

**City of Tucson
Habitat Conservation Plan
Technical Advisory Committee Meeting
May 27, 2005 8:00 – 11:00am
Arizona Game and Fish Department Conference Room
555 N. Greasewood Road**

Meeting Summary

Attendees: Rich Glinski, Marit Alanen (alternate for USFWS), Ann Philips, Guy McPherson, Michael Wyneken (City of Tucson – Planning), Leslie Liberti (SWCA), Ken Kingsley (SWCA), Ken Kertell (SWCA), Jessica Lee (SWCA)

1) Update on Recent SAC Meetings/Upcoming Meetings

a. *Scheduled SAC Meetings:*

- **May 26**, 3-5pm @ AGFD. Detailed information on Avra Valley and Santa Cruz River planning areas.
- **June 22**, 1-4pm @ AGFD. Joint Meeting with TAC. Tentative Topics: (1) Introductions, (2) Biological stressors and threats, (3) Initial conservation strategy thoughts, (4) Presentation on Pima County's species-specific mitigation strategies.
- **July 13**, 3-5 pm, @ AGFD. Tentative Topics: Conservation measures for Southlands species and implementation options.
- **July 27**, 3-5 pm, @ AGFD. Tentative Topics: see previous meeting.
- **August 17**, 3-5 pm, @ AGFD. Tentative Topics: Conservation measures for Avra Valley species and implementation options.
- **August 31**, 3-5 pm, @ AGFD. Tentative Topics: Conservation measures for Santa Cruz River species and implementation options.

b. *Scheduled TAC Meetings:*

- **June 7**, 1-4 pm @ **USFWS**. Tentative Topics: Biological goals, objectives, and initial conservation measures for Southlands species.
- **June 22**, 1-4pm @ AGFD. Joint Meeting with TAC. See above.
- **July 12**, 1-4 pm, @ AGFD. Tentative Topics: Conservation measures for Southlands species.
- **July 26**, 1-4 pm, @ AGFD. Tentative Topics: Biological goals, objectives, and initial conservation measures for Avra Valley species.
- **August 9**, 1-4 pm, @ **USFWS**. Tentative Topics: see previous meeting.
- **August 23**, 1-4 pm, @ AGFD. Tentative Topics: Biological goals, objectives, and conservation measures for Santa Cruz River species.

Leslie explained that the SAC is currently reviewing City land use plans, ordinances, and other background information related to the planning area so that, when recommendations from the TAC on conservation strategies are forwarded to the SAC, they are ready to begin identifying implementation and funding options.

Leslie noted that the joint meeting on June 22 will involve two presentations: one by Julia Fonseca (Pima County Flood Control District) on species-specific mitigation measures being developed for the Pima County HCP and the other from Ann Philips regarding dryland restoration approaches. Leslie said that Ann's presentation gives an alternative perspective to that of the U.S. Army Corp of Engineers. Most people automatically think of the Corps' Santa Cruz River restoration projects when they hear the word "restoration." Ann's presentation will show that there are alternatives that don't have to be as money, time and effort intensive.

2) Old Business

a. Meeting Minutes – Discussion and Approval of May 3, 2005 Minutes

The group decided to move the decision and approval of the meeting minutes to the next meeting because several TAC members were not present.

b. Action Items from Previous Meeting

There were no action items from the previous meeting (May 24).

c. Topics Held Over from Previous Meeting

There were no topics held over from the previous meeting.

2) New Business

a. Report from Species Subcommittees

- **Pima Pineapple Cactus (PPC) and Needle-Spined Pineapple Cactus (NSPC)**

It had been difficult to find a time for the cacti subcommittee meeting due the tight schedules of people who were critical to the discussion. A short-notice meeting was held on May 17, with Mima, Marit, Leslie, Marc Baker, and one of Marc's students in attendance. The stressors and threats discussion for the PPC was very productive. Marc suggested during this meeting that it was possible to further refine the potential habitat model for this species to reflect areas with high cactus density and areas where densities are much lower. When Marc did his survey work in the Southlands, he had 5-6 transects around the Pima County Fairgrounds with no PPC detections. Marc felt that there are very low cactus densities in that area. Leslie said that Mark suggested refining the habitat model to differentiate between these high and low densities areas. After the model is refine, Marc proposed doing more survey transects to field test the model. Leslie was unsure when Mark would be able to go out and do those surveys.

