

Technical Advisory Committee Meeting Summary
January 10, 2005 1:00 – 4:00 pm
Arizona Game and Fish Department conference room

Attendees: Trevor Hare, Rich Glinski, Guy McPherson, Marit Alanen, Ann Phillips, Dennis Abbate, Bruce Prior, Ralph Marra, Michael Wyneken (City of Tucson – Planning), Rafael Sebba (City of Tucson – Planning), Clint Chiavarini (City of Tucson – Planning), Leslie Liberti (SWCA), Carolyn Campbell (Coalition for Sonoran Desert Protection), Brooks Keenan (Tucson Department of Transportation), Eileen Finnerty Rae (SAHBA)

1. Avra Valley field trip

Ralph noted that Tucson Water had just completed a 50-year long-range plan and the document had been approved in late November by Mayor and Council. He said that they were looking for comments on the plan. Ann asked when comments were due. Ralph responded that Tucson Water would be accepting comments from the public until December 2005.

Leslie noted that there had not been time during the Avra Valley field trip to see many of the City-owned parcels. She asked if anyone had comments, concerns, or questions regarding either anything that the group saw on the trip or any areas that were not visited.

Rich pointed out that the parcels that were visited were great areas for burrowing owl management areas (BOMAs). He didn't feel that planting a bunch of trees out on the properties would be a good approach. Leslie asked if there had been any burrowing owl surveys in Avra Valley. Dennis said that he didn't know the exact locations of past surveys, so he didn't know whether any owls had been found in City properties.

Ann pointed out that archeological surveys would have been required to put artificial burrows in the ground out at Simpson Farms, so instead, they put the burrows in berms. She asked Ralph if he had a firm idea of what would be happening in Avra Valley over the next 100 years. Ralph said that there are a number of decision points that will shape what happens in Avra Valley. By about 2006 there will need to be a decision about what total dissolved solids (TDS) level is acceptable in the water. If the Tucson community opts for a lower TDS, desalination will be required and evaporative ponds are very land intensive. Around 2014, there will need to be a decision about whether effluent will be re-used. The use of effluent would require additional treatment.

Ann asked whether there was any thought for urban development. Ralph said that he didn't know about the lands surrounding the City's holdings. He noted that wildcatting is already a problem in many areas. In terms of the City-owned property, however, there are no plans for urban development. Rich added that the TAC could focus on species that will benefit from the planned land uses and management of Avra Valley, whether or not the species are currently there or not. Ann pointed out that, unless the vegetation is managed, the properties will end up with invasive species. Appropriate management practices include seeding with native species to control tumbleweeds and the use of wildlife-friendly fences. She was concerned that the City properties not be earmarked for only burrowing owls. Ann asked if there are any wildlife species that could use brine. She thought that the TAC out to consider the use of a potential brine source, such as structuring the evaporative ponds as a "stream." Ralph thought that this was a

good idea and that the evaporative ponds and brine presented an opportunity to be considered. Bruce noted that there are currently halophyte studies being conducted in Alamogordo. Ann added that there are also studies occurring through University of Arizona also. Ken said that he is aware of studies of settling ponds along the Great Salt Lake, and it had been determined that the ponds were being used. The most important component of the pond system was the presence of brine shrimp, brine flies, and algae because these provided the basis for an ecosystem.

Michael asked about the impact of wildcat development in Avra Valley and whether that would have an impact on what the City was doing in the HCP. Leslie explained that it would need to be considered as part of the cumulative effects analysis, but the development could not be covered under the HCP because the City has no control over the development. Trevor asked if the City was lobbying to change state laws regarding wildcat development. Michael said that he didn't know because it is not an issue within the City boundaries. He also noted that the last big push to try and change state laws had resulted in a loosening of the requirements.

Rich pointed out that this is a significant issue when considering corridors because these lots are typically completely cleared and desecrated. Ken asked whether it would be appropriate to try and create corridors. Brooks asked what was known about corridors. Leslie responded that the County's Conservation Land System (CLS) included critical corridors. Carolyn explained that there was no clear guidance because the SDCP did not have strong goals with respect to corridors. Trevor pointed out that north-south corridors are not hard to identify; creating east-west corridors is the tough problem. Leslie also noted that the TAC would have to be careful in considering things like this because an HCP cannot depend on the actions of other jurisdictions. Rich thought that a good start to considering potential corridors would be to look at land ownership maps. Trevor suggested that one area to consider would be around Mile-wide Road. Leslie said that Tucson Water had created corridors in that area as part of the Section 7 consultation for CAVSARP.

