

HABITAT CONSERVATION TECHNICAL COMMITTEE

for the Washington County Habitat Conservation Plan (HCP)

A regular meeting of the Habitat Conservation Technical Committee (TC) was held in the conference room of the Washington County Administration Building, **May 1, 2014.**

Members present were:

Nathan Brown, Chairman	U.S. Fish and Wildlife Service (USFWS)
Kristen Comella, Vice Chairman	Snow Canyon State Park (SCSP)
Ann McLuckie	Utah Division of Wildlife Resources (UDWR)
Tim Croissant	Bureau of Land Management (BLM)
Cameron Rognan	Washington County HCP

Absent and excused:

Gary McKell	Local Biologist
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Also present were:

Bob Sandberg	Washington County HCP Administrator
Amber Stocks	Washington County HCP Recorder
Jodi Borgeson	Washington County Attorney's Office
Mike Small	Citizen
Nick Lang	Citizen

1. CALL TO ORDER

Chairman Nathan Brown noted a quorum existed and called the meeting to order at 2:00 P.M.

2. APPROVAL OF MINUTES

a. April 10, 2014

Page 4, paragraph 1, sentences 6 and 7: changed,

From: "The Park ~~will~~ have seasonal deputies on weekends ~~and~~ during peak seasons. Over the next year Jordan will assess ~~human impacts~~ in the Park."

To: "The Park hopes to have seasonal deputies on weekends during peak seasons. Over the next year Jordan will assess trail conditions in the Park."

Page 4, paragraph 3, sentence 1: changed,

From: "Kristen further reported SCSP is working on getting approval for ~~another~~ sewage dump site at the campground."

To: "Kristen further reported SCSP is working on getting approval for a replacement sewage dump site at the campground."

MOTION by Cameron Rognan to approve the minutes as amended.
Seconded by Kristen Comella.
Discussion: None.
Vote was taken: All voted aye.
Motion passed.

3. **GENERAL BUSINESS**

a. **Report on April law enforcement meeting**

There was a fieldtrip in April to the T-Bone trail with different law enforcement agencies. The TC talked about the fieldtrip, noting that personnel in attendance came from the UDWR, BLM, SCSP, USFWS, and the HCP. Although the St. George police department and the County Sheriff usually make it to law enforcement meetings they were unable to attend this one. During the fieldtrip, discussions occurred about off-trail use, illegal trails and dogs off leash. Tortoise scat, burrows and other tortoise signs were pointed out for law enforcement to be aware of.

b. **Discussion on the Winchester trail and location of trail connectors**

Bob Sandberg informed the TC that although representatives from the BLM couldn't attend this meeting, they would prefer to give their input on this topic before any decisions are made. The Winchester North and South trailheads are not currently available to the public as there isn't legal public access. The Ledges developers seem flexible in accommodating public access to the Winchester South trail. The St. George master plan and the developer's plan both show a road that will be put in south of the existing golf course and will run east, to the equestrian center.

St. George City, the Back Country Horsemen and different property owners have discussed with Bob the existing stepover at Winchester South which is dangerous for horseback riders due to its slope. Bob asked what can be done to provide legal public access to the existing trailhead or if there is a possibility to move it south along the fence line. Bob added the existing map shows a connector trail between Lange's Dugway and the Winchester trail. This trail isn't shown on the new draft map and it's unknown what the BLM wants to do with it. Bob explained more of the terrain and the power line that runs along the trail. The BLM is working on their travel plan and they haven't consulted with the HCP on any changes they are planning to make.

Kristen asked if there is a time sensitive nature to this besides printing a new map. Cameron stated the developers would like to know what is going to be done so they can plan accordingly. The TC talked about how the BLM will need to address this issue.

Nick Lang questioned how the TC functions. The TC explained that they make biological recommendations based on impacts inside the Red Cliffs Desert Reserve. The BLM is responsible for managing the property at Winchester Hills and any consultation regarding the property goes through the FWS. Nick asked when the

current HCP permit will expire. The TC answered 2016 and further explained that the County Commissioners are in the process of applying to renew the existing permit through the FWS. The FWS will have a 30 day comment period when they are about to renew the permit and any public comment will go through the County Commissioners. This TC board is organized under the current HCP permit and does not automatically renew without the public's input during the 30 day comment period. Chairman Brown explained that if the permit is not renewed then development on tortoise habitat in Washington County would cease on all property, including private property. Nick is in favor of modifications that would make access to trails easier for the public.

The TC requested that Dave Kiel from the BLM comes to a TC meeting to provide an update of their trail planning efforts.

c. DWR's tortoise monitoring report – Ann McLuckie

Ann McLuckie reported on the status of Mojave desert tortoises in the Red Cliffs Desert Reserve and used exhibit 3-c-1 to show details of her report. She thanked the DWR field workers for their work and the Washington County HCP and the Endangered Species Mitigation Funds for their funding.