Leslie said that when the group moved on to discuss the needle-spined pineapple cactus, the issue was raised of whether or not the cactus actually occurs in the planning area. Marc suggested that there might not be any suitable habitat in the planning area. The potential habitat model that the City is using for this species is the one developed by Pima County for the Sonoran Desert Conservation Plan, which only shows a small amount of moderate potential habitat for this species in the extreme northeast and

southeast corners of the Southlands. Mark suggested going out and looking for this species at the same time as the additional PPC transects. Mima said that she is open to the fact that there might not be potential habitat in the planning area. Leslie said that the group decided to not go through the matrix at that time and rather leave it until after Marc has had a chance to look for the species within the planning area.

Ann asked if there was any chance PPC had been poached in those areas near the Pima County Fairgrounds or if the apparent low density of PPC was really due to habitat characteristics. Ken Kertell replied that poaching does happen, but it usually happens when people hop fences near housing developments to get cacti for their yards. Leslie noted that Mima is going to present the cacti summary at the June 7 meeting, so TAC has a chance to discuss this information prior to the joint June 22 meeting.

- **Ground snake, Tucson Shovel-nose Snake and Pygmy-owl**

Leslie handed out draft biological goals and objectives for the ground snake, Tucson shovel-nose snake, and pygmy-owl, and the stressor/threats matrix for the ground snake.

- **Yellow-billed cuckoo (YBC)**

Leslie handed out the subcommittee meeting summary and stressor/threats matrix for the yellow-billed cuckoo. The attendees at this meeting were Troy Corman (AGFD), Brian Wooldridge (USFWS), Ann, Ken Kingsley and Leslie.

Ann described the YBC habitat as the floodway, including the Santa Cruz River and reaches of Brawley Wash. She said that the YBC is not breeding in any City areas, but is migrating through the area. She said that the presence of overstory/mid-story vegetation with high humidity is preferable for breeding habitat; the higher humidity is important for egg survival. YBC primarily eats insects, but sometimes forages on fruit, and locally the Mexican elderberry has been documented as a food source. She said the breeding cycle is only 17 days and a young bird can be fully feathered within two hours of hatching. The YBC may lay more eggs if there is a burst of insects; in the east, this can lead to nest parasitism by the cuckoo. The YBC are hard to locate because they are very quiet and hang out in the mid-story vegetation during the day. She said that they are fast eaters and can eat 15 moths a minute. Ann mentioned a Sage Landscape survey that found five individuals in August 2002; two along the Santa Cruz River and three along Tanque Verde Creek.

The YBC populations are declining in the western U.S. and have been extirpated from Nevada, Washington and Oregon. There is scientific debate on whether the YBC populations in the West are a separate population from the eastern birds. Ann said that one study said they are not separate, but follow up study is showing evidence of there being distinct differences.

Ann noted that the YBC could be disturbed in breeding season by noise. She said that the Tucson Water recharge basins with vegetation around them might be good habitat, although the Tucson Water machinery could disturb them. Ann pointed out that the Gilbert recharge basins could serve as a model for the City on combining recharge with

habitat enhancement, and Leslie is organizing a tour to the Gilbert basins. Ann added that the City is receptive to combining habitat with the recharge basins.

