

CITY OF TUCSON
HABITAT CONSERVATION PLAN
Technical Advisory Committee Meeting
April 11, 2005 8:00 – 11:00 pm
Arizona Game and Fish Department conference room
555 N. Greasewood Rd.

Attendees: Rich Glinski, Guy McPherson, Ann Phillips, Dennis Abbate, Linwood Smith, Cathy Blasch (Arizona Game and Fish Department), Michael Wyneken (City of Tucson – Planning), Clint Chiavarini (City of Tucson – Planning), Eric Anderson (City of Tucson – Planning), Leslie Liberti (SWCA), Ken Kingsley (SWCA), Lori Lustig (SAHBA)

1. Update on Recent SAC Meetings/Upcoming Meetings

Leslie presented a tentative timeline for SAC and TAC meeting topics over the next several months. The timeline is:

TAC meetings

- April: develop biological goals for species in Southlands
- May: presentation from Arizona State Land Department; begin conservation strategies for Southlands
- June: continue work on conservation strategies for Southlands
- July: develop biological goals and covered activities descriptions for Avra Valley
- August: develop conservation strategies for Avra Valley
- September: develop biological goals, covered activities descriptions, and recommendations for Santa Cruz River
- October: adaptive management and monitoring

SAC meetings

- May: discuss specific information for Southlands, such as land ownership, habitat models, biodiversity areas, riparian, washes, etc.
- June: present results of May TAC meeting; presentation on Pima County's species-specific mitigation measures for Pima pineapple cactus and other species
- July: present Southlands recommendations from TAC
- August: implementation and funding recommendations
- September: present Avra Valley recommendations from TAC
- October: present Santa Cruz River recommendations from TAC
- November: present adaptive management and monitoring recommendations from TAC

Leslie suggested that the June meeting would be a good time to have a joint meeting between the TAC and SAC. Hopefully by his time, there would be at least initial conservation recommendations for the Southlands that could be reported to the SAC, so this would be a good time for the two groups to get to know each other. Leslie expressed a desire to have a representative of the Pima County HCP process talk to the combined group about the species-specific mitigation strategies being developed for that HCP, in particular, those for the burrowing owl, pygmy-owl, Pima pineapple cactus, needle-spined pineapple cactus, Tucson shovel-nosed snake, and ground snake.

Leslie pointed out that the grant period ends June 30, 2005. The City has requested an extension to the grant to be able to continue work on the draft HCP for several months

more. There is no guarantee that the extension will be approved, although it is highly likely that it will be approved. The City is also preparing a grant application for a second year of funding. Rich asked who approves the extension requests. Cathy replied that Arizona Game and Fish Department must approve the request initially, but then must send it to the Regional USFWS office for final approval. Leslie said that the new grant applications are due to USFWS by May 24, 2005. Michael noted that the City got confirmation that their first grant request was funded in July of the year the application was submitted.

2. Habitat Models Updates/Maps

- Pima pineapple cactus

Copies of the final PPC potential habitat map were handed out. Leslie explained that the final model included all areas in the Southlands except those mapped as riparian. At a previous TAC meeting there was some discussion over whether the Harris riparian layer or the SDCP composite vegetation layer should be used to identify riparian areas. Mima and Leslie went out to the Southlands to look at areas that were included in the Harris map, but did not appear as riparian in the SDCP composite vegetation map. At the time, Mima felt that most of these areas could be included as riparian habitat. There were some portions of the Harris layer that still had potential for the PPC, but there were also other areas that were not mapped as riparian but could be excluded because of severe damage from off-road vehicles and other activities. Mima wanted to look at the orthophotos in detail to determine which Harris riparian areas to pull back into the potential habitat map and which additional areas should be excluded. After considering the situation further, Mima decided that the Harris riparian layer was close enough for the purposes of identifying the amount of potential PPC habitat in the Southlands.

Leslie added that Marc Baker had received Section 6 money to conduct PPC transects over a large area. Many of the transects that he had intended to do were not possible because private landowners would not give permission for him to access their lands. As a result, Marc had funding to do another 27 transects and Mima thought that it would be most effective to run those transects through the Southlands area. The results of these surveys would either would or would not support the approach that was taken to model habitat for the PPC in the Southlands. To help make the most use of Marc's data, Mima was going to ask him to make sure that some of the transects ran through areas that were currently being excluded from the habitat model because they were identified as riparian areas.

Rich asked about Marc's affiliation. Ken responded that Marc was an independent consultant working out of the Prescott area, with many years' experience in conducting surveys for special status plants and considerable expertise in the biology of the PPC.

