

HABITAT CONSERVATION PLAN
Technical Advisory Committee
February 21, 2006. 9:00 – 11:00 AM
Arizona Game and Fish Department Conference Room
555 North Greasewood Road
Tucson, Arizona 85745-3612

MEETING SUMMARY

Attendees: Rich Glinski, Guy McPherson, Ann Phillips, Trevor Hare, Marit Alanen (USFWS), Ralph Marra, Harold Maxwell, Ries Lindley and Wally Wilson (City of Tucson – Tucson Water Department), Michael Ingraldi and David Grandmaison (AGFD Research Branch), Amanda Best and Kim Otero (Westland Resources), Bob Austin (Barclay Group), Frank Sousa (City of Tucson – Department of Transportation, Stormwater), Michael Wyneken (City of Tucson – Urban Planning and 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:*

- **February 2**, 3-5 pm, @ AGFD
- **March 15**, 3-5 pm, @ AGFD

b. *Scheduled TAC Meetings:*

- **First and third Tuesdays of each month, 9:00 – 11:00 AM @ AGFD**

Leslie noted that the Stakeholder Advisory Committee (SAC) had not met since the last TAC meeting, thus there was no updates to provide to the group.

2) Old Business

a. *Meeting Minutes – February 7, 2006 minutes have been sent out and will be included on the March 7, 2006 agenda for approval.*

Leslie said that meeting minutes from February 7 have been sent out to the TAC and that the minutes would be set for approval on the March 7 agenda. She noted that this timeline would be followed for meeting minutes in the future so that TAC members would have approximately two weeks to review the minutes.

b. *Report – Subsurface Soil Samples at CAVSARP and SAVSARP per TAC Request*

Leslie mentioned that the TAC had requested to review soil data taken from Tucson Water CAVSARP and SAVSARP properties. She said that, with the possibility of herbicide application on buffelgrass in Avra Valley, TAC members wanted to know what herbicide and other material residues were currently present in the soil already. She said that the TAC opted to review soil samples from other Tucson Water properties to use as

soil baseline information for the 2,000 acres under consideration for the buffelgrass management study.

Wally reviewed soil data from both the Tucson Water CAVSARP and SAVSARP recharge basin sites. He explained that four investigations were conducted on the sites; two of the investigations looked at pesticide content in the soil, while two others were part of an Environmental Site Assessment (ESA) investigation. He said that at CAVSARP, there were 50 soil samples taken from 0 to 10 feet in depth. He reported that at this site, there were no herbicides or organophosphate pesticides detected; however, DDE (dichloro diphenyl ethylene), DDT (dichloro diphenyl trichloroethene), toxophene, and organochlorine pesticides were identified in the soil. He said that 95 percent of the mass of these pesticide residuals was detected within two feet of soil depth; and that all residual amounts were below the soil remediation levels (SRL) listed by the Arizona Department of Environmental Quality (ADEQ). He said that all of the residuals were detected in the tenths to hundredths of a milligram per kilogram, several orders of magnitude below ADEQ's SRLs for these compounds. He said that at SAVSARP, there were 13 soil sample locations taken between 0 and 10 feet. No herbicides or organophosphate pesticides were detected. He said that 12 organochlorine compounds were detected at one location, and that DDE, DDT and toxophene were regularly found in all of the samples. He said that 90 percent of the mass of these residuals was detected within three feet of soil depth and all were below SRL, and that concentrations were almost half those detected at CAVSARP. He said that the ESAs looked at historic land ownership and uses on the properties, and looked at potential contaminants that could occur on site. He said that at CAVSARP, several abandoned well sites were detected with localized oil staining; all of these sites were remediated. He said that there were also a number of wildcat dumps, which contained construction debris and household trash, which were also remediated. At SAVSARP, there were only a few small wildcat dumps that consisted only of a single tire or few cement blocks. He said that there were no other sites in need of remediation.