She noted that the width of the riparian areas is important, and the cuckoos may not prefer the narrow strips of riparian habitat in the Tucson area. She said the lower Santa Cruz River may never be ideal for breeding, but could be a good stopping over point for migrating birds. She said that they are not threatened by power lines, except for the potential collision hazard, and there have been documented cases of being killed by cars on bridges. The cuckoos migrate during the night, then during sit and forage throughout the day. Ann stressed that not a lot is known about the species. No one knows for sure what density of vegetation the YBC prefer. Ann noted that patches of cottonwood/willow vegetation connected by mesquite bosque may be suitable, rather than having a purely hydriparian habitat. Tamarisk may also provide suitable mid-story vegetation within the riparian areas; however, cuckoos are not known to breed in pure tamarisk stands. Ann said that the YBC winters in South America. Marit asked about the South American habitat. Ann believes it is similar, with thick vegetation canopy. She said that in the West cuckoos are usually found in riparian areas and sometimes in orchards, like the nearby pecan orchards. YBC has been observed at the Sweetwater Wetlands, the Simpson Farm site, Avra Valley Wastewater Treatment Plant, Cienega Creek and downstream of Ina Road. She said they prefer to nest during the monsoon season and usually migrate into the Arizona in May or June. They migrate out of Arizona in August or September.

The main threat to YBC populations is the loss of riparian habitat. She said there does not seem to be a major problem with contaminants, such as might be found in effluent, but YBC appears to have been affected by pesticides in California, which results in a reduced insect prey base. She said that the YBC are eaten by raptors, so the thick vegetative cover in riparian habitat also serves as escape cover. The YBC is also known to eat lizards that climb up in the trees.

Guy, looking at the stressors/threats meeting summary, asked Ann about how woody debris is a threat to YBC. Ann said this point only came up in the context that enhancing or restoring riparian habitat could lead to a build-up in woody debris and, in the lower Santa Cruz River, it can get washed downstream and catch on bridges, exacerbating flooding. It could also increase the potential for fire in hydriparian areas. Leslie said that this factor was also tied into the discussion on dealing with dynamic riparian systems. Many species like a particular successional stage, but when you are considering restoration, it begs the question of whether the system should be left to evolve naturally or should it be managed for a particular successional stage or mix of stages. Ann noted that the cuckoo likes areas with a variety of successional stages. Even if riparian vegetation is ripped out during a flood, the vegetation comes back so quickly and at such a density, that habitat for the cuckoo is improved as a result of flooding.

Leslie had asked Brian and Troy about the trade-offs between creating migratory stopovers versus creating breeding in the planning area. The thought was that breeding habitat is a much higher standard to meet than migratory habitat, in terms of patch size, vegetation density and composition, and other factors such as localized humidity levels. Given the level of effort, money, and water resources needed to create and maintain areas that would be suitable for breeding habitat, did Troy and Brian think it would be better to focus on restoring/enhancing migratory habitat to improve connectivity between wintering habitat and suitable breeding habitat north of Tucson, or should the City try to

create breeding opportunities, even if it means that the total size of the restoration is much smaller than what could be provided in terms of migratory habitat. Brian and Troy noted that there is suitable breeding habitat further north (along the Gila River) and riparian habitat in the Tucson area could provide a critical connection to that area, along both the Santa Cruz River and Altar/Brawley Wash through Avra Valley. Leslie added that Brian had found a YBC nesting in mesquite in Altar Wash. Ann asked if any areas of the Brawley Wash could be indicated as potential dispersal habitat. Ken Kingsley thinks the Brawley Wash could be made to be good habitat. Leslie said it might be useful to map where the YBC have been sighted in order to get a spatial perspective on what areas have been used as stopover habitat. Leslie said there have been some sightings in Avra Valley to and it would be good to try to visualize that corridor.

Dispersal and barriers to movements were not raised as significant issues because the cuckoos fly large distances when they move each night. Patch size is important, however, with respect to what is suitable habitat; the cuckoos prefer larger areas. Ann said that, in terms of habitat size, four breeding pairs could set up territories within a 10-hectare area. Ann said that in Avra Valley there are areas of irrigation return flow that could be beneficial to YBC, such as near the Simpson site. Ken Kertell mentioned that the Picacho Reservoir, before it dried out, was also a good place to find YBC. Leslie suggested that the drainage ditch in Avra Valley north of Manville Road had water year around and could be turned around into a more hydriparian area.