Ann explained that desert tortoises are distributed throughout southern California, southern Nevada, southern Utah, western Arizona and Mexico. In Utah, the tortoises are at the north-eastern extent of their range. She stated there are two species of desert tortoises; the Agassiz's desert tortoise (Mojave desert tortoise) is primarily north and west of the Colorado River and the Morafka's desert tortoise (Sonoran desert tortoise) is east of the river. In 1990 the Mojave desert tortoise was federally listed as an endangered species and at that time there was explosive growth in Washington County. To resolve conflicts, a Habitat Conservation Plan was created, which included the 62,000 acre reserve. The plan permitted incidental take of 1,169 tortoises, development of 12,264 acres of tortoise habitat and 31,282 acres of potential tortoise habitat. Although the DWR monitors tortoises in zones 2, 3 and 5, they primarily monitor zone 3 which is the largest contiguous block of tortoise habitat.

In 2009 the Washington County Lands Bill was passed and in 2012 Ken Salazar dedicated the National Conservation Area (NCA). Across the Mojave Desert there are six recovery units. The Upper Virgin River Recovery Unit, which includes the Red Cliffs Desert Reserve, represents only 1% of all the recovery units. The small size was justified based on a high relative density of tortoises, a high quality of habitat, and high precipitation (compared to other recovery units). Intensive management is required to maintain tortoises in perpetuity.

In 1997 the DWR ran a pilot study monitoring tortoises in the Reserve. 1998 was the first year of full-scale monitoring in zone three. In 1999 zones two and five were added to the monitoring efforts. After 2001 the DWR began monitoring every other year through 2013. Their monitoring consisted of 2 km transects with slopes less than 45

degrees. Although the Reserve is 62,000 acres, only about 38,000 acres is considered tortoise habitat. The majority of habitat is in the southern portion of the Reserve.

A technique called “distance sampling” is used which looks at regional tortoise densities throughout the Reserve. This technique randomly locates 150 different two km transects in tortoise habitat. The DWR walks the transect line as well as the ten meters on each side of the line to look for tortoises. These transect squares have the same starting and ending point.

In 1999 there were 28 tortoises observed per square kilometer which stayed consistent through 2001. The dramatic population drop in 2003 came after a drought; the tortoises with Upper Respiratory Tract Disease (URTD) became more vulnerable and are probably the ones that died off first. The drop in 2007 came after the devastating wildfires of 2005. By 2013 there were 16 tortoises observed per square kilometer. These estimates are for adult tortoises with a carapace size greater than 180 mm, and do not include juveniles as they are difficult to observe.

The group talked about the population decline and how the population seems stable 2007-2013. Ann explained that the DWR uses 95% confidence intervals in their graphing. When a confidence interval doesn't overlap with another confidence interval that's when we know there is a real decline. Across the range of the desert tortoise, all recovery units have a decline with exception of the Northeastern Mojave recovery unit. The graph for the Northwestern Mojave recovery unit starts at nearly zero tortoises observed while others start higher.

The TC discussed distance sampling throughout all recovery units. The analysis, assumptions and techniques are the same throughout all recovery units but the methods are slightly different since other units are much larger and the distance to walk is much further. Cameron Rognan asked if other units repeat the same transects yearly. Ann answered that from a large pool of permanent transects, a portion of those transects are monitored yearly due to funding limitations. Our recovery unit monitors full transects every other year.

The desert tortoise recovery plan identifies actions for each recovery unit including: maintaining self-sustaining populations, maintaining well distributed populations, protecting habitat and assessing a suite of demographic measures such as density, abundance, mortality, occupancy, etc. Occupancy is the proportion of an area or patch that is occupied by a tortoise.

The DWR observed that transect patches have been consistently occupied by the same tortoises throughout the study period, particularly in zone three which has the largest contiguous habitat in the Reserve. Occupancy in zone two has increased with minimal mortality and has a diverse vegetation structure without much URTD. Zone two has more steep canyons which may impede tortoises from traveling to different patches.

Ann reported on tortoise mortality data using anecdotal information. The DWR has noticed a decrease in mortality over the years along fenced roadsides. Although fences reduce mortality, they don't eliminate it. It was explained that before property owners develop their property on tortoise habitat, the County and the DWR remove the tortoises and place them in zone four. Over 450 tortoises have been successfully translocated to zone four. The high density areas in zone four are near Babylon Road.

Cameron mentioned the DWR records when hatchlings or juveniles are encountered but they aren't recorded in the analysis. Cameron felt it would be helpful to create a separate analysis with all ages of tortoises and compare it with early years to see if recruitment (numbers of tortoises born and added to the population) is impacted. Chairman Brown added that although there was a large die-off of tortoises, the Reserve remains completely occupied and tortoises of all ages are observed. Ann added the DWR looks at the demographic structure each year to see if there's a drift in the average carapace length and this recovery unit hasn't seen a drift. She stated that the big mortality events have affected the population across the board, not just one age group or one age class.

Cameron stated that 24 juvenile tortoises (smaller than 180mm) were observed in 2013. After ten years of data there starts to be a trend. He asked if there is an idea with how it compares to previous years. One of the assumptions of the technique (all animals on the line are detected) is violated when analyzing juveniles.

