

CITY OF TUCSON
HABITAT CONSERVATION PLAN
Technical Advisory Committee Meeting
March 22, 2005 1:00 – 4:00 pm
Arizona Game and Fish Department conference room
555 N. Greasewood Rd.

Attendees: Trevor Hare, Rich Glinski, Guy McPherson, Marit Alanen, Ann Phillips, Dennis Abbate, Linwood Smith, Cathy Blasch (Arizona Game and Fish Department), Michael Wyneken (City of Tucson – Planning), Clint Chiavarini (City of Tucson – Planning), Leslie Liberti (SWCA), Ken Kingsley (SWCA), Eileen Finnerty Rae (SAHBA)

1. Update on Recent SAC Meetings/Upcoming Meetings

Michael provided a brief update on the SAC meetings. The SAC has been meeting every two weeks over the past month. The last meeting consisted of a presentation by Catherine Balzano, Arizona State Lands Department, on the statutes governing planning and disposition of state trust lands and the draft conceptual plan developed for the Southlands. At the next SAC meeting, Tucson Development Services staff will be discussing environmental related ordinances. SAC members have also requested that, at upcoming meetings, we explore other implementation and funding options.

Trevor noted that Catherine talked to the SAC about the process of identifying areas to develop or not develop. He wanted to know how the information generated through the HCP process would feed into planning for the Southlands. Michael replied that the Arizona State Land Department (ASLD) has done a conceptual land use plan for the Southlands, however, it was never adopted because there was insufficient information available at the time. Ultimately, the ASLD conceptual plan will be the model for development in the Southlands. Michael also said that the City is still struggling with how to capture covered activities for the Southlands; they do not have a solid basis to document future impacts. Trevor asked if the HCP information could also feed into the HAMP. Michael responded that ASLD has adopted plans for the HAMP. The City had concerns over ASLD's original conceptual plan because there were no civic components, it was based on channelizing the washes, and there was only about 10 percent open space. The City worked with ASLD to develop a new conceptual plan that, among other things, increased the amount of open space to 22 percent. The City hopes that ASLD will adopt the HAMP as the conceptual plan for this area.

Marit announced that she was taking a position with USFWS and would only be with AGFD through the end of April. She introduced Cathy Blasch, who is helping Marit over the interim and will be representing AGFD at future meetings as the HCP coordinator.

2. Habitat Models Updates/Maps

Clint reprinted the potential habitat maps for the needle-spined pineapple cactus and ground snake. These maps were handed out to the TAC.

Trevor asked why the NSPC model cuts off at the HAMP. Leslie explained that the model included a mask. Without looking through the SDCP matrix, she was not sure what was masked but suspected that it might have been urban areas. Trevor asked if anyone had found NSPC within the area of the Southlands mapped as having potential

habitat. Ken said that he has not seen any west of Cienega Creek. Linwood seconded that statement.

Final potential habitat models were completed for the pygmy-owl, Tucson shovel-nosed snake, and Pale Townsend's big-eared bat. Copies of these habitat maps were provided to the TAC.

- Pygmy-owl

Leslie explained that, because of the way that the habitat areas were chosen based on visual assessment using the orthophoto, it would be too time-consuming to map potential habitat for the rest of Avra Valley. In order to show the City-owned holdings in a larger context, Leslie met with Scott Richardson to identify movement corridors through Avra Valley. There were two types of corridors shown on the map.

Trevor asked whether the City was currently planting trees in Avra Valley. Leslie said that Tucson Water was reseeding some of the former farmland with a native seed mix. Trevor asked Ann if the mix included trees. She replied that it did.

Trevor asked if the habitat outside of the City-owned properties could be mapped also to give a broader perspective. Leslie replied that this was possible, but it would be incredibly time consuming. She asked if showing an orthophoto under the habitat map would provide sufficient context. Trevor said that this would be OK as long as the map was shown at a smaller scale.

Rich pointed out that the TAC needed to consider the efforts of the Southwest – Altar Valley Conservation Alliance. Trevor added that there was also Pima County's past and proposed land acquisitions to consider, such as the King 98 Ranch. Leslie said that the City was already gathering these types of information to support the discussions on conservation strategies. Clint has already gotten GIS layers of the Pima County acquisitions and acquisition priority areas. Ann asked if the TAC could get copies of this information. Trevor was also interested in seeing how habitat in Avra Valley connected to pygmy-owl habitat along the Pinal County line.

Ann asked how areas that were not covered under the HCP addressed endangered species issues. Leslie replied that they could be covered through a Section 7 consultation.

- Burrowing owl

The potential habitat model for burrowing owl is not finished. A map showing the location of artificial burrow installations in the Tucson area was handed out.

Leslie explained that, based on input from Michael Ingraldi, potential breeding habitat was being mapped as the ridges in the Southlands. There was some difficulty in identifying the extent of the ridges, however. With the better resolution digital elevation model, it should be easier to identify the general location of ridges, but additional GIS work and fieldwork is needed.