Rich asked where the nearest breeding population was in southeastern Arizona. Ken Kingsley said YBC are breeding along Cienega Creek upstream from the dam and are abundant along the San Pedro River. He added that the YBC were abundant in the Green Valley pecan orchards 25 years ago. Rich suggested that if we enhance City lands for migratory habitat, the YBC will definitely use those areas. Then, in years when the vegetation densities increase and sites offer conditions closer to typical breeding habitat, the YBC may utilize these dispersal areas as marginal breeding sites.

Leslie said that the TAC's discussion indicated that the number one goal for this species is to enhance/preserve dispersal corridors. Leslie noted that mortality didn't seem to be a big issue, although collisions with cars are possible on bridges over the Santa Cruz River. Leslie added that the quality of migratory habitat is an important consideration, as well as the overall configuration and connectivity of that habitat. To enhance these corridors, the main considerations seemed to be sufficient prey base and escape cover, while reducing predation risk by limiting perches for raptors.

Ann said that the width question is a topic TAC may have to come back to with riparian corridors. She noted that the Tucson Audubon Society is wrapping up a four-year bird study at the Simpson site that is evaluating whether cowbirds, who live upstream at a feedlot, are parasitizing too many nests. A large number of cowbirds forage at the feedlot and then come to Simpson Farm to lay their eggs. Audubon is considering trying to encourage a wider band of vegetation along the river. She said that effluent stream is only supporting a narrow band of vegetation and Audubon is considering continuing irrigation of vegetation, past the time they had intended, in order to make it grow up into a canopy faster than it would have otherwise. Ken Kingsley said that widening the local riparian corridors wouldn't be enough because they are so linear. He said that cowbirds can fly large distances, and native riparian areas are not wide enough to prevent cowbird incursions. Ken Kertell noted that this is why people have decided to just trap cowbirds

when trying to enhance willow flycatcher populations in California. Ken Kingsley pointed out that trapping cowbirds is very time intensive and costly. Ken Kingsley said that enhancing local habitat is good, but trying to widen those corridors won't help much to prevent or even reduce nest parasitism by cowbirds.

- **Burrowing owl**

The burrowing owl subcommittee met May 9 and was attended by Marit, Mark Ogonowski (grad student of Courtney Conway), Mike Ingraldi (AGFD), Wendy Burroughs (Pima County), Ken Kingsley, and Leslie.

Marit said there has been a decline in burrowing owls because prairie dogs have been extirpated from Arizona. She noted that prairie dogs were not known in Pima County, however. The current threat to the burrowing owl is from loss of habitat for breeding, dispersal and wintering due to urban development. During the winter, some owls in the Tucson area migrate, some disperse to other locations in the region, and others stay in the areas they used for breeding. When migrating or dispersing, the owls may stop at burrows for a day or longer.

Marit said that fire might improve habitat because they prefer open areas. Marit said they are meso-predators. The owls consume a diverse prey base, and it is important to have sufficient prey in areas where they breed. Marit suggested that this might be why burrowing owls are not found in Avra Valley; there might be an insufficient prey base due to a lack of species such as round-tailed ground squirrel. Marit noted that soils might play into habitat potential it as well. Burrowing owl habitat could be affected by mesquite infringement. Marit said that the use of artificial burrows is popular, but they haven't been adequately evaluated over the long term. The burrowing owl is fairly adaptable, and the owls can be found in a variety of local places including agricultural fields, culverts, along Golf Links Road and in some other highly impacted area. Marit stated that studies are needed, however, to see if the owls can survive in the long term in these highly impacted areas. Burrowing owls seem to get most of their water from their prey and no one is sure whether or how contaminants might affect them. In the Southlands, when trying to map the burrowing owl habitat, only ridges were identified as potential habitat because runoff/sheet flow is thought to be a significant problem because it floods owl burrows and the burrows of potential prey species as well. Edge effects are a concern as the owls prefer large blocks of habitat and edges make them more susceptible to predation by raptors. Burrowing owls can be heavily impacted during the migration of Swainson's and red-tail hawks.

