WHY WE ARE SURVEYING CURRENTLY

The GCDAMP priorities include the management and experimental actions; mitigation and environmental commitments; and research and monitoring identified in the LTEMP FEIS and ROD, and these will be the highest priorities for the GCDAMP over the term of the LTEMP.

USFWS Biological Opinion for the GCD LTEMP - Conservation Measures:

Task 1 - "Reclamation would partially assist in funding NPS to conduct Yuma Ridgway's rail surveys once every three years for the life of the LTEMP."

Task 2 - "Reclamation would partially assist in funding NPS to conduct southwestern willow flycatcher surveys once every two years throughout the life of the LTEMP."

The protocol requires a surveyor to walk through sites playing recorded SWFL vocalizations every 30 meters to induce a response from willow flycatchers if they are present. It also requires surveys to be conducted within the hours of 0430 – 1030. The USFWS requires that a minimum of one survey be completed during each of the three survey periods (15 May – 31 May, 1 June – 21 June, 22 June – 17 July).

*This is very difficult to accomplish within GRCA, we are considering other methods that could be implemented and still provide meaningful data including using more recording devices and possibly adapting the survey schedule.

GRCA SOUTHWESTERN WILLOW FLYCATCHER (SWFL) SURVEY HISTORY

Surveys for the southwestern willow flycatcher have occurred in Grand Canyon National Park, mainly along the main stem of the Colorado River, since 1982. The river stretch from Lee's Ferry to Phantom Ranch has been surveyed the most consistently since 1982 and best represents potential trend of the southwestern willow flycatcher in Grand Canyon. There has been a noticeable decrease in the detection of breeding pairs since the 1990s along this stretch of river.

The river stretch from Phantom Ranch to Diamond Creek has infrequent habitat patches. Surveys did not occur along this stretch until the 1990's and have produced minimal detections.

The previous studies along the Diamond Creek – Pearce Ferry river stretch have varied considerably. The water level in Lake Mead over the past 20 years has drastically changed the riparian vegetation along this stretch of river, thus negatively affecting southwestern willow flycatcher breeding habitat.

The number of nesting willow flycatchers has declined since the 1980's and nesting flycatchers have not been confirmed in Grand Canyon National Park since 2007, although formal nest searches have not been conducted above Diamond Creek since 2004. The limited data regarding willow flycatcher numbers prior to the construction of the Glen Canyon Dam suggest that they were not common breeders along the Colorado River in Grand Canyon.

- Studies conducted along the river from 1982-1991 and from 1992-2001, detected 14-15 breeding pairs per decade of surveys between Lee's Ferry and Phantom Ranch
- After the 2004 survey season, GCMRC elected to discontinue their monitoring

- Beginning in 2005, GRCA began conducting annual surveys in the upper canyon from Lee's Ferry to Phantom Ranch only.
- From 2005 to 2009, four individuals were detected between Lee's Ferry and Phantom Ranch.

2010-12 GRCA survey effort (numbered goals of this time periods efforts)

1. Refine potential SWFL habitat between river miles 0 and 277 in Grand Canyon National Park and provide a habitat evaluation for each site.

2. Conduct presence/absence surveys for SWFL using the U.S. Fish and Wildlife Service three-survey protocol of 2010 in dense riparian habitat between river miles 0 and 277.

3. Establish acoustical monitoring equipment at 6-8 of the best sites and record acoustical data for ≥ 35 days.

4. If territorial flycatchers are located, conduct nest searches and, where possible, document predation, brood parasitism, and nesting success.

5. Collect habitat and physical measurements around each nest site.

Results (2010-12 surveys)

- Detected 10 willow flycatchers at 7 different sites. All detections were single occurrence and no nests searches were conducted.
- 6 detections occurred during the first survey period (May 15-31)
- 2 occurred during the second survey period (June1-21)
- 2 occurred during the third survey period (June 24-July 17)
- One detection was made via the analysis of the sound recording device (We supplemented search effort by placing sound recording equipment at 10 different sites which recorded 3,194 hours of audio data. A total of 10 positive audio detections were recorded on a sound recording device at one site.)
- All SWFL detections occurred on single occasions and birds were never detected again in subsequent surveys.