Rich said that he was not entirely comfortable with using ridges as the potential breeding habitat for burrowing owls. Marit explained that Mike Ingraldi had visit the Southlands area and felt that the ridges were the only areas with potential for breeding habitat. Ken added that the ridges are more stable, less prone to flooding, and had denser ground squirrel populations. He said that, although the entire area was probably suitable as dispersal habitat, it made sense to high grade the habitat when planning for conservation of the species by focusing on areas of potential breeding habitat. Leslie noted that there are no records of burrowing owls breeding in the Southlands, only two records of dispersing birds. Rich asked if there was evidence of erosion on the ridges and if the ridges were covered with pebbles. Leslie replied that there was very minimal erosion. Ken said that the ridges did have a good covering of pebbles or gravel.

Rich said that he did not have any problems with the approach to modeling breeding habitat in the Southlands, just some concerns. Leslie suggested that the work on the habitat model continue as proposed and, once the results were available, the TAC could reassess whether this model made sense. She felt that there were fairly substantial areas that would be delineated as potential breeding habitat using this approach. Rich asked if the TAC really wanted to just focus on managing the highest quality habitat areas. He thought that this would result in some of the species' needs being missed, such as dispersal corridors. Ken pointed out that some of the best burrowing owl management areas could be golf courses as they had lots of open space and prey availability. Trevor noted that pesticide use could be a problem with golf courses, however.

Rich asked if the intent of the models was to show what habitat exists now. Leslie responded that this was the intent. The models would be used to quantify the extent of impacts from the proposed covered activities. Marit added that, by considering the ridges in the Southlands as breeding habitat, we are actually upgrading the status of this habitat. The quality of these areas does not really compare to where burrowing owls are actually being found in the Tucson area.

Leslie said that the considerations that went into the selection of potential burrowing owl breeding habitat would be discussed in the species account, so the TAC would have a clear understanding of how the areas were chosen.

Rich noted that the limiting factor for this species is food. He said that the TAC should keep in mind that the past few years have been bad food years. He also felt that the delineated ridges represented the minimum area for burrowing owls and the TAC also needed to consider food availability and habitat linkages.

- Tucson shovel-nosed snake

Leslie explained the variables that were included in the Tucson shovel-nosed snake potential habitat model. Soils and elevation were rated based on high to no suitability (3 to 0) and areas were also classified based on whether or not they have previously been cultivated. The combination of these 3 variable results in 12 different suitability classes of shovel-nosed snake habitat. Leslie worked with Phil to develop a means of condensing these twelve habitat classes into a smaller number, ideally high, moderate, and low potential habitat.

According to Phil, soil takes precedence over other factors. If the soil is moderate to high suitability, then the area has relatively high potential for shovel-nosed snake. Soil conditions are degraded by cultivation, however. Although there is potential for agricultural lands to be restored naturally over time, it is unknown how long that process would take. It is also unknown what should be done to restore such lands intentionally. As a result, lands that have been farmed are considered as high or low restoration potential, depending on the underlying soil type. The resulting classification is high, moderate, and low suitability ratings possible for land that has not been cultivated, and high or low restoration potential ratings possible for retired agricultural lands.

Rich asked if Phil has ever visited the Avra Valley lands. Leslie replied that he had not done so as part of the City HCP process. This model is a refinement of the one he developed for the Marana HCP, which was based on documented locations of shovel-nosed snakes in northern Avra Valley. Phil looked at the habitat map that resulted from the model, and was comfortable that it worked as well for the City as it did for Marana. The only difference between the City and Marana models is that the Tucson model accounts for the past land use of the City-owned properties by incorporating the information from the state on which properties have been irrigated (and farmed) in the past.

Ken asked if the model considered flooding. Trevor asked if flooding was really a threat; wouldn't the snake simply disperse during a flood. Ken was not sure that snakes could disperse or would have some place to disperse to if their habitat was flooded. He noted that the 1983 and 1993 floods produced a lake in Avra Valley and information like this could be used to fine tune the model.

Rich and Trevor wanted to know if Phil Rosen would be doing snake surveys this summer. Leslie responded that he would not be doing surveys for Marana. Marit noted that the cover boards that Phil put out during last years' surveys were still there, but they hadn't been checked.

Trevor asked if the CAP canal could be added to the shovel-nosed snake habitat map.

- Pale Townsend's big-eared bat

Leslie said that the potential habitat map had been refined based on input from the TAC at the last meeting. The habitat shown now included semi-desert grassland, as well as Arizona Upland habitat. The 'irrigated lands' layer was also used to refine this model by removing lands in Avra Valley that had been cultivated and no longer had native vegetation. She asked if the group was comfortable with the resulting map. Linwood replied that he was comfortable.

- Pima pineapple cactus

The PPC habitat was being modeled as all upland habitat in the Southlands; this model will be developed by masking out all riparian habitat in the area. At the last TAC meeting, 2 different riparian vegetation layers were identified: the Harris riparian map and the SDCP composite vegetation map. After some discussion of the merits of these two layers, Mima offered to go out to the Southlands to determine which layer seemed a better predictor of what was not suitable PPC habitat.