Marit said that not much is known about demographics and population dynamics of this species. She said that translocation of owls, from areas to be developed, is widely practiced but hasn't been adequately studied. Owls may also be susceptible to West Nile Virus. Marit added that the owls might compete for burrows with squirrels and snakes. Domestic cats may eat burrowing owls. The effect of other invasive species is unknown, but bufflegrass could be a problem. Off-road vehicles can result in degradation of the habitat and burrows being crushed. Grazing might be beneficial because it keeps grass levels low. Rich added that grazing can also contribute to an increase in insects.

Marit asked Rich about how ranchers view burrowing species. Rich reiterated the importance of prairie dogs and felt that many ranchers still look at them, and other

burrowing animals, as pests. Leslie noted that the Tucson area didn't have prairie dogs historically, and that the burrowing owls were probably found primarily along the Santa Cruz River and other large washes. When agriculture was developed in and near Tucson, it provided more habitat, although artificial, for the burrowing owl. Rich suggested that the burrowing owls need to have a food base first, then a burrow. He felt that, in appropriate habitat with a good source of prey availability, artificial burrows could be put in if natural burrows are lacking. Marit said there are a few natural burrows along the Santa Cruz River in soil piping, but noted that the restoration project is likely to result in the loss of these features. Ken Kingsley clarified that there are agricultural fields and old irrigation ditches near the west branch that provided breeding habitat a prey base; along the main branch of the Santa Cruz River is where there is soil piping and other large erosion features. Leslie asked whether controlled burns in Avra Valley would encourage non-native grasses or could it be used to reduce vegetation volumes with promoting exotics. Ann suggested that mowing the grasses would be a better approach, and this is already being done on some City-owned properties. Ann said that if you had a certain area with burrowing owls you could definitely keep the succession down by mowing. She doesn't know if that would encourage or discourage buffleggrass, but it does keep the tumbleweeds down. Ann noted that the Simpson site was just given thousands of white bursage plants from a nursery. Audubon has decided that to plant them during the monsoon season near the artificial burrows for the owls and see if the bursage attracts more rodents. Marit asked Ann to keep her up to date on this Simpson site research.

Marit is concerned that rodent activity in Avra Valley is too low to support burrowing owls in many locations. Ann pointed out that there are lots of berms in Avra Valley to control washes (for example, along Brawley Wash), and these berms could be planted with species preferential for rodents. Leslie said it could also be possible to take fill from recharge basins to make artificial berms, which could be used to direct sheet flow. Ken Kingsley added that burrowing owl like to perch on fence posts. Ken Kingsley asked Guy about fire and how it affects non-native and native grasses. Guy replied that most of the fires he's seen is out-of-season fires, which tend to favor non-native plants. Guy thinks fires during the appropriate season would be beneficial to native grasses. He noted that seasonal fires are being tried for the first time at Buenos Aires National Wildlife Refuge next week. Ann pointed out that the City has old agricultural lands that are now full of buffleggrass and these areas could be a testing opportunity. Ann suggested that if the soil is ripped after an area is burned, it may reduce the amount of buffleggrass that returns. Guy asked Ann what is known about the persistence of seeds in the soil after burning. Ann didn't know, but thought that this could be an opportunity for study.

Rich noted that the burrowing owl is an intensive management proposition. He asked, if the owls were a part of the HCP, what kind of management would USFWS require. He added that the group has talked about mowing, berming, and other activities that require a commitment from the City. Leslie said that monitoring and an adaptive management program with associated success criteria and benchmarks are required elements in an HCP. Leslie said that the City would have to sit down with USFWS and AGFD to see if the benchmarks are being met, and if not, determine how the implementation of the conservation program can be modified to improve success. Leslie noted that, based on the No Surprises Rule, the modification can't require an additional amount of land, money or other resources. Leslie suggested that the first management steps should focus on actions that have lower costs and are politically favorable, such as educating