Ralph noted that City-owned lands in Avra Valley were retired from agriculture between 20 and 30 years ago, thus the soil data is an example of what happens in the soil years after pesticide application has ceased. Ann asked Wally if Tucson Water also evaluated the soil for metal content. Wally said that they had not. Ann asked Wally the approximate cost for a round of sampling. Wally noted that the cost for an individual soil sample was a few hundred dollars. He said that each sampling point actually consisted of eight or so samples because they took a sample every six inches throughout the soil profile. Wally noted that the soil removed for the retention basins was used to create berms around the basins, and that due to the low level of pesticides found in the soil, there was no requirement to remediate the soils before the berms were created. Wally said that modeling and monitoring was done at CAVSARP to investigate the potential of pesticides in these soils leaching down into the groundwater; he said that Tucson Water determined that there was little possibility that leaching would occur. Ralph added that because there are some perching zones within CAVSARP, monitoring wells were put in at various depths in order to monitor any change in the water chemistry through the vadose zone. Wally mentioned that the perched water tables occurred approximately 150 and 200 feet down. Trevor asked if there has been any research conducted with regards to the effects of residual DDT on western burrowing owls (BUOW). Mike said that there has been some research published on bioaccumulation and BUOW, but not in Arizona.

3) New Business

a. *Buffelgrass Eradication Update: Report from Subcommittee*

Leslie noted that the TAC requested at the last meeting that a buffelgrass subcommittee be established to discuss the eradication plans. She said that the subcommittee met and that Ann would provide an update. Ann provided a handout that summarized the major research questions that the subcommittee outlined and the draft proposed approach for buffelgrass treatment on selected Avra Valley lands. Ann reviewed the subcommittee's meeting results, including additional notes by Mima Falk (USFWS). Ann noted that, according to Tucson Water Department, the soonest the lands could be developed would be at least five years from now. Thus, the subcommittee decided that five years would be a good initial study period, and that the draft outlines the approach for the first three years. She said that Roundup is a 2 percent herbicide solution. She said that Harold provided a map of the parcels that contain the two homes in Avra Valley to Dennis Abbate. These buffelgrass areas are where immediate fire control mechanisms are needed to protect the homes. Ann said that Dennis reported finding BUOW near the old agricultural canals and around a wash close to one of the houses. Ann stressed that the TAC needs to discuss what BUOW abatement needs to be done immediately so Tucson Water can blade the land around the houses. She noted that buffelgrass is likely to seed again in the future, at which point the area would need to be sprayed with herbicide. She mentioned that, after the homes are taken care of, the next step is to evaluate other parcels in the Avra Valley planning sub-area to evaluate for other potential fire dangers.

Ann continued, explaining that Avra Valley contains the Kenya-Tanzania strain of buffelgrass, not the Texas strain that is problematic in Sonora, Mexico. She noted that seed dispersal is a problem because it can be transported by prevailing winds and dust devils, and by vehicles along roadsides. She noted that buffelgrass control areas have been established around the Arizona-Sonora Desert Museum, and that the subcommittee said that it would be important to get buffelgrass density information on Avra Valley lands. Ann noted that the Museum had relied on pulling buffelgrass in the past, but had recently changed to herbicide application because the grass was spreading faster than they could pull it. She noted that the new Cooperative Weed Management Area group met earlier in February, and might be the group to take the lead on regional buffelgrass mapping and pooling resources and information. Leslie noted that if the City receives any federal grant monies that an Environmental Assessment (EA) or Environmental Impact Assessment (EIS) would probably have to be done. Ann noted that buffelgrass germinates at all times of the year, but mainly after the summer monsoons.

Ann noted that the subcommittee had a long discussion on the topic of biological monitoring during the buffelgrass treatment program. She noted that lots of biological monitoring could be done, but that unless variables could be controlled, all that accumulated data would not be valuable. She explained that the subcommittee decided to focus the biological monitoring on BUOW, the seed bank, and soil monitoring. She noted that AGFD would do the BUOW monitoring, and that Todd Esque (USGS) and Travis Bean (University of Arizona Desert Lab) would be working to develop the seed bank monitoring program. She noted that AGFD would need to report on how close to BUOW burrows Roundup spraying could occur. She said that revegetation would be

done via three different techniques including seeding, disking, and swaling with a road grader. She noted that 2,000 acres is an extensive area to revegetate, thus the revegetation program would be done in a way to work with the natural tendencies of the land. She said that revegetation would occur as soon as buffelgrass greens up and is then sprayed with Roundup. She noted that the subcommittee did not specify that vegetation monitoring would take place, but that it could be done easily. She said that during the first year of the treatment program, herbicide would be sprayed on the entire area. She said that during the second and third years, spot treatment and revegetation would be done. She said that the subcommittee debated on how long the area should be monitored until it was determined that buffelgrass was gone and revegetated. She noted that Travis had suggested three years, but the group decided that there would be useful information gathered after the first year, and that a revegetation plan should be applied then. She said that the group decided that the initial phase of the treatment plan would last three years, and then the group would reassess the issue.

