by Mike Walker, Supervisory Biologist, Bureau of Reclamation, Yuma Office. The southwestern willow flycatcher surveys referenced in this report were directed by Robert McKernan, San Bernardino County Department of Community and Cultural Resources County Museum, Redlands, California.

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PERSONAL COMMUNICATIONS

McKernan, Robert, San Bernardino County Department of Community and Cultural Resources
County Museum, Redlands, California

Attachment E-2

**Flat-tailed Horned Lizard Conservation Agreement -
Standard Conservation Measures**

Attachment E-2

List of Standard Mitigation Measures for Flat-tailed Horned Lizard

The following mitigation measures are to be incorporated into all surface-disturbing projects where applicable. The measures are to be modified to conform with the nature of the project.

1. Within flat-tailed horned lizard management areas and the research area, construction in areas unsuitable for burrowing by flat-tailed horned lizards shall be limited to the dormant period (November 15 through February 15) for the flat-tailed horned lizard.
2. A worker education program shall be developed and implemented. Wallet-cards summarizing this information shall be provided to all construction and maintenance personnel. The education program shall include the following aspects at a minimum:
 - biology and status of the flat-tailed horned lizard,
 - protection measures designed to reduce potential impacts to the species,
 - function of flagging designating authorized work areas,
 - reporting procedures to be used if a flat-tailed horned lizard is encountered in the field, and
 - importance of exercising care when commuting to and from the project area to reduce mortality of flat-tailed horned lizards on roads.
3. To the extent possible, surface-disturbing projects shall be located outside of flat-tailed horned lizard management areas and the research area. If a project must be located within a management area or the research area, effort shall be made to locate the project in a previously disturbed area or in an area where habitat quality is poor. A survey of the project site shall be conducted prior to construction in order to assist in locating the project.
4. Prior to project initiation, an individual shall be designated as a field contact representative (FCR). The FCR shall have the authority to ensure compliance with protective measures for the flat-tailed horned lizard and will be the primary agency contact dealing with these measures. The FCR shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
5. All project work areas shall be clearly flagged or similarly marked at the outer boundaries to define the limit of work activities. All construction and restoration workers shall restrict their activities and vehicles to areas which have been flagged to eliminate adverse impacts

from the project area. The terrarium shall be maintained at 10 to 20° C until conditions at the site are appropriate for release. Lizards shall be allowed to acclimate to higher surface temperatures prior to release. The biologist shall be allowed some judgement and discretion to ensure that survival of flat-tailed horned lizards found in the project area is likely.

10. Within flat-tailed horned lizard habitat, the area of disturbance of vegetation and soils shall be the minimum required for the project. [If possible, specify a maximum disturbance allowable based on the specifics of the project.] Clearing of vegetation and grading shall be minimized. Wherever possible, rather than clearing vegetation and grading the right-of-way, equipment and vehicles shall use existing surfaces or previously disturbed areas. Where grading is necessary, surface soils shall be stockpiled and replaced following construction to facilitate habitat restoration. To the extent possible, disturbance of shrubs and surface soils due to stockpiling shall be minimized.
11. Existing roads shall be used for travel and equipment storage whenever possible.
12. Where feasible and desirable, in the judgement of the lead agency, newly created access routes shall be restricted by constructing barricades, erecting fences with locked gates at road intersections, and/or by posting signs. In these cases, maintenance of access control structures and facilities shall be maintained by the project proponent for the life of the project and until habitat restoration is completed, including monitoring.
13. Sites of permanent or long-term projects in MAs where continuing activities are planned and where flat-tailed horned lizard mortality could occur shall be enclosed with flat-tailed horned lizard barrier fencing to prevent lizards from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should consist of 0.5-inch wire mesh fastened securely to posts. The wire mesh should extend at least 12 inches above the ground and 12 inches below the surface of the ground. Any gates or gaps in the fence should be constructed to prevent lizard entry. After clearing the area of horned lizards, no on-site monitor is required (see Measure 6).
14. A project-specific habitat restoration plan shall be developed by the project proponent under approval by the lead agency. The plan shall consider and include as appropriate the following methods: replacement of topsoil, seedbed preparation, fertilization, seeding of species native to the project area, noxious weed control, and additional erosion control. Generally, the restoration objective shall be to return the disturbed area to a condition that will perpetuate previous land use. Periodic inspection of the restored area shall be conducted by the project proponent. Restoration shall include eliminating any hazards to flat-tailed horned lizards created by construction, such as holes and trenches in which lizards might become entrapped. Disturbance of existing perennial shrubs during restoration shall be minimized, even if such shrubs have been crushed by construction activities.

to the flat-tailed horned lizard and its habitat. All workers shall be instructed that their activities are restricted to flagged and cleared areas.

6. Within MAs [or outside MAs if judged necessary], a biological monitor shall be present in each area of active construction throughout the work day from initial clearing through habitat restoration, except where the project is completely fenced and cleared of horned lizards by a biologist (see Measure 13). The biological monitors shall have sufficient education and field experience or training with the flat-tailed horned lizard to understand its biology and behavior. The monitor(s) shall perform the following functions:
 - a. Ensure that all project-related activities are in compliance with these measures. The biological monitor shall have the authority and responsibility to halt activities that are in violation of these terms and conditions.
 - b. Examine construction areas periodically (at least hourly when surface temperatures exceed 30° C) for the presence of flat-tailed horned lizards. In addition, all hazardous sites (e.g., open pipeline trenches, holes, or other deep excavations) shall be inspected for the presence of flat-tailed horned lizards prior to backfilling.
 - c. Work with the construction supervisor to take steps, as necessary, to avoid disturbance to flat-tailed horned lizards and their habitat. If avoiding disturbance to a flat-tailed horned lizard is not possible or if a flat-tailed horned lizard is found trapped in an excavation, the affected lizard shall be captured by hand and relocated.
7. Only persons authorized by the California Department of Fish and Game [California] or the Arizona Game and Fish Department [Arizona] shall be permitted to handle flat-tailed horned lizards.
8. If surveys are required, they must be conducted as specified in the interim survey protocol (Appendix 7) or an alternative subsequently approved by the Management Oversight Group.
9. Relocated flat-tailed horned lizards shall be placed in the shade of a large shrub a short distance from the construction zone and in the direction of undisturbed habitat. If surface temperatures in the sun are less than 30° C or exceed 50° C, the biologist or FCR, if authorized to handle, shall hold the flat-tailed horned lizard for later release. Initially, captured flat-tailed horned lizards shall be held in a cloth bag, cooler, or other appropriate clean, dry container from which the lizard cannot escape. Lizards shall be held at temperatures between 25 and 35° C and shall not be exposed to direct sunlight. Release shall occur as soon as possible after capture and during daylight hours when surface temperatures range from 32 to 40° C. If such conditions do not occur within 48 hours of capture, the lizard shall be transferred to a terrarium containing at least 2 inches of sand

Attachment E-3

Schematic Diagram of Escape Ramps

Schematic Diagram of Canal Escape Ramps

Plan View - Not to Scale