people about the threats caused by cats and dogs to burrowing owls. If that doesn't work, for example, then the City could move to more intensive methods, such as trapping cats. If that does not bring desired results, the City could then consider an ordinance that prohibits residents in the area from having outdoor cats. Leslie explained that the TAC could identify actions that are going to be beneficial and start with things that take less management effort and are less costly, but that improve suitability and meet the species goals. She said that different strategies need to be built into the adaptive management plan to provide flexibility. Leslie said that the management should be a least invasive as possible, while recognizing that the impacts of any management actions will not be known for certain prior to implementation. The idea is to build in enough flexibility so you know what you are aiming for and you have a big enough toolbox to use over time to keep heading towards that goal.

Ken Kinglsey said that some actions may be problematic, such as burning buffleggrass, because it would affect air quality and the City would have to get a permit from Pima County Department of Health. He added that another challenge would be the trapping round-tailed ground squirrels, because they are really smart and it is difficult to do. Leslie noted that Pima County is working with the National Park Service to put together a regional adaptive management toolbox, with guidelines for identifying, given a certain situation, what are the tools would work best, how they should be applied, and what is the relative cost. She said the County is going to have to create a major monitoring and adaptive management program associated with their HCP. The County will not have this in place by the time they apply for the HCP permit, but that they are committing to have it developed within the first two years of the permit. The intent is to apply for the permit by the end of this year so in the next couple years the County will have something very solid in place. Leslie said that will be something that the TAC can look to for ideas, and coordination of the City's monitoring and adaptive management program with the County's program will lead to better results as well as an economy of scale. Guy asked if it is reasonable to factor in significant money for vegetation management. Leslie and Ken Kingsley said yes, because it is essential.

Guy wanted to clarify the issue of fire on the burrowing owl stressor/threat matrix. He pointed out that it isn't only undocumented immigrants who start fires and the matrix should be reworded to remove the impression that these immigrants are solely responsible. Leslie agreed and said that the matrix would be reworded. Guy mentioned the potential threat posed by U.S. Border Patrol (USBP) driving all around the desert. Leslie added that some of the subcommittee experts had expressed a concern that the flood lights used by USBP, especially along Ajo Highway, could deter dispersing pygmy-owls and other species.

Leslie asked if goals of: (1) preserving breeding and foraging opportunities, (2) preserving corridors, and (3) decreasing mortality from ground disturbance (e.g., grading), predators, cars, cats and dogs, and people adequately addressed threats to this species. The TAC was in agreement.

Leslie referred to the goals and objectives for Pale Townsend big-eared bat (PTBB) that had been handed out at the last TAC meeting. She asked the TAC for comments on this as a framework for structuring the discussion of biological goals and objectives. Ann says it looks good, but wondered how detailed the action items would get. Leslie said that some will require much more detail, such as "preserving washes"; verses action

items that propose that use of fencing. Leslie explained that their needs to be enough detail for USFWS to understand how the proposed actions support the biological goals and objectives. Leslie also noted that the SAC needs enough information to be able to identify implementation and funding options. The TAC members indicated that they were comfortable with the format. Rich asked about using the word “measure” in the goals and objectives summary. Leslie replied that the “measures” implies a broader vision, and actions items are more detailed. Ann asked how SAC decides implementation, and would they consider political will and money in addition to the technical recommendations made by the TAC. Leslie said yes, that for example TAC could recommend that the City focus on preserving native plants. That would be the technical recommendation. The SAC’s responsibility then would be to look at the actual native plant preservation ordinances and decide whether and how the ordinance would need to be revised to implement that technical recommendation. Then SAC will then make an implementation recommendation to the City regarding the ordinance.

4) Call to the public

No members of the public were present.

5) Next steps/Future meetings

Leslie said the next TAC meeting is June 7 at USFWS. Topics for discussion include the subcommittee report for the PPC and needle-spined pineapple cacti and biological goals and objectives developed to date.