

## Goal 8. Southwest Willow Flycatcher Management Objectives

I am interested in the concept, but coming up with scientifically-based, defensible answers for the Southwestern Willow Flycatcher (SWWF) may be quite difficult. The main problem lies with determining what constitutes a viable population... something that we really don't have a good handle on pretty much anywhere in the species' range. There is no clear pattern that larger breeding groups are necessarily more productive than a series of small breeding groups -there is just too much demographic stochasticity among sites. About the only thing we can say is that small populations have a higher likelihood of extirpation, but even this is defied by a pretty fair number of small sites. This is probably because recent data show that SWWFs really fit a metapopulation model, where a fair number of individuals are exchanged among sites, local extirpations and colonizations occur, etc.. So, trying to answer the question of persistence and viability of a fairly isolated component (i.e., the Grand Canyon) of the overall population is not straightforward.

Once a "viable population size" is determined, you then have to tackle the question of how much habitat that population would require. The SWWF recovery team recently went through an interesting exercise in trying to develop a relationship between SWWF breeding group size and habitat patch size... there was none! SWWF breeding groups vary tremendously in their density (# pairs per ha) in patterns that we can not yet discern. So, if you determine that you want habitat for X pairs, the best you can probably do is to say that you need from Y - Z amount of habitat (and that range may be very great).

The next questions on fledging success and brood parasitism levels for "sustainability" are also annoyingly complex. In the upper part of the canyon, we have copious data and the SWWF "population" is pretty clearly a sink, at least over the last 8-10 years. It is so small that it could wink out of existence any year. On the other hand, there is a somewhat larger (but still small) SWWF population, and abundant habitat, far downstream, but we know very little about these birds in terms of nesting success, parasitism, etc. Rangelwide data show that there is often large annual and spatial variability in adult and nestling survivorship, adult and natal site fidelity, nest success, and nest predation and parasitism; all of these interact to determine viability.

Given all of these complexities and uncertainties, I am not sure that one can develop "iron-clad", undisputable answers to your questions. However, it is possible to use a combination of supporting data and "best scientific judgement" to generate some values. In all honesty, though, these values may not be tremendously precise nor hold up under "pressure"... alternative answers could be just as defensible.

Mark Sogge 11/08/00

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I also wanted to call to you attention that last week there was a SWIFL conference where about 45 papers were presented and several deal with cowbirds, habitat, fledgling success. There is a web page which has the abstracts you may be interested in. I have

hard copies if you need them please call me at 801 524 3637, I am so far behind on my e-mail. I think the site is still active, if not contact Mark Sogite at the USGS.

Also, you are probably aware of the SWWF recovery planning process and the issues papers which will soon lead to a recovery plan for the birds. I would recommend you coordinate the numbers etc. that your producing with these folks so we don't end up with contradictory findings. To have access to the recovery planning web site where you can get the issue papers, etc. you have to join a list serve by first e-mailing or calling Stewart Leon (Pinetop FWS) and having his office authorize you to access it. Stewart's phone number is 505 248 6657. Perhaps you are already a member.

Chris Karas 10/30/00

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**Goal 8** involves management of southwestern willow flycatcher (SWWF). The AMWG has allowed the extirpation of breeding SWWF from its designated critical habitat in lower Marble and upper Grand canyons, contrary to its stated goal. The following management objectives should be considered:

- (1) Monitoring of habitat and population trends should be continued all the way to the Park boundary on Lake Mead, and coordinated with monitoring activities downstream from that point.
- (2) Monitoring should be improved to make sure that nesting success is well documented (during the past several years of monitoring, the fate of nesting SWWF has been unclear).
- (3) Cowbirds destroy a large proportion of SWWF (as well as all other Neotropical songbird) nests. Given Goals 8 and 9, it is therefore appropriate to initiate a comprehensive cowbird control program in the segment of the river corridor designated as critical habitat for SWWF.
- (4) Native habitat enhancement is also warranted.
- (5) The recommendations of the Biological FBP should be followed.

Larry Stevens 11/18/00

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ten years ago I recommended blowing out all the stops to preserve the will population we still had above Diamond Creek. this would have involved an immediate, substantial effort centered primarily around cowbird control. my recommendation was soundly rejected by NPS and my reputation was trashed for being honest about how things were. now that population is essentially gone and there is no guarantee it will ever be restored, regardless of how much \$\$\$ is poured down the rathole. big-picture problems such as wintering ground uncertainties, etc., may preclude recovery above Diamond Creek. In spite of the fact that setting no tangible, quantitative population goals for wills there

could result in a loss of funds to monitor or work with them there, I cannot in good conscience make a realistic quantitative population goal for wifls above RM225. However, we should pay strong attention to the extent and quality of potential wifl habitat remaining above 225 in the event that natural recolonization may occur when the overall wifl situation (may) improve in 20 years.

Below Diamond Creek at the head of Lake Mead, we are dealing with a system in dynamic flux -- wifl habitat is periodically inundated to the extent that it no longer serves any purpose to the species, then water levels drop and habitat again develops. Any quantitative population goal for the head of Lake Mead would be no more than wild speculation because the nature of the vegetation re-establishing itself there after each 10 or 20-year inundation cycle would not necessarily be useful to wifls.

In summary, I do not have much faith in our ability to either identify or substantiate wifl population goals (quantitative or otherwise) from Glen Canyon Dam to the head of Lake Mead over the long term. Monitoring for their critical habitat and even their presence/absence could occur during, say, overall long-term bird and habitat monitoring. Unless some form of cooperative agreement can be reached for the manipulation of water levels at Lake Mead to benefit wifls, this discussion cannot be truly productive.

The Grand Canyon region has never supported, and does not now support, a wifl population of the size to substantially assist in recovery. Meaningful recovery dollars and efforts should probably (and sadly....) be directed elsewhere.

While cowbird parasitism is now seen as only a minor, even negligible, rangewide threat to wifls, cowbird parasitism can and has led to the extirpation of local, small populations. It seems likely that this was the cause of the demise of the GRCA population, although this is not a rock-solid fact. And investing huge amounts of \$\$\$ to pull wifls in GRCA from the extirpation vortex it is in above Diamond Creek by fighting cowbirds is not economically or ecologically efficient, I am afraid.

Perhaps these thoughts are of use to your process.

Bryan Brown, 11/20/00  
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