Ann noted that in terms of an experimental hypothesis, the subcommittee delineated a few top research questions: (1) Can buffelgrass be controlled on City holdings having the worst infestation using repeated herbicide treatments? (2) What is the impact of herbicide treatment on resident BUOW individuals? (3) Will soil quality be impacted by treatment with herbicides? (4) Can the seed bank of buffelgrass in this area be reduced by buffelgrass eradication efforts? (5) Can revegetation succeed if it is implemented following one full year of eradication efforts? (5a) Is seeding more successful if buffelgrass hulks are left in place as mulch or disked under to break the soil? and (5b) Are more concentrated watering and seedling plantings needed to accelerate revegetation? Ann said that, pending comments from the TAC, the City would go ahead with this treatment plan. Trevor asked Ann if the subcommittee discussed amphibian and invertebrate monitoring, since in his opinion, they are species that would likely be the most sensitive to herbicides. Ann and Guy responded that it was discussed, but the subcommittee agreed that, because it is impossible to monitor every species, that BUOW would be the best one to monitor. Ann noted that the seed source is going to be impacted, thus any animals that depend on those seeds would also be affected. Ann listed plants on the City's revegetation list: whitethorn acacia, catclaw acacia, desert saltbush, needle grama, rothrock grama, desert senna, blue palo verde, foothill palo verde (this species will not be in future Avra Seed mixes), creosote bush, desert globemallow, giant dropseed, Indian wheat grass, velvet mesquite, sand dropseed, and Arizona cottontop.

Rich asked if there could be secondary poisoning from Roundup on BUOW and if there had been any LD₅₀ studies conducted (the lethal dose needed to kill 50 percent of the test subjects). Trevor noted that there has been some research done on tree-dwelling frogs. Rich noted that once the vegetation is cleared from herbicide, that it might actually enhance BUOW habitat. Rich said that, however, the real effects of Roundup might only be identified if biopsies or other tests were done on owls (and possibly their prey) in the area over time. Michael suggested that it would be important to do laboratory analysis of BUOW eggs before herbicides are sprayed to build a baseline data set in order to evaluate if the chemicals would bioaccumulate in the BUOW populations. He noted that it would cost approximately \$200 per egg, and that a sample size of 15 to 20 individuals would likely suffice, but that he would have to evaluate the sample size after becoming more familiar with the 2,000 acres. Trevor noted that there might be valuable research on BUOW out of California. Rich agreed, but stressed that this study would be important to evaluate the specific effects to BUOW from Roundup.

Leslie asked the TAC if they had comments on the treatment plan. She noted that the subcommittee thought an adaptive management approach would be better for the three-year timeline. Rich stressed that he would like the treatment plan amended to include language detailing that AGFD will gather information on BUOW in order to assess the question about bioaccumulation. Leslie said that first, AGFD needs to coordinate with the City in order to establish what the radius around the burrows should be so Tucson Water can blade and mow around the two homes and create a firebreak. She said that until the buffelgrass greens up and the eradication treatment could begin, AGFD can begin to gather background data and Todd and Travis can finalize the seed bank monitoring plan. Rich asked who would pay for the treatment and monitoring programs. Leslie said that, since buffelgrass is a liability to Tucson Water in Avra Valley, they would be paying for the eradication efforts. However, the costs of monitoring would be done through the USFWS grant for the HCP, since dealing with buffelgrass falls in line with long-term management in the Avra Valley planning sub-area.