Forty-six sites were assessed for willow flycatcher breeding habitat. Ten sites were designated as suitable habitat, 20 were designated as potential habitat, and 16 were designated as unsuitable habitat. Patch size ranged from 0.05-18.22 ha and averaged 1.5 ha.

2016 surveys - Grand Canyon National Park conducted surveys at Cardenas Marsh resulting in no Southwestern Willow Flycatcher detections.

2019 surveys – We conducted presence/absence surveys for southwestern willow flycatchers using the U.S. Fish and Wildlife Service 3-survey protocol at 14 sites along the Colorado River. Surveys in 2019 were conducted within Grand Canyon National Park between 15 May – 1 June, 8 June – 19 June, and 1 July – 11 July. No SWFLs were detected.

*One of the best habitats for the SWFL unfortunately was destroyed during a summer 2018 human caused fire (see Figure 1 for reference and Figure 2).

SWFL CONCLUSIONS

The overall downward trend in both adult non-residents and breeding pairs in Grand Canyon can likely be attributed to several factors including the fluctuating and unstable hydrological conditions and the increased distribution of the tamarisk leaf beetle. Our study reinforces previous convictions that Grand Canyon does not provide extensive stands of dense riparian habitat suited for breeding willow flycatchers. The majority of habitat patches lack a consistent, dependable source of water for maintaining moist/saturated soil conditions and/or slow-moving water/ standing surface water. Unless current hydrological conditions change, the majority of flycatcher habitat in Grand Canyon will remain marginal or continue to decline, especially with the recent arrival of the tamarisk leaf beetle.

The surveys over the past 31 years have established that between Lee's Ferry and Diamond Creek, the southwestern willow flycatcher exists as a very small, widely dispersed population that currently is not likely self-sustaining. Territorial adults and nesting attempts have been confined to a small number of sites, which are now experiencing inevitable and detrimental change to key habitat components. The presence of southwestern willow flycatchers in Grand Canyon will likely be at a reduced rate from previous decades. However, Grand Canyon will continue to provide essential habitat for migrating willow flycatchers, but the presence of breeding willow flycatchers will be less common.

RIDGWAY'S RAIL (RIRA)

There has been little to no surveys for this species within Grand Canyon National Park. GRCA was in a study area that included the Lake Mead Delta, therefore it is unclear as to whether or not any of the following records were actually within the boundaries of Grand Canyon National Park. Exact locations have not been provided to NPS. The actual location of the Lake Mead Delta is not clear.

1) Below Spencer Canyon (exact location unknown), present May 26- June 30 1996; breeding was confirmed.
2) Below Spencer Canyon (exact location unknown), present from May14 – June 17 1997; Unknown if breeding

Two complete surveys done on April 3 and 17, 2019 at RM275R (Figure 2). Detected Virginia Rail (VIRA), Sora (SORA), and Least Bittern (LEBI) during the first survey and only VIRA on second survey. *the commercial helicopter overflights made it challenging to hear the marsh birds.

Yellow-billed Cuckoo (YBCU)

The YBCU is not a part of the LTEMP Biological Opinion, but it is listed as threatened by USFWS and may occur in similar habitats that we survey for SWFLs. In 2019 audio recorders were placed within Burnt Springs Canyon (Figure 3) in June for approximately 4 weeks, the data has not been analyzed yet to determine if we detected any.

Figure 1. Examples of the canopy density at Burnt Springs, Grand Canyon National Park. The willows that burned at RM275R were similar in structure and density as these.

Figure 2. Google Earth imagery of RM275R in summer 2017 (pre-fire). Note the presence of a lot of green vegetation (mature willows and tamarisk) and that the oval shaped area surrounded by the green vegetation is the marsh that is surveyed for Ridgway's Rail. The marsh is comprised of cattails and is entirely inundated with water year-round due to construction of dams/berms on the west side (river side/downslope) that hold the water back.

Figure 3. Aerial view of Burnt Springs (river mile 259.8R), Grand Canyon National Park.