Ann asked if the group could create a "parking lot" of ideas to forward on to the appropriate jurisdictions. Leslie thought that this was an excellent idea.

Rich asked what the pygmy-owl experts thought about not planting trees on the Avra Valley holdings. Dennis responded that there are probably some patches that could contribute to dispersal or even functional wintering habitat. He said that the pygmy-owl does not need huge trees to provide that function, which was demonstrated by the female that crossed Avra Valley last summer. Leslie suggested that connections could be created or improved by transplanting trees that have to be removed for water development projects. Rich suggested planting trees around the edge of the City properties and then using stormwater runoff to maintain them. Ralph pointed out that the City would need to consider the impact of these types of impacts in drainage. Laws regulate the quantity and quality of water flow onto and off of a site.

Ken also noted that he had been trapping for the Merriam's mouse under a grant received by the County, including some places within the City's HCP planning area. He said that they had trapped some animals that they thought were Merriam's mice.

2. Habitat Modeling Updates

- Pygmy-owl

Leslie said that the City now had an initial pygmy-owl habitat model. She reminded the group that this model had been developed in a meeting with Scott Richardson, Dennis Abbate, Bill Mannan, Michael Ingraldi, and Marit Alanen. Two types of habitat were identified: areas with potential for breeding and/or over-wintering and dispersal habitat.

Clint brought up a map of the pygmy owl habitat as recommended by the experts. He pointed out that the larger washes in the southwest corner of the Southlands. In the Avra Valley, there were a few pockets of potential breeding/over-wintering habitat, especially along the major washes, but the majority of the habitat has potential only for dispersal. Leslie noted that the map still needed to go back to the experts for review.

Rich asked if a 20-foot wide strip of vegetation along parcel edges, but no revegetation in the parcel center, would still be useful for the owl. Dennis said that the vegetation did not need to be continuous. He explained that it was surprising how far the owl is capable of moving, typically 25-50 meters in a hop. Trevor thought that any revegetation should be focused in the historic wash channels. Ken noted that many of those historic channels have changed. Rich thought that focusing on the parcel edges for revegetation would ensure that the trees would be safe from later development. Ann pointed out that Tucson Water would not need to develop the entire area of a parcel as an evaporation pond. She asked if the TAC could make recommendations with respect to siting of development and corridors.

Ralph said that the major issue was that Tucson Water did not know at this point what would be needed in terms of water development projects in Avra Valley. Leslie explained that one option was for Tucson Water to assume that all of the parcels would be developed. By taking a big-picture view, the TAC could determine what the cumulative impact would be of losing all of this land to development. Specific strategies could then be developed on a parcel-by-parcel basis to address the role that each particular piece of land plays in the overall landscape and also to protect any significant resources on-site. The mitigation requirements associated with each parcel would only come into play if the area was actually developed in the future. In this way, any potential future projects could be addressed in the HCP while still giving Tucson Water the flexibility to implement whichever set of projects are determined to be necessary later.

- Burrowing owl

Leslie explained that, like the Pima pineapple cactus, the recommendation of the burrowing owl experts (which was the same group of people involved in developing the pygmy-owl habitat model) was to start with known locations of the owls and match that up with soil type to see if there are any trends. The habitat model would then be further refined by eliminating any areas that had vegetation densities that were sufficiently high to make them less suitable for the owls. Clint added that it may be difficult to use soils as a basis for the habitat model; a preliminary look at the data had not provided much useful information.

Ann asked whether high concentrations of owls reflect where they are actually found or just where people have looked. Dennis replied that there have not been exhaustive surveys for burrowing owls, in part, because access to private land is a major issue.

Ann asked if the City was going to map all gullies in the planning area as burrowing owl habitat.

Leslie said that, without looking at the results in more detail, she couldn't say what was needed to accurately capture potential habitat.