Ann noted that AGFD researchers would need to talk to Harold about what constitutes a safe distance to blade near a BUOW burrow. David noted that the soil substrate is relatively fragile in Avra Valley, thus heavy machinery would need to stay clear of the burrows. He suggested that perhaps someone could clear the area near the burrow with a mechanical weed-whacker. Michael suggested that a 5-meter diameter around the burrows should be avoided with heavy machinery. He said that AGFD could flag the burrow area. Rich stressed that a biological monitor should be present when Tucson Water sprays herbicides and blades just to be careful. David, Michael and Harold discussed the details of flagging the burrows and scheduling biological monitors. Leslie thanked Ann for all the work she did on the buffelgrass treatment program.

b. Parque de Santa Cruz River Development Proposal

Leslie noted that there have been a number of development proposals along the Santa Cruz River, which are all at various stages. She said that one proposal, the Parque de Santa Cruz River development, was recently approved for rezoning. She said that Pima County feels that the development plan is consistent with the restoration intent of the U.S. Army Corps of Engineers Paseo de las Iglesias Study. She said that the City is unsure how the development fits into the biological goals of the HCP; what activities would be covered in this planning sub-area in the HCP; and how the impacts would be mitigated. She noted that the main species of concern is BUOW. She said that Westland Resources has been working on the development proposal for Barclay Development Group, LLC (Barclay), and due to the presence of BUOW on the parcel, Westland Resources has also been coordinating with AGFD.

Kim said that Westland Resources has been working on the Parque de Santa Cruz River for at least 1.5 years. She distributed copies of maps showing the development project, locations of artificial BUOW burrows, and the engineering plan for how the banks of the river will be sloped. She explained that the development proposal is for 80 acres of land between Calle Santa Cruz and Interstate 19 and between Irvington and Drexel Roads. She noted that the project has two components. She said that on the southern portion of the parcel, development plans include a Harkins Theatre and other commercial entities. The City decided that the specific commercial businesses would benefit an under-served community. She noted that Barclay has been coordinating with the City and County, and

that the developer has agreed to stabilize the banks of this stretch of the Santa Cruz River (which will protect existing structures, roads, and utility lines) in exchange for gaining permission to develop the 80-acre parcel. She said that Westland Resources has been coordinating with the U.S. Army Corps of Engineers (Army Corps). She noted that the Army Corps provided initial comments, such as to leave Airport Wash uncovered, and that they have worked with the agency to develop alternatives and to do analysis.

She noted that the City expressed concern about how the development project might impact known BUOW individuals along the river. She noted that Westland Resources staff observed BUOWs on site during field surveys. She said that Westland Resources, with input from AGFD researchers, have developed an initial plan to include artificial burrows in the development proposal. Kim explained that the first concern is how to relocate the resident BUOWs, and that timing is very important. She noted that there are both resident and wintering owls along the Santa Cruz River, and that they would want to let the wintering owls move on before the resident owls were identified for relocation. She said that the second concern involves the placement of the artificial burrows. She noted that, per the agreement with the City, Barclay would be constructing a recreational trail on both sides of the river. She explained that they plan to separate the trails and the burrows, in order to minimize contact between BUOWs and humans. She explained that the plan is also to plant vegetation strategically around the burrows, but to also create a buffer between the burrows and the trail. She said that only low canopy vegetation would be planted within a 75-foot radius around the burrows. She noted that the location of the burrows would be on the slope of the riverbank. Trevor asked Kim about the level of vegetation maintenance along the burrows and riverbank, in particular what would be done when cottonwood/willows began regenerating in the area. He stressed that, he believed, the long-term restoration goal is to recreate a cottonwood/willow gallery along the river. Mike noted that the radius around the burrows is actually a small area, so it would not take much to monitor plants.

