

HABITAT CONSERVATION PLAN
Technical Advisory Committee
April 18, 2006. 9:00 – 11:00 am
Arizona Game and Fish Department Conference Room
555 North Greasewood Road
Tucson, Arizona 85745-3612

MEETING SUMMARY

Attendees: Guy McPherson, Trevor Hare, Ann Phillips, Linwood Smith, Cathy Crawford (Arizona Game and Fish Department), Mima Falk (U.S. Fish and Wildlife Service), Ralph Marra (Tucson Water Department), Lori Anderson (Coalition for Sonoran Desert Protection), Jennifer Becker (Pima County Flood Control District), Michael Wyneken (City of Tucson – Urban Planning & Design), Leslie Liberti (City of Tucson – City Manager’s Office), Jessica Lee and Geoff Soroka (SWCA)

1) Update on Recent SAC Meetings/Upcoming Meetings

a. Recent/Scheduled SAC Meetings:

- April 19, 3-5 pm, @ AGFD.

b. Scheduled TAC Meetings:

- May 2, 8am to Noon Fieldtrip. Meet at USFWS.
- First and Third Tuesdays, 9:00 – 11:00 AM @ AGFD.

Leslie explained that since the Stakeholder Advisory Committee (SAC) had not met since the last TAC meeting, there were no updates to provide. Leslie asked the TAC if an 8am to noon fieldtrip on May 2 would work with their schedules for the purpose of viewing various restoration projects. The TAC accepted the May 2 schedule, although Trevor brought up the fact that the “Border, Boundaries and Timescales” conference would be going on that day. Leslie suggested that the May 16 meeting could be a fieldtrip to look at the El Rio Medio restoration area. She noted that plan formation is presently underway for El Rio Medio. She suggested that the TAC members could meet at the USFWS Office and then City vans could provide transportation to the site. She said that she would provide more fieldtrip details by email.

Leslie announced that the City is creating the new Office of Conservation and Sustainable Development. She explained that the office would include her, two existing City staff members, and one new position. She said that more City staff support would be available to work on HCP-related tasks.

2) Old Business

a. Meeting Minutes – March 21, 2006

Leslie noted that the meeting minutes had been sent out more than a week ago, and that Kathryn Mauz (University of Arizona), Ralph, and Guy had provided comments. Ralph noted that his comments did not appear correctly in the email he sent to the group. Leslie said that Jessica would incorporate all the comments, and re-send them to the TAC for approval at the following meeting.

b. Research Proposals for HCP Segment 2

Leslie provided an update to the three research proposals for segment 2 of the HCP, including a bioaccumulation study of Roundup in western burrowing owls, a buffelgrass eradication and revegetation study in Avra Valley, and Pima pineapple and needle-spine pineapple cacti surveys in the expanded Southlands planning sub-area. She said that Mike Ingraldi (AGFD) had submitted a proposal to study the bioaccumulation of Roundup in burrowing owls at the last TAC meeting, and that there had been some initial concerns about its \$67,000 cost. The segment 2 grant includes about \$100,000 for surveys/data collection, so the TAC wanted to review all three proposals in order to decide which research projects to fund.

Ann passed out copies of the draft "Proposal for Restoration Trials on City of Tucson Avra Valley Land." She noted that the cost does not include seed trapping analysis and cost estimates, and that Travis Bean (University of Arizona Desert Lab) was supposed to get back to Leslie regarding some of these details. She explained that, in order to lower the costs and be more efficient with limited resources and staff, that the monitoring plan involves a limited amount of detail. She said that photo monitoring can be effective, rather than spending money and time doing actual plots. She explained that the goal is to develop effective restoration strategies that could be broadly applied on City's Avra Valley lands, particularly on areas treated for buffelgrass infestation. She noted that four different revegetation trials would be set up, each incorporating three one-acre test plots, and these would be evaluated each year for three years until 2009. The four trials would be as follows: (1) broadcast native seed over sprayed buffelgrass stalks; (2) broadcast native seed over sprayed and disked buffelgrass; (3) swale soil and broadcast native seed; and (4) swale soil and plant saltbush and mesquite trees. She relayed Travis's concern regarding seeding for only one year after eradication. She noted that on the Simpson Farm restoration site, Tucson Audubon Society has seen positive revegetation results from disking the soil. She explained that the current native seed mix that the City has available is not appropriate for tough restoration conditions such as the fallow agricultural fields with depleted soils that are present in the project area. She suggested an alternative seed mix with whitethorn acacia, catclaw acacia, desert saltbush, four-wing saltbush, needle grama, rothrock grama, creosote bush, Indian wheat, and native mesquite. One hundred and eighty pounds of this new mix would cost approximately \$3,600. For trial four, the saltbush and mesquite plants would need to be relatively mature, at least 5 gallons in size. The swales would be created approximately 50 feet apart, and the trees would be watered for only a few months out of the year by a drive-by watering truck. She stressed that this proposal is based on more of a demonstration project, rather than a true scientific experiment.