Dennis added that Game and Fish has been tracking burrowing owls and has seen them show up in very strange location. He said that the TAC needed to keep in mind that the species has needs other than breeding habitat, for example dispersal habitat. Rich agreed and said that what the jurisdictions could do that would be of value would be provide "ports in a storm" for the owl. Leslie said that the TAC would need to consider what are the limiting factors for each species when developing conservation strategies.

- Pima pineapple cactus

Leslie said that using soils as the basis of a PPC habitat model was not going to work. Clint explained that one of the problems is that there is no statistical validity to this approach. Similar to the burrowing owls, the known PPC locations only indicate where the cactus has been located during project-specific surveys. The data do not tell us where the PPC are not found, nor do they indicate the relative densities that could be expected from one soil type to another. What the City has is basically binary data; either there is a PPC location on a particular soil type or there is not. Another issue is that a number of PPC locations fell along transition zones; areas where two different soil types were mapped side-by-side. It is impossible to know whether the PPC locations should all be within one of the two soil types, but they show up in both because of mapping errors or if the cactus prefers the transition areas in particular. Clint said that he created a modified soil layer that had polygons representing each transition area. When this was matched up against PPC locations, no relationship between the locations and particular transition zones was apparent.

Leslie noted that an alternate approach might be to assume that all of the Southlands is PPC habitat and then use site visits or aerial imagery to identify portions of the area that did not constitute suitable habitat. A field trip has been planned for January 25 for the purpose of determining whether or not areas within the Southlands could be excluded as potential habitat. Mima would be attending and had invited Linwood, Guy, and Marc Baker to attend also.

Ann asked if the TAC should be taking a conservative approach to capturing potential habitat. Leslie replied that there needs to be balance. On one hand, if the HCP underestimates the amount of impact on a covered species, USWFS might decline the permit application or the City might start permitting development in the Southlands only to find that, before the permit expired, they had already met the allowed level of impact. In this case, any additional development would not have ESA coverage until the City amended the HCP or developed a new HCP and received another take permit. On the other hand, if the anticipated impact is overestimated, then the amount of mitigation required by the City will be greater. If the financial burden of mitigation is too high, the City might be unwilling or unable to proceed with an incidental take permit application.

Rich thought that there were problems with extrapolating from existing data because none had been collected using random sampling. He thought that most of the known locations had been determined through developer or other project-specific surveys. Guy said that the USFWS recognized this issue and has collected data from a few hundred random points. Ken pointed out that even these surveys were not entirely random, but rather pseudo-random, because of the problem of getting access to private land.

- Needle-spined pineapple cactus

Leslie explained that Mima was entirely comfortable with the needle-spined pineapple cactus habitat model developed for the SDCP. The City would therefore be using this model to capture potential habitat for the cactus in the HCP planning area.

- Ground snake and Tucson shovel-nosed snake

For the two snakes, the habitat models developed by Phil Rosen for the Marana HCP had been used. Phil had reviewed the maps and was comfortable that the models worked as well for the City as for Marana.

Trevor asked if the TAC could get copies of the maps of species' habitat. Leslie said that Phil had additional information on priority habitat for both species that still needed to be added, but once that was done, the TAC would get copies of the habitat maps. Trevor asked whether the City could do a Mapguide type of website so that the TAC members could have an interactive method of reviewing the maps. Clint said he would look into whether or not the City could do this.

- Yellow-billed cuckoo

Leslie reviewed the approach to capturing cuckoo habitat that the TAC had agreed upon at the last meeting. To account for the dynamic nature of riparian systems, current and future potential habitat would be modeled using the Santa Cruz River floodway.

Clint brought up the floodway map but noted that there were two different GIS layers available. He said that he would speak with the stormwater staff person for the City to determine what the differences are between the two layers. The TAC felt that of the two layers, the "yellow" one looked more appropriate to capture potential cuckoo habitat. Leslie added that any new bank protection would also have to be considered.

- Lesser long-nosed bat and pale Townsend's big-eared bat

Leslie said that based on earlier discussion, it had been determined that the only habitat for either bat within the City's HCP planning area is potential foraging habitat. Mima had stated at the previous TAC meeting that the lesser long-nosed bat, when it is present in the Tucson area, is foraging primarily off of agaves. During the field trip on January 25 to look at PPC habitat, Mima would also look for any areas that the lesser long-nosed bat could forage.