Trevor said that, while he appreciates the focus on BUOW, he is also concerned about the proposal for soil cement bank protection, because it could affect the downstream portions of the Santa Cruz River. While he appreciates the focus on BUOW, he is concerned about downstream effects. Kim said that Westland Resources and CMX engineers have been working with Marjorie Blaine (Army Corps) and the City engineer to lower the height of the bank stabilization as an alternative. Kim noted that the proposal involves creating soil cement bank protection for a low flow channel that would only contain a 10-year flood event, and would allow for overflow during intense flood events. Kim said that they are interested in working on a long-term solution, and noted that there is full soil cement downstream through the City. Frank added that, the section of the river between Ajo Highway and 29th Street, does not have cement-reinforced banks. Leslie mentioned that, because the proposed development is along a dynamic section of the river, there must be some soil cement stabilization to keep the restoration in place. Rich asked if the primary motive for the bank stabilization is for the protection of City infrastructure. Leslie noted that bank stabilization would be needed in order to make the upland developable. Rich said that he would like the project to be presented to the TAC within the entire context of the river. Leslie noted that the bank stabilization terraces would also connect portions of the Santa Cruz River Park. Leslie stressed that the City wants to work with the developer to make the area as environmentally sensitive as possible. Ann noted that, at this location along the river, the depth to groundwater is too high to support a cottonwood/willow gallery forest. Frank said that the depth to

groundwater is more than 100 feet. Ann noted that the meander pattern of the river demonstrates how much energy the river wants to dissipate in this reach and that the sinuosity for the restoration proposal should try to match the natural pattern. She said that downstream would be affected, which happens to be the last natural reach of the Santa Cruz River through the City. She noted that Pima County presumably has restoration money for the West Branch of the river. She said that if Westland Resources and the CMX engineers could work with the river principles that it would set a good precedent for future development projects.

Ann also stressed that this development project should be incorporating rainwater-harvesting designs. Ann noted that there is also a lot of work that can be done within the river channel, including invasive species removal. Ralph said that the City is looking to reduce groundwater pumping to a hydrologically sustainable rate, which could lead to a raise in the groundwater level along the river, but would rely on finding an alternative water supply source. Wally added that the groundwater level also depends on upstream water users. Ann noted that often grade control structures are placed within the river channel, which end up sequestering water and enhancing vegetation. She asked Westland Resources if it was possible to construct one in this stretch of the river. Bob said that one already existed there, and Ann then suggested incorporating it with the planned terraced riverbanks. Guy said that the bottom line is that if the large natural meander were modified, then it would change the energy of the river downstream. Trevor noted that he supports Airport Wash remaining uncovered due to the amphibian populations in the area. Kim noted that no bank stabilization is planned for Airport Wash. Leslie noted that the grade control structure in the river at the Ina Road Bridge has created more riparian habitat. Rich questioned the focus on BUOW within the project, when it might make more sense to focus on the integrity of the entire river. Michael stressed that mitigating for BUOW would not cost a lot of money, and is like "icing on the cake". He also stressed that the project also contains wintering habitat for migratory BUOWs. He noted that dispersing owls need burrows, but that vegetation around the burrows can be thick, unlike around the burrow of a resident owl.

Rich stressed his concern that this development project be careful not to alter downstream habitat. Frank noted that it is not legal to conduct an action that could cause impacts downstream, for example, increasing the sediment load. Kim said that CMX has done sediment transport modeling as part of the Clean Water Act 404 permitting process. She said that Barclay has been working with CMX and that the plan would go through the City engineers. Ann noted that approximately 50 acre-feet of water a year could be harvested from the approximately 50 acres of parking lots detailed in the development. Ann stressed concern about the timing of presenting the plan to the TAC for comment, and asked if it was too late in the process to offer input. She requested that Leslie facilitate providing an adequate amount of time for the TAC to provide comments in future development proposals. Leslie noted that this proposal has not yet been submitted to the City, so it is a preliminary proposal. She also noted that in this case, we are lucky to have this much involvement in the early stages of the plan, because many developers do not initiate dialogue with the City prior to submitting a project. Frank asked if the City, not the County, would manage this portion of the river park. Bob said that, yes, this was his understanding.

Rich mentioned that it is important to put this development in the context of the larger framework of the Santa Cruz River, because it is difficult to know how this development might impact the river. Kim said that bank stabilization is important to protect the utilities,

roads, and structures that are already there. She also noted that the idea of low soil cement bank stabilization began with the Paseo de las Iglesias project, and that the development proposal is attempting to meet the intent of the Army Corps project. She stressed that they have been engaged in discussion with various entities including the Army Corps, the City, and Pima County Flood Control District.