- Burrowing owl

Final maps for BUOW potential habitat were also available and handed out to the TAC. Leslie explained that the entire Santa Cruz River corridor was mapped as potential habitat because Dr. Conway and other researchers had identified it as one of the most important areas for this species in the Tucson region. In addition, most of the known burrowing owl nests and dispersal locations in the region were found in along the Santa

Cruz River, both main and west branches. All of the Avra Valley parcels were also included as potential habitat, with the caveat that no birds had been documented breeding or dispersing through this area and there had been no assessment of the availability of suitable burrows for this species on the Avra Valley holdings.

Leslie said that, now that the habitat models were completed, final acreage calculations were available for each species. Additional information had also been gathered since the species accounts were distributed to the TAC that could be important in the consideration of conservation strategies for the target species. Leslie did not want to reprint the species accounts – some of which are fairly long – each time there was a small revision. To save paper, revised information would be handed out as “inserts” for the species accounts. Each insert would indicate the species account page and section being revised, and text being changed, deleted, or added. If there were several inserts for any given account, a revised full draft with all changes would be provided to the TAC. If this approach did not work well for the group, another approach could be devised to get updated information to them. Rich asked that each new species account draft have the date so TAC members could tell the drafts apart.

The inserts handed out to the TAC included: descriptions of how habitat was modeled for the Pima pineapple cactus, the Tucson shovel-nosed snake, and the burrowing owl; habitat acreages for all species; locations of burrowing owl artificial burrows, number of burrows, and number of owls released; and additional management recommendations for the burrowing owl.

3. Stressors and Threats for Southlands Species

- Pygmy-owl

The TAC generated a partial set of stressors and threats for the pygmy-owl. The discussion under each stressor category is provided below.

Habitat Loss

Linwood noted that available breeding habitat is a major concern for the pygmy-owl. Leslie asked Dennis to provide his insight into the threat to various habitat types for this species. Dennis wanted to know in what context the TAC was considering the stressors and threats. Leslie replied that it would be useful to start out with the broadest consideration and then the discussion could focus in on those threats that are relevant to the City of Tucson planning areas.

Dennis said that employees of the Game and Fish Department had been out the previous weekend tracking a female just south of Three Points. She moved about 25 miles during a week and a half period. The owl was hatched south of the Sierrita Mountains and last year dispersed south towards Arivaca and then came back up to within a mile of the hatch site. Ken asked if there were any data on what constitutes a barrier for dispersal for pygmy-owls. Dennis said that they are getting information that the owl can move through a surprisingly wide range of habitats. The only things that they are pretty sure the owl will not disperse through are high density residential (greater than one residence per acre), across an interstate highway, and any large open areas without potential perches. Ann asked how wide is “wide”. Dennis replied that Game and Fish is working with Arizona Department of Transportation to answer that question. They have

documented a few times where owls have flown 100 meters or more, but the typical distance “hop to hop” is 25 to 50 meters. Ken asked if they fly across wide washes, such as the Santa Cruz River. Dennis said that they have never seen an owl along the Santa Cruz. Ken asked whether owls had been documented crossing the Brawley Wash near Arivaca. Dennis replied that they have never seen an owl crossing a wash.

Ann asked how far off the ground that birds fly. Dennis said that they usually don't fly more than a few feet above the ground. Ann wanted to know if this precluded them crossing roads. Dennis said that it depends on how busy the road is. Ken asked whether the owl would cross wide-open creosote flats. Dennis responded that there have been few direct observations, but there have been times when they knew an owl was in one spot one day and another location the next, and in between was nothing but creosote flat. Ken asked if owls could cross the C.A.P. canal. Dennis said that there was no evidence. Ann asked whether the birds were strong flyers and whether they could get across fences. Dennis felt that the bird was a good enough flyer that fences were not a problem. Rich noted that dispersal habitat is very important.

Leslie asked whether the bigger issue was the amount of dispersal habitat available or barriers to movement within dispersal areas. Dennis said that barriers are a significant issue, particularly roads and developed or cleared areas. He added that there were two important components in suitable dispersal habitat: (1) perches to allow for physical movement through the area and (2) escape cover from predators. Dennis also noted that dispersal habitat is equally as important as breeding habitat.

Ann asked if the owls ever use culverts. Dennis didn't think so, but he said that Aaron Flesch had made an observation, although it might have been presumed rather than direct, of an owl crossing through a culvert. Ken noted that if the birds do move through culverts, structures could be put inside of them to serve as perches, particularly under large overpasses. Dennis felt that it was still overly optimistic to expect owls to use culverts, even with perches. Rich was also concerned about encouraging owls to move through underpasses where cars were traveling. Ken clarified that this would be better used in water or train underpasses.

Leslie asked about the areas used as foraging habitat. Dennis replied that they are the same as the areas generally used by the species, although they forage less in open dispersal habitat areas. The owl employs a sit and wait approach when hunting. Leslie asked about the differences between breeding and wintering habitat. According to Dennis, females disperse through areas of dense vegetation but few saguaros or potential cavities. He added that dispersal habitat is more important to females than males since males tend to establish a territory and occupy that same area year-round, and females tend to move from their natal area to find a mate. Leslie also asked about temporal changes in habitat use. Dennis thought that the owls were likely to use more shaded areas during the day.