The habitat model for the pale Townsend's big-eared bat was based on Linwood's input as to suitable foraging habitat for the species. Linwood had recommended that the basis of the habitat model be Arizona Upland vegetation communities. Leslie said that Linwood had not yet seen the resulting map, but he would review the map and provide additional ideas on whether or not and how the model could be improved.

3. Conservation Strategies

Leslie gave a brief Powerpoint presentation on the approval criteria for HCPs and other considerations that are necessary to address in an HCP. She also talked about other considerations that, while they are not legal requirements for HCPs, are important factors to take into account.

The HCP elements that the TAC would be asked to help develop as part of the conservation strategies for each target species are:

- Impacts on the proposed target species likely to result from the proposed covered activities
- Measures that the City can undertake to monitor, minimize, and mitigate these impacts
- Alternative actions

The alternative actions can be very important because often there is not a clear-cut “best” way to conserve a particular species. Leslie explained that if the TAC felt that there was more than one approach to address impacts to a covered species, they did not have to choose one or the other, but were welcome to recommend multiple alternate approaches. These alternatives would then be evaluated as part of the NEPA process.

Leslie then explained that, with respect to the conservation strategies, the most important HCP approval criteria are that:

- Take must be mitigated to maximum extent practicable
- Take will not appreciably reduce likelihood of survival and recovery of species in the wild
- There are sufficient assurances that the HCP can and will be implemented as proposed

In terms of the “maximum extent practicable” standard, the USFWS will only approve an HCP if it has been determined to be “adequate” and, if it is not adequate, an HCP can only be approved if it is the maximum that can be practically implemented by the applicant.

The second criterion is essentially the same as the jeopardy standard in Section 7 consultations; that the take will not result in jeopardy to a listed species.

The assurances criterion is important because an HCP can only be approved if the proposed measures can be implemented. This is particularly important for the City with respect to how State Trust Land in the Southlands can be handled. The City must have existing authority to implement any proposed measures and there are some aspects of the State Trust Lands planning and management over which the City has no control.

In addition to compliance with the Section 10 approval criteria, an HCP must also undergo a Section 7 consultation review. Since approving the Section 10 permit is a federal action, the USFWS must undergo an internal Section 7 consultation during the permit approval process. Section 7 requires some additional considerations beyond the HCP approval criteria. These considerations are:

- Approval of a permit not only cannot jeopardize the continued existence of listed species, but it must also not result in the adverse modification of critical habitat
- Not only the direct and indirect impacts of covered activities must be considered, but

- also the cumulative impacts of the covered activities and all other past activities and likely future activities that impact a covered species
- Impacts on plants must also be considered

The courts have determined that critical habitat includes any areas important to survival of species whether or not they have been formally designated. So proposed (but not yet finalized) critical habitat and areas outside of designated critical habitat must be considered.

The indirect impacts that must be considered include any effects of the covered activities that occur later in time but are still reasonably certain to occur. For example, an HCP should address effects to species outside planning area and impacts within the planning area even if they are not directly covered by terms of HCP, e.g., an increase in domestic animals as a result of more urban development that results in increased mortality to covered species.

The relationship of HCPs to the recovery of species is often misunderstood. An HCP is not required to recover listed species or to contribute to recovery objectives outlined in a recovery plan. Although, there is no requirement that an HCP result in a net benefit to the species, HCPs cannot preclude recovery of a listed species.

The USFWS HCP Handbook provides some guidance on the development of conservation strategies in an HCP. The first step in an HCP planning process is to identify planning area, which the City has already done. One thing to note, however, is that an HCP planning area can be divided into separate units that have different resources conditions and for which area-specific strategies are developed. The Handbook suggests that research and collection of additional biological data should be confined to distribution studies or other studies with direct bearing on needs of the HCP. One additional consideration is that an HCP can be habitat-based; in which case species distribution and occurrence data may not be a priority for data collection efforts.

Identifying impacts to covered species requires both an understanding of where the species' have a potential to occur (this is determined using existing and new biological information) and the rough location, type, and scope of activities that the applicant wishes to address in an HCP. The one caveat here is that only actions implemented or permitted by the applicant, i.e., for which the applicant had some control, can be addressed in an HCP. Finally, impacts can be measured either in terms of number of individuals or acres (and quality) of habitat impacted.