Rich added that the TAC has not yet discussed the Santa Cruz River planning sub-area in detail yet, and feels that he does not have all the information necessary to evaluate this development project. He said that it is not clear what the goals of the HCP are for this sub-area. Rich advocated that the TAC look at maps and updates of all ongoing development projects within the sub-area.

Ann asked Westland Resources if it is too late to change plans for the sinuosity of the river, and if it was, to obtain a document in writing stating that it was too late to make changes. Kim, Amanda, and Bob all said that there is still some flexibility at this point. Ann expressed a list of concerns, which she felt deal with the HCP. She said that she wanted to know if various elements of the plan could still be altered at this point; including plans for grade control structures, use of rainwater surface run-off from parking lots, removal of invasives in the river bed, looking at impacts downstream, and use of non-native species in the vegetation plan. She stressed that the vegetation plan should include understory, midstory and overstory elements, although she explained that vegetation directly along the river trail could be managed differently. Bob noted that the City Parks and Recreation Department would be responsible for vegetation maintenance along the trail. Frank suggested that Westland Resources provide the City a specific landscape management plan. Kim pointed out that the landscape plan does detail that vegetation near the trails will be better maintained, while the other areas would have limited maintenance. Kim noted that, since the development project is going through the CWA 404 permitting process, there would be a 30-day public comment period. She asked Kim if Westland Resources would be willing to come back to the TAC in the future to provide an update to the group. Kim agreed. Leslie suggested inviting a representative from the City Parks and Recreation Department to also provide an update at that meeting.

c. Revisions to the City's ERZ and WASH Ordinances: Addition of New Alignments

Leslie said that the Environmental Resource Zone (ERZ) and Watercourse Amenities, Safety and Habitat (WASH) ordinances have been included as a potential conservation tool in the Preliminary Draft HCP. Leslie said that new wash alignments have been proposed for both ordinances, and wanted to make sure the TAC was given an update.

Frank projected the 1998 aerial photograph of the City of Tucson and displayed the locations of the proposed new wash alignments. He said that WASH Ordinance protects the wash and 50 feet from the top of the wash; and noted that it works well for locations with entrenched watercourses that contain intense vegetation strips. The ERZ Ordinance protects the wash and habitat within the 100-year floodplain, although he noted that most vegetation is located within the 10-year floodplain. He pointed out all of the proposed new wash alignments within the City.

Leslie asked the TAC if they had any specific comments regarding the proposed alignments, and about the process itself. Rich suggested that the maps and data would

be a great tool for the TAC to use when evaluating connectivity and habitat potential in the Southlands planning sub-area. Frank noted that, while some washes within the City are small segments, washes in the southeast corridor have connectivity value because they are not fragmented. Trevor suggested that when the TAC resumes discussions on the Southlands planning sub-area, he would like to see the designated ERZ and WASH reaches overlaid on an aerial map of the area. Frank suggested that the TAC could be given a password to access the GIS database online. Leslie agreed to the suggestion, and stressed that if the TAC had any immediate concerns or comments about the specific proposed wash alignments, that they should let her know as soon as possible. Leslie said that, in the future, the TAC would need to evaluate how revising the ERZ and WASH ordinances could complement the goals of the HCP.

Trevor noted that when Mayor and Council look at the buffelgrass issue, he wants to make sure that they know that currently the U.S. Department of Agriculture is preparing to market a new strain of buffelgrass. Leslie noted that language about the buffelgrass threat was included in the introduction of the Preliminary Draft HCP.

4) Call to the Public

No members of the public spoke up.

5) Next Steps/ Future Meetings

Leslie mentioned that the Preliminary Draft HCP would be presented to Mayor and Council on March 7. She said that Council aides would be briefed on Friday morning. Leslie said that Mayor and Council would be provided copies of the Preliminary Draft HCP by February 28. She said that TAC members would be provided a pdf version of the Plan as soon as it is ready, but would likely not see copies until after March 7. She noted that the ordinance creating the new natural resource advisory committee would also be presented to Mayor and Council on March 7.

Leslie said that the next TAC meeting would focus on discussing the Santa Cruz River planning sub-area. Trevor said that he would like the City to provide maps that show the entire river within the City, property designations, and current development proposals. Leslie suggested TAC members email her if they have any further requests or suggestions.