Ann noted that for a seed analysis, Travis suggested using either the U.S. Geological Survey (USGS) protocol or doing a soil analysis. She said that approximately 10 pounds of seed would be applied each year. She said that, in terms of what is best for the City, it would be better to do multiple years of seeding because rainfall is so variable. Trevor suggested that the strategy of seeding each year could depend on the regeneration and recruitment success of different plant species the year before. Trevor said that he agreed with Ann about the goal for the level of data collection. Mima asked Ann if she did any literature research for restoration after herbicide spraying in areas similar to Avra

Valley. Ann said that she had not done an extensive literature review, but that Travis is likely up to date. She said that based on her work at the Simpson Farm site, old farmland is a tough environment to restore. She believes that the City has few alternatives besides seeding, because planting is expensive. Thus, varied experiments with seeding are worth a try. Mima suggested that it might be better to not spread native seed over dead buffelgrass. Ann noted that the native seed mix would be sprayed over the land, and that because it is almost entirely buffelgrass in some fields, there is nothing to lose. In response to Mima's comment, Ann suggested to the TAC that perhaps they should eliminate that particular experiment plan. Jennifer thought it would be better to try it anyway, and Linwood agreed. Ann noted that the revegetation experiment would take over 5 years.

Ralph pointed out that Ann's proposal is vague in terms of detailing who would do the work and how much their time/labor/equipment would cost. He asked if this was an official Tucson Audubon Society proposal. Leslie said that Ann was asked to write the proposal based on her restoration expertise, but that she was not officially representing the organization on this. Ralph suggested to Ann that she call Harold Maxwell (Tucson Water) and get an estimate on the costs of equipment and staff time. Ann agreed, and stressed that Harold had been included in this discussion the entire time.

Mima asked Ann for more details regarding photo monitoring. Ann noted that Audubon has very specific photo monitoring protocol. At each established monitoring location a stake would be put into the ground to mark the exact site, and a direction would be chosen and marked with a compass. Two photos would be taken, one would be a broad view, and a second would be a "tip down" view of the ground. Mima asked what type of detail would be captured in a photo and what the criteria for success would be. Ann responded that photo monitoring is a cheap way to monitor changes in a landscape over time. Geoff asked if photo points would be established outside of the experiment plots in order to provide a comparison. Ann said that they would be, and further mentioned that evaluating aerial photographs (from Pima Association of Governments) would also be utilized. She said that Travis did not think it was worth the time or money to establish one meter plots. Mima asked how, with photo monitoring, could one report success or recovery. Ann noted that the level of detail and data collection is a trade off for simplicity and cost. Mima noted that there is not necessarily an appropriate reference point in Avra Valley because so much of the land has been previously disturbed.

Leslie said that these were good questions, because these would have to be answered for the Avra Valley HCP. Ann stressed that restoration is a slow process, and in some ways, anything done in Avra Valley is going to be an improvement. She said that the goals behind the proposal are efficiency and cost effectiveness. Jennifer suggested that, considering these plots are restoration trials, it would be helpful to know what species are regenerating. Perhaps small-scale presence/absence surveys could be done. She noted that Pima County has volunteers working on their Master Gardeners Certificate, and perhaps these individuals could be used for monitoring in Avra Valley.

Trevor brought up the issue about what level of data USFWS would require in the HCP, a question of quantitative data verses qualitative data. Ann noted that at Simpson Farm, Audubon conducts a mixture of photo monitoring and vegetation monitoring. She explained that they have vegetation monitoring transects installed for the purpose of doing line intercept data collection for density and cover. They also conduct 2 meter by

50-meter quads in which all plant individuals are counted by species. She noted that conducting 20 of these plots usually costs between \$3,000-5,000. Trevor suggested to the TAC that they set up a mixture between quantitative data collection and qualitative data collection through photo monitoring. He suggested doing the quantitative data collection every five years, and photo monitoring every year. Ann said that she could talk to Mark Briggs who did the cost estimate for vegetation monitoring at Simpson Farm. Geoff asked if western burrowing owls would be monitored in this section following the seeding trials. Trevor said that AGFD would be doing that monitoring work.

Ann asked the TAC how they would prefer the experimental plots in Avra Valley to be laid out. She suggested setting up the four plots in a continuous piece of land in the southwest corner of the parcel. This way the plots would be near the roads for convenience, and since the wind generally blows from the southwest, it would limit the effects that external factors would have on the plots. Ralph again asked who would be doing this work, and suggested explicitly outlining these details in the proposal. Ann said that she would do this. Mima asked Leslie if she would follow up with Travis regarding how to do the seed sampling, because we would want some data on how buffelgrass is affecting other species in the long term. Leslie said that she would follow up with him. Ralph stressed that a trained botanist should be listed in the proposal.