The conservation strategies themselves have 4 basic components:

- Biological Goals/Objectives
- Conservation Measures
- Monitoring
- Adaptive Management

The goals and objectives are important because they provide a check for determining whether proposed conservation measures are appropriate and meaningful. The conservation measures are the specific avoidance, minimization, and mitigation actions proposed to address impacts to the covered species. An HCP should include a framework for monitoring both compliance with the terms of the approved plan and take permit (i.e., is the HCP being implemented correctly) and the effectiveness of the conservation measures in achieving the desired outcomes of the conservation program. Finally, there needs to be an adaptive management program that

includes benchmarks that specify the criteria by which “effectiveness” of the conservation measures will be measured and proposed changes to management or implementation of the conservation strategies that can be used to improve the likelihood of reaching these benchmarks.

The HCP Handbook discusses three different approaches that can be used in conservation strategies, although, typically, an HCP relies on a combination of all of these methods. These approaches are to:

- Avoid impacting a covered species
- Minimize the scope or extent of the impact in the immediate proximity of a project
- Mitigate undesirable impacts by restoring habitat impacted by a project, creating new habitat to replace what was impacted, or compensate for the impact by protecting or acquiring existing habitat elsewhere

When proposing mitigation, some important considerations are the proximity of mitigation to the impact, the similarity of habitats being impacted and protected, and the size of a proposed mitigation area.

Leslie summarized by saying that the legal requirements for HCPs are that they:

- Cannot result in jeopardy to a species
- Cannot result in adverse modification of “critical” habitat
- Must address direct, indirect, cumulative impacts

Leslie added that she felt that another “requirement” is that an HCP must be implementable. This is true in the sense that an HCP cannot be approved if the applicant does not have sufficient authority to implement the terms of the HCP or if they cannot provide other necessary assurances that the HCP can and will be implemented as proposed. This statement is also true in the sense that, if the measures proposed in an HCP are inconsistent with the vision and goals of the applicant, then there is very little chance that the HCP will ever be finalized and submitted to USFWS and less chance that the approved HCP will be implemented correctly.

Other factors that are not legally required, but are good considerations nonetheless are that an HCP should be:

- Consistent with local policies, plans, regulations
- Consistent with other HCPs
- Consistent with recovery plans
- Produce net benefits to species

Carolyn felt that jurisdictions have a moral obligation to contribute to the recovery of listed species and provide sufficient protections that non-listed species will not become listed in the future. Leslie responded that the material she presented was from the HCP Handbook and represented only a look at the legal requirements for HCPs necessary for approval by USFWS. She pointed out that an understanding of the legal framework for HCPs is an important consideration. Leslie explained that this presentation was not intended to imply that the City should not or would not consider measures that were intended to result in net benefits to the species and to promote, rather than simply not preclude, recovery. She explained that these types of considerations would come into play when the TAC developed the biological goals and

objectives for each target species proposed for coverage in the HCP.

4. Next steps/Future meetings

Leslie asked the TAC for input regarding what approach would work best to help them in developing conservation strategies for the target species. She said that the first question was whether the team wanted to consider each species across the entire HCP planning area, or to consider each of the three planning areas separately. Rich felt that the three different areas should be addressed individually and the rest of the TAC supported that approach.

The next question dealt with the amount and type of information that the TAC wanted on each target species prior to beginning discussions on conservation strategies. She described the technical memos that had been developed for Marana's technical team, but said that she thought that most people did not read them or felt that they were not particularly useful. In that process, the technical team ended up having species-specific workshops to hammer out details of each species' conservation measures. Based on this, Leslie wondered if having a meeting that just focused on a discussion of the biology of each species would be useful.

Ken asked if people thought that the SDCP memos or the Marana memos were more useful. The consensus seemed to be that the style and content of the Marana memos was fine. The TAC did not think that it would be necessary to have an entire meeting to discuss the species memos before beginning work on the conservation strategies.

Leslie said that the TAC would be provided with technical memos for each of the target species at the next TAC meeting.

The next TAC meeting was scheduled for February 28, 8-11 am, in the Game and Fish conference room.

5. Call to the public

There was no response to the call to the public.