Dennis commented on fire as a threat to this species. He said that it is used as a management tool in the Altar Valley as part of ranching practices, and on Buenos Aires National Wildlife Refuge to manage for other species, such as masked bobwhite quail. He was most concerned about the use of fire near the foothills where vegetation transitions from grasslands or other open habitats to areas where there are more ironwoods and other trees. Rich noted that this leads to the conversion of these areas to scrub habitat without saguaros. Dennis added that once these areas are impacted by

fire, the trees and saguaros don't come back without extensive restoration effort. Rich and Linwood both agreed that once these transition areas are burned, the original vegetation community is gone. Guy commented that there was an important distinction between semi-desert grassland and upland sonoran desert. He said that fire is a natural part of the semi-desert grasslands, but it did not historically occur within upland sonoran desert areas, where it is a threat to saguaros.

Linwood asked if there was any evidence of pygmy-owls breeding in anything other than saguaros. Dennis said that of 50 documented recent nests, only two were in trees; one in a eucalyptus at the south end of Altar Valley and the other in an ash. Linwood asked if these two nests were in natural cavities and Dennis replied that they were.

Rich emphasized the importance of foraging habitat. Dennis noted that food sources change throughout the year and prey availability is more critical in winter when the owl can't rely on lizards and snakes for food.

At this point there was some discussion over the best approach to identifying the set of relevant threats and stressors for each species. Ann wanted to make sure that the information from the stressors/threats matrix it was incorporated into the species accounts. Leslie said that this was the intention. Ken added that the hope was that the species experts would make edits and incorporate any additional relevant information to these accounts. Ann suggested that it might be more efficient to have species experts fill out the matrix and then bring it to the TAC for review. Rich noted that one of the most critical elements in the HCP is this matrix, and he felt that it should be developed through discussion among the full TAC. Guy added that he liked this approach of working through the matrix with the TAC as a group. Leslie asked if the TAC wanted to continue with the discussion of stressor and threats as a group. The consensus was that they did want to continue.

Habitat Alteration

Dennis said that there was no information on prey availability. Ken asked if there was information on the types of prey used during different seasons of the year and the percentage of the bird's diet that different prey types comprise. Dennis said that they did have videotape of nestlings and could see some of what they ate. Ken asked if there was any information on what owls are foraging on outside of the breeding season. Rich noted that the owls had a fairly broad diet. They tend to focus on small birds during the winter with increasing consumption of mammals during the spring and fall. Ken asked if there was any observed association between wintering owl locations and the locations where prey bird species winter or forage in flocks. Dennis said that there was no information, but this was a possibility. Leslie asked if pesticides were a concern since the owls feed on small prey. Dennis thought that this was less of a concern than for burrowing owls. His sense was that it was not a significant issue. Ken asked if there was any evidence of pygmy-owls foraging along agricultural field edges. Dennis said that there was not.

Leslie noted that availability of suitable nest sites seemed to be one of the most critical issues. Dennis said that this was absolutely the case. Leslie asked if there were areas that were suitable except for a lack of nest sites. Dennis replied that there were, which suggests that the species that create the cavities are not in those areas. Leslie said that it was clear from the literature that lack of suitable nests sites was an issue in

grasslands, but what about in upland habitat. Dennis did not think it was a big of an issue in uplands. He added that Altar Valley poses an interesting question. One suggestion has been to bring in saguaros, but that begs the question of how much human alteration to a system is acceptable. He noted that valley floors are almost devoid of saguaros. Ken asked if anyone had tried to quantify the number of cavities in this area. Dennis said that no one had done this. Ken suggested that lack of water might be limiting woodpeckers and noted that the variability in cavity density between areas is enormous. Dennis suggested that a literature search or discussion with woodpecker experts could provide some answers to this question. Rich wanted to know who wanted to put saguaros in Altar Valley. Dennis replied that Game and Fish and University of Arizona researchers had suggested it. Rich noted that saguaros would not survive in the valley bottoms because of inappropriate soils and the fact that winter temperatures were too low. Ken asked if there was some alternative to using saguaros.

Leslie asked if cavity availability was as significant of an issue in wintering habitat. Dennis replied that the limited data suggest that females are using areas without saguaros for wintering habitat. Ken asked if males use cavities during the winter. Dennis said that there is some evidence that they are using them for shelter.