Leslie asked the TAC if they want to approve Mike Ingraldi's western burrowing owl study. Cathy said that, while she acknowledges that Ingraldi is the local burrowing owl expert, she feels uncomfortable with the fact that if the TAC approves this proposal, that AGFD would be receiving money from the same grant that they are giving to the City. She said that this could put her in a strange situation within the agency. Thus, she favors funding the vegetation monitoring study over the burrowing owl study if the TAC could only fund one or the other. Leslie noted that the challenge is to foresee the research work that AGFD could do in the future, so that this could be outlined in grant applications from the beginning. Leslie further explained that this would help to avoid any questionable funding scenarios. Mima noted that there is money available for funding USGS and suggested that the vegetation work could be done through that agency, although it would likely be expensive. She said that she could put in an application for this funding. Leslie suggested to Mima that she contact Todd Esque (USGS, Las Vegas Office), and said that she would get Travis to write up a summary of the work that needs to be done in Avra Valley.

Guy asked if anyone is familiar with any literature on bioaccumulation of Roundup. Trevor noted that Ingraldi's proposal lists some references to studies. Mima said that she could ask the USFWS contamination experts staff. Linwood noted that an article was published in Conservation Biology about the impacts of Roundup. Trevor mentioned that Phil Rosen was not too concerned about the adverse effects of Roundup in the Sonoran Desert as most of the literature concludes that Roundup is only harmful to species that live in ponds, where the pesticide can accumulate. Guy suggested that it might be worthwhile to spend \$1,000 to pay someone to do a literature review first, before the TAC approves Ingraldi's costly proposal. Leslie suggested that SWCA do a quick literature review for the TAC. The TAC instructed Geoff to look into any bioaccumulation studies of Roundup on herps and birds specifically. Jennifer noted that Pima County did a lot of research on Roundup before they sprayed buffelgrass on areas near the West Branch. She noted research by Rick A. Relyea (University of Pittsburgh), and suggested looking at both the effects of glyphosate and of the surfactants used in Roundup.

Leslie said that Marc Baker sent in two proposals to look for Pima pineapple and needle-spine pineapple cacti in the expanded Southlands planning sub-area. The first proposal involves surveying approximately 3,000 one-mile long linear transects throughout predicted habitat of occurrence for both species, approximately 120,000 acres. This proposal would cost \$138,000. The second proposal involves identifying polygons of predicted areas of higher density cacti occurrence using aerial photographs, and then surveying 280 belt transects. This survey would cost approximately \$18,000. Leslie suggested combining the survey approaches to obtain more detailed data, but to limit spending to \$20,000-25,000. Mima said that she would like to see Marc's suggested polygons first, and that she would call him and that they could look at the maps together.

Ann suggested that at the next TAC meeting, the decision should be made on how to deal with buffelgrass when it greens up after the monsoons. She stressed that the burrowing owl monitoring might take some time, so the timeline should be planned out in advance.

Leslie said that the City received a USFWS Partners for Fish and Wildlife grant to do the buffelgrass eradication. She explained that the grant could not be used to fund City employees, so USFWS approved expanding the eradication area to include Tumamoc Hill and Sentinel Peak so that the money could be used towards the efforts in getting rid of buffelgrass in those areas. Pima County said that they would match that grant to help pay for those efforts. Leslie further explained that the locals are also working on removing buffelgrass from their neighborhood.

Leslie asked the TAC if there were any other research proposals that they would like to see. Trevor suggested looking at Blanco Wash for Tucson shovel-nosed snake. Leslie noted that Phil already had said that this area is good habitat. He retracted that proposal, saying that the wash areas are already included for protection in both the City HCP and Sonoran Desert Conservation Plan. Leslie noted that for the Marana HCP, Phil did snake surveys and found a Tucson shovel-nosed snake near Picacho peak and three ground snakes. Mima noted that there is a newly described perennial plant near Vail with only two identified populations so far, and suggested that Marc look for it while he is out on the cacti surveys since they exist in similar geographic areas. Leslie noted that if the TAC has any more research proposal suggestions, to email them to the entire group. Ann asked if AGFD has done burrowing owl surveys along the Santa Cruz. Leslie said yes, and that Courtney Conway (University of Arizona) also did some surveys. She said that there is good baseline information on burrowing owls along the river.

b. Santa Cruz River Planning Sub-Area: Existing conditions, other planning efforts, and discussion (Continued)