Clint identified the areas that were mapped as riparian in Harris, but were not mapped as riparian in the SDCP layer. He also provided coordinates of random points within the larger of these areas. Mima and Leslie visited these random locations to assess whether or not the area was suitable for PPC. Mima felt that large portions of the “non-overlap” areas were not suitable, but some parts were suitable for PPC. She offered to go over the orthophotos and identify any areas that were mapped as riparian, but were actually suitable PPC habitat, and also any areas that were not mapped as riparian, but were not suitable for PPC. These areas would then be added back to or removed from the suitable habitat map, respectively.

3. Southlands Impact Assessment

Michael explained that the City had not yet determined how to capture future development in the Southlands. He talked a little about the suitability analysis done by the State Land Department for the Southlands. That analysis considered 26 different layers of data. He noted that the Department was concerned about the progression of development along the Houghton Road corridor and in the Swan Southlands.

Leslie added that the Department’s dispositions are no longer application-driven, but were determined by a 5-year disposition plan. Ken pointed out that Catherine Balzano expressed concern over leapfrog development. Michael said that another difficulty with identifying areas to preserve as open space is that each parcel of trust land has a beneficiary. Development density transfers have to account for the beneficiaries. Leslie noted that the Department does not get money from the sale of recreation permits; this money goes into the state general fund.

4. Biological Goals/Objectives: General threats and stressors

Leslie explained that USFWS wanted to see that the conservation programs in HCPs were developed based on biological goals and objectives. She suggested that the best approach to identifying these goals and objectives was to start by identifying the stressors and threats that impacted each species.

Leslie tentatively identified 6 general categories of stressors and threats as a way to jump-start the discussion: habitat loss, habitat degradation, species characteristics, interactions with other species, anthropogenic factors, and connectivity or other large-scale concerns. The specific stressors and threats identified by the TAC were:

HABITAT LOSS

- breeding
- dispersal
- foraging
- plant locations
- wintering
- fire threat
- diurnal preferences
 - temporary day-time
 - long-term day
 - night

CONNECTIVITY

- fragmentation
- barriers (roads, etc)
- traffic volumes
- wash incision
- corridors width
- habitat patchiness
- riparian/upland connection
- road crossings

OTHER

- road kill

HABITAT ALTERATION

- prey
- water
 - drought
 - flood
 - groundwater depletion
 - root zone water loss
 - quality
 - turbidity
 - salinity
 - increased/decreased runoff
 - conductivity
 - sheetflow disruption
 - heavy metals
 - dissolved oxygen
 - effluent
 - flow rate
 - artificial water sources
 - infiltration
- nest sites (cavities)
- fragmentation
- invasives
 - plants
 - animals
- habitat rehab potential (habitat)
- edge effects
- fire threat
- contaminants
- roads
 - dust
 - erosion
 - surface water diversion/ponding
 - asphalt/contaminants
- nutrient enrichment (water)
- land use history
- vegetation composition/density

INTERSPECIFIC FACTORS

- predation
- disease
- pollinators/dispersers
- competition
- domestic/feral animals

SPECIES CHARACTERISTICS

- dispersal mechanism
- behavior traits (movement)
 - road width
 - vegetation next to roads

- colonization potential
- low population numbers
 - effective
 - total
- fecundity (low)
- knowledge/data on species
- seasonal specialization
- captive breeding potential (translocation potential)
- genetic variability
 - isolation
 - inbreeding
- diurnal specialization
- off-site mortality potential
 - migratory
 - surrounding land uses
- diet breadth (also other resources)
- sensitivity to direct disturbance
- adaptability
- charisma

ANTHROPOGENIC FACTORS

- edge effect
- disease
- fire threat
- ORVs
 - dust
 - erosion
 - noise
- mining
- recreation (passive)
- grazing
 - vegetation impacts
 - soil impacts
- collection/hunting
- pesticides
 - herbicides
 - insecticides
- direct take/mortality
- noise
- light
- movement
- landscaping
- invasives
 - domestic
 - feral animals
- dumping
- undocumented immigrants

Leslie said that she would send out this list of stressors and threats to the TAC by the end of the day. She asked if the group would review the list and send any additions or changes via email by the end of the week. Leslie would incorporate these changes and re-send the matrix to the TAC by the following Monday. The TAC would then have two weeks to fill in the matrix for each of the HCP target species so that species-specific stressors/threats could be discussed at the next meeting.

5. Call to the public

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

6. Next steps/Future meetings

The next TAC meeting is scheduled for May 3, 1-4pm, at the Game and Fish offices.

Trevor noted that a herpetologist he knew had recommended that the TAC consider the Mexican spadefoot toad as a species that occurs within the planning area, but is not likely to be listed in the near future. Trevor wasn't sure why the recommendation was made, but he would look into it.