Hodges (1995) estimated that between 212 and 222 mi^2 (135,680-142,080 acres) of flat-tailed horned lizard habitat occurs in Arizona. Limited information exists to quantify densities of flat-tailed horned lizards; however, estimates have ranged from .06 to 1.5 per acre (Turner et al. 1978, Muth and Fisher 1992, Rorabaugh 1994, Wone and Beauchamp 1995). The lizards within the immediate vicinity of the project sites could be subject to death or injury proportionate to the acreage impacted and the density range indicated above. Lizards could be depleted within roughly 200 feet on each side of a road or other facility in a hypothetical "maximum case" scenario with a high degree of traffic (Rosen and Lowe 1994). The total habitat directly affected by the above aspects of the proposed action, including its interrelated and interdependent effects and indirect effects, in the hypothetical "maximum case" represents less than 1% of available habitat in Arizona. Approximately 1,295 acres reduced in horned lizard density to some degree suggests take of 78 to 1,360 lizards. As vehicle use is much less than that which would create the hypothetical "maximum case" scenario, take figures of two orders of magnitude less are more likely, perhaps in the range of (0.8 to 13.6) 1 to 14 lizards taken annually.

The approximately 16,000 acre (25 mi^2) portion of the 5-mile zone to be managed as part of the Yuma Desert Management Area would protect 11.8% of Arizona's flat-tailed horned lizard habitat to a great degree. The result would be to limit many deleterious uses.

Cumulative Effects: Flat-tailed Horned Lizard

Because much of the flat-tailed horned lizard habitat in the vicinity of the action area is managed by Reclamation, the Department of Defense, or BLM, many of the activities likely to occur in this area will be Federal actions subject to section 7 of the ESA. However, considerable private and State lands supporting flat-tailed horned lizards occur within a few miles or even adjacent to the action area. Continued development of non-Federal lands for residential, industrial, and agricultural purposes is expected. Several square miles of habitat could be lost in the foreseeable future. Pesticide drift from croplands will likely continue. If the flat-tailed horned lizard is subsequently listed, the effects of non-Federal actions, including residential and other development, will be addressed through the section 10(a)(1)(B) permit process. The effects of economic and development expansion will continue in flat-tailed horned lizard habitat in Mexico, particularly on the east end of San Luis, Sonora, as well as in the adjacent United States.

SUMMARY

Listed species/critical habitat:

Bonytail Chub and Razorback Sucker

Projects and actions in the environmental baseline have significantly changed the yearly flows, temperatures, habitat availability and diversity, and fish fauna of the LCR. These harmful effects on the bonytail chub and razorback sucker will be continued during the five year period of the proposed action. Neither significant increases in these pre-existing effects nor new types of effects are considered likely to occur in the five-year period. Similarly, pre-existing harmful

effects to critical habitat constituent elements will be continued.

Reductions in harmful effects in the action area are unlikely. Indeed, cumulative effects of actions by parties other than Reclamation that affect the action area, especially those actions driven by human population growth and economic development, are likely to increase. Population augmentation projects for the bonytail chub and razorback sucker will provide benefits over the short term in preventing extirpation of existing populations.

Southwestern Willow Flycatcher

The environmental baseline encompasses an overwhelming change in the historical availability and extent of native riparian habitat on the LCR, which resulted in a decline in the southwestern willow flycatcher population. Remaining native habitats are a slight remnant of historic potential. Large tracts of cottonwood-willow that have developed after flooding remain threatened by dessication, prolonged inundation, fire, recreation, and development. A catastrophic loss of approximately 465 ha (1,148 ac) of willow habitat at the inflow to Lake Mead is anticipated during the consultation period as a result of Reclamation's operations. Downstream from Lake Mead, declines in native riparian habitat observed during the last 20 years probably will continue. The magnitude of the expected loss is uncertain because fire and saltcedar invasion are the predominant threats. Given the small remaining amount of habitat, however, small losses could be significant. Maintenance of dams, diversions, banklines, and levees will continue to impede the development and maintenance of large, continuous tracts of native riparian habitat on the LCR. The overall effect to the southwestern willow flycatcher will be continued declines in numbers and reproductive success resulting directly from cowbird parasitism, predation, and nest loss, and indirectly from dispersal away from habitat rendered unsuitable by Reclamation's operations.

Yuma Clapper Rail

Adverse effects of the proposed action are relatively minor in terms of anticipated take within the five year consultation period. Positive effects include Reclamation's on-going rail habitat maintenance program and their proposal to avoid rail habitat during their other maintenance activities. Cumulative effects will not be major over the five year consultation period.

Proposed species/proposed critical habitat:

Flat-tailed Horned Lizard

Adverse effects of the proposed action are relatively minor in terms of take and the portion of the species' range affected. No new land disturbance is proposed. Positive effects include Reclamation's proposed management of a large portion of the 5-mile zone as part of the Yuma Desert Management Area, including a host of beneficial actions. Cumulative effects will not be major over the five year period. If the Yuma Desert Management Plan is approved and implemented, the overall effect will be an improved environmental baseline for the species.