Leslie explained that at the last TAC meeting, the group located areas in the southern portion of the planning sub-area that contained good vegetation and other areas that were rich in amphibian species richness and diversity. However, she noted that in most of those cases, it was a result of manmade alterations that provided for catching rainwater. She said that the TAC decided that there were no immediate take issues in the planning sub-area. The group decided that there was a need to develop interim conservation guidelines to help guide development. It was also noted that if/when restoration occurs, there might be a need to detail Safe Harbor Agreements (SHAs)

and/or Candidate Conservation Agreements with Assurances (CCAAs) for species that could move into the planning sub-area due to habitat improvement. The TAC also discussed that if the USACE restoration projects do occur, what types of recommendations should be suggested from the group to insure that the federal restoration plans make sense and that they fit into the local goals of restoration, conservation, and protection of known species. Leslie indicated that this meeting was intended to provide time for the TAC to begin developing those interim conservation guidelines for developments along the river in order to preserve opportunities for restoration in the future and/or to create a mechanism for the group to suggest restoration designs within the private development projects.

Ann said that she has not yet typed up the conservation principles that she listed at the last meeting, and that she would provide them at the next meeting. In general, the principles involved: (1) removing non-native plants; (2) working with seasonal influences to introduce remedial native seeds and plants; (3) working with the existing river terracing, wet spots, pools, grade control structures, etc.; (4) adding new grade control structures in the river; (5) utilizing inlets and tributaries to concentrate restoration activities; (6) laying back terraced sides to create a more natural flood plain; (7) selectively removing non-native species over time; (8) creating anthropocentric microenvironments along the uplands areas through the use of passive rainwater harvesting; (9) utilizing the historic plant list detailed by Thornber from near Sentinel Peak in 1909; (10) utilizing native plants collected from cuttings in the river area by Desert Survivors; (11) varying habitat restoration along trails and parks from a manicured approach to a more "wild" design by integrating a mix of understory, midstory, and overstory plant species; and (12) adding additional egresses out of the river channel for use as wildlife corridors. She also suggested flattening out pedestrian bridges to make them more wildlife friendly. Jennifer noted that bats are currently not using the existing pedestrian bridges, but could look into what changes could be made to the design to increase roosting potential.

Ann suggested creating a plant palette that would encourage native vegetation landscaping, while also listing suggestions that were provided at the El Rio Medio planning meeting. Leslie stressed that the goal of the conservation guidelines is to provide specific, well-articulated suggestions that could be understood by the general public and developers. Ann suggested that the plant palette could be detailed by the ratio of plant species in order to create appropriate structure and density. She noted that the tributaries and the river itself are going to be the best areas for connectivity. Leslie said that the maps and aerial photographs provided by the City for TAC review do show land ownership, but that there may be other GIS layers that would help the TAC. She suggested that the Santa Cruz River parks and trail plans might be beneficial and the TAC agreed. She said that the City has jurisdictional control over the river.

Leslie asked the TAC if they would be interested in a short presentation about the rezoning process that the developer goes through with the City, for example, in terms of the negotiations specifically with the Barclay project. The TAC agreed, saying that it would be helpful to better understand the constraints developers have. Ann said that it is important to understand how the City regulates stormwater drainage on sites, and that it would be helpful to bring Frank Sousa (City of Tucson) in to discuss this. Trevor asked Jennifer where Pima County plans to add soil cement along the river in the future. Jennifer said that these areas have already been identified, but that not all the work has

been done yet. She said that, for example, at the stretch between Ajo Highway and 29th Street, was part of the 2005 bond package, and bank protection for a 20-year flood event will be added, with 100-year protection located along the exposed landfill. She said that Pima County has no plans to add any additional soil cement public projects, and that at risk areas within private property can provide their own flood protection. For example, Cottonwood Lane Mobile Home Park could work on adding bank protection. She noted that Pima County is interested in purchasing this property.

Leslie summarized the discussion, and said that the TAC needs to identify key questions to address when looking at new development proposals. Some of the things that the TAC would need to address in this regard include: identifying which resources should be preserved and/or integrated into the development, identifying how the design of bank protection would affect habitat, identifying which plant species would be used for revegetation, determining how to use stormwater harvesting, and determining the desired density and structure of vegetation. She suggested that the TAC start summarizing these points by email before the next TAC meeting.

3) New Business

- a. *None*

4) Call to the Public

No members of the public were present.

5) Next Steps/ Future Meetings

Leslie said that she would provide an update on the rezoning process, specifically with regards to the Barclay development, at a later meeting. She said that the next two meetings would be fieldtrips and that she would send out details by email. Cathy asked Ann if she could send out her list of conservation principles by email before the next meeting. Michael said that the City would provide more information regarding what was discussed at the El Rio Medio meeting.

The City provided hard copies of the Preliminary Draft HCP to TAC members.