Leslie asked Dennis whether habitat conversion is a particular concern. Dennis said that Game and Fish has a lot of data in the process of analysis and interpretation, and Mike Ingraldi might have a better idea on this topic. Rich noted that roads create upstream and downstream impacts on vegetation. Leslie replied that in the Southlands, the upstream impact is an increase in vegetation density and size of riparian vegetation, resulting from slowing the flow of water. This may have the effect of improving breeding or overwintering habitat for pygmy-owls. Rich mentioned the debate over whether low-density, large lot development is preferable to high-density cluster development. Dennis was concerned that birds already established in areas where development occurs may become habituated to the disturbance, but it might preclude new birds from occupying the area. Leslie asked if availability of escape cover was adequately covered under the 'loss of habitat' category. Dennis thought it was.

Of all the water-related issues, Dennis felt that water availability was the biggest concern to some people. He said that one theory is that the owls are drawn to the presence of artificial water, but in reality, the birds nest both where there is and is not an available water source in close proximity . He noted that pygmy-owls get most of their water from prey. Linwood asked if there was any evidence of birds drinking. Dennis replied that there was little evidence of this. Guy suggested that water might be important for the bird's prey species however. Ken added that available water might provide enhanced hunting areas. Dennis did not think that water was necessary to provide sufficient hunting opportunities.

Leslie asked about the impact of edge effects. Rich said that pygmy-owls can occur in entirely homogeneous environments. Ken said that the species was historically found along rivers. According to Rich, Aaron Flesch found that, in Mexico, no ecotone is preferred by the owls. Dennis does not believe the theory that pygmy-owls prefer riparian areas. He pointed out that riparian areas, while they do have a lot of prey, also have a lot more predators. Rich thought that the invasion of salt cedar might have impaired the use of riparian areas by this species. Ken said that this does not apply to the San Pedro, where an owl has historically been found in an area with fairly dense salt cedars.

Leslie indicated that, based on the discussion, patchiness does not seem to be an issue. She asked if there was any aspect of past land use that was a concern. Dennis replied that there is some concern over grazing impacts, especially to riparian areas. He explained that pygmy-owls are not found in areas that are currently grazed or that have a grazing history, but there really isn't any historical data on this. Ken noted that a history of protection does not seem to be relevant either; the owls, for example, are not found in Saguaro National Park. Guy suggested that grazing may have a beneficial effect in that it can reduce the threat of fire.

Leslie asked about the potential to rehabilitate disturbed or degraded pygmy-owl habitat. Rich thought that it was possible and suggested planting trees along farm edges to improve dispersal opportunities. Dennis added that rehabilitation of habitat is possible on a small scale, but it is most relevant to maintaining dispersal corridors, for example revegetating near roads.

Ken asked if there was any evidence that pygmy-owls used transplanted trees. Rich noted that revegetation is prescribed as a way to facilitate movement, but no one has really studied the outcome. Dennis pointed out that the owls do use transplanted trees in Altar Valley and other areas that historically had fewer trees. The owl nesting in a eucalyptus in Altar Valley is evidence that the species can use transplanted trees.

Dennis said that low population size is a major concern. With respect to genetic variability, inbreeding has been documented on 5 occasions in northwest Tucson. He did not know what the implications were of this inbreeding, but there is a possibility that it is connected to urban versus suburban populations. There is no evidence of inbreeding in outlying areas.

Leslie asked the TAC how they wanted to proceed with the rest of the stressors and threats discussion. Working with the entire group seemed beneficial, but it was also fairly time-consuming. Ann had suggested convening subcommittees to look at each species in detail. The TAC agreed that this would be an effective approach. Leslie then asked for recommendation on persons to include in each subcommittee. The TAC recommendations were:

Pygmy-owl: Scott Richardson, Dennis Abbate, Mike Ingraldi, Aaron Flesch (perspective on Mexico situation), and Glen Proudfoot.

Burrowing owl: Mike Ingraldi and other Game and Fish researchers, Courtney Conway, and anyone else recommended by either Mike or Courtney.

Cacti: Mima Falk, Marc Baker, and anyone else recommended by Mima (possibly Bob Schmalzel or the "cactus cop").

Snakes: Phil Rosen, Cecil Schwalbe, and Trevor Hare.

Pale Townsend's big-eared bat: Tim Snow, Ronnie Sidner, and Linwood Smith.

Yellow-billed cuckoo: Brian Wooldridge and Troy Corman. Ann will also look into whether there are other experts that can be included.

4. Call to the public

There were no comments or questions from the public at the meeting.

5. Next steps/Future meetings

The next TAC meetings are scheduled for May 3 and May 24, both from 1-4pm, at the Game and Fish offices. A third tentative meeting has been scheduled May 27, 8-11am, at the Game and Fish offices. The meeting on the 27th will only be held if it is not possible to get through the threats and stressors discussion between the meetings on the 3rd and 24th of May.

Dates were also solicited for the joint meeting proposed in June. The TAC provided dates that would not work for the meeting, including the week of the 6-10th, the morning of the 17th, and the afternoon of the 23rd.