When the DWR monitors again in 2015, Cameron doesn't feel there is much benefit for the DWR to spend time in the northeast section of zone four which has been burned, is high in elevation and we're pretty sure there aren't any tortoises. Ann replied that Little Purgatory has been excluded from monitoring efforts and the DWR wants to include the other areas of zone four. The densities calculated across zone four, which is the translocation area, are very high.

Cameron noted that in zone four the DWR found three out of 15 tortoises which showed clinical signs for URTD. This is high compared to the other areas of the Reserve. It appears that zone four is a little more disease stricken area. In terms of translocation, one of the main guidelines is to translocate to sites that are as disease free as possible. If there are other translocation areas with less disease, Cameron felt it would be good to translocate there.

Chairman Brown agreed that tortoises can't continue to be put in zone four; they need to start being placed elsewhere. Ann also agreed zone four is filling up but added there are some areas further away from Babylon Road that are still okay for translocation. Bob Sandberg stated the translocated tortoises have been placed in areas of better habitat. Although there are areas which may still be okay, there is a lot of zone four that is not good habitat.

The group went back and discussed the trend line on pages 15-17 of exhibit 3-a-1. Ann explained that when distance sampling began, the DWR looked at years in which the

methods were similar. The source of fire ignition has shown more man-caused fires than in the past because there are more roads and more accessibility for people to travel. There is also more cheat grass which is an easy fire starter along roadways. Chairman Brown mentioned he has viewed the southern Utah fire report from the forest service; it showed most fires are from lightening strikes. Ann continued, in 2005 man-made fires burned about 800 acres but the biggest fires were lightening caused.

Cameron looked at the DWR's monitoring study and commented that in 2013 the sex ratio was significantly biased towards females. In 2011 it was more biased towards males. Cameron noted that the significant gender bias has often changed in different monitoring years and asked how the DWR is getting alternating results. When data is statistically significant it means that something is going on, that it's not random. Ann responded that even though there may be more males one year than females, it could be that on a drought year the females stay in their burrows more often than the males who are wandering around. It could also be that females who are carrying eggs spend more time in a burrow and are more sedentary. Ann stated that if the gender bias remains the same several years in a row then that would be a red flag. When analyzed by year, small sample size and dichotomous data would impact the gender pattern.

Chairman Brown stated that the tortoises observed are the ones found on the transect lines. Every time the transect is walked, the sample is different and the sex ratio is probably close to 50/50. Ann added there would be a red flag if there were many years in a row with the same significantly biased gender pattern. Cameron disagreed, stating that more confidence would be given to the results if the pattern was the same. Cameron added that we're not getting the same results year after year, we're getting different results. Ann replied that most years the DWR sees no significant gender difference. The significance level is set at 0.05, meaning there's a 5% chance to get a significant result. Cameron added it seems strange to have a significant event three out of ten years. Statistically in a 100 year period it should only happen five times, plus the gender keeps changing on those significant years.

The group talked about different comparisons that could be made in the data. They also discussed how different genders observed could be temperature driven or something else. They felt it would be interesting to compare the temperatures when the observations are made. Chairman Brown stated that we have 14 years of data showing our recruitment coming in and going out; something must be working out there because the population is stable.

Cameron asked about the g_0 score. He noticed that the score often correlates with tortoise density. In years when density is low, the g_0 score is also low. This data gives the idea that because fewer tortoises are detectable or found, the density must also be lower. How much of an influence does the g_0 have on the end density estimate results? Ann explained that 92% of the data's variance is due to an encounter rate. In 2013 almost 6% of the variance was due to a probability of detecting a tortoise and 2% was due to a g_0 . Every time an analysis is done it re-analyzes the data's variance in how the components are related. Cameron asked how it compares to other recovery units. Ann

replied our encounter rate variance is higher and the g_0 is lower. Cameron reiterated that in years when there is a high encounter rate there are also higher densities.

Cameron stated that 2013 had some really cold days during the sampling period. He asked if the DWR re-sampled because of the cold. Ann replied that sampling wasn't done when days were really cold. The DWR redid some of the sampling but there was too much area to redo everything. Cameron asked if sampling is still done on days when radioed tortoises are all underground. Ann reported there has never been a day during the sampling period where all radioed tortoises are in their burrows, there have always been some visible.

The TC talked about the permit renewal and if there will be a modification to the current monitoring method. They discussed the similarities and differences between the recovery units and the terrain. The Upper Virgin River Recovery Unit is much smaller than the rest and has less mileage to be walked. The approach here is different as the others don't zig-zag when walking along transects and their detection curve has no shoulder on it. Ann stated the same methods are used throughout all units; however, the assumptions are customized to each unit. Kristen added that the permit renewal doesn't hinge on what is happening in other recovery units.

Cameron asked again if we are going to keep doing our own thing or are we going to do what other units do and walk a straight line? Ann replied that she's working with another researcher to co-author a paper, presenting trends of Mojave tortoises. Our unit monitors within ten meters of each side of the transect line and other units don't monitor off the transect line. Cameron noted that we have 20 meters wider visibility than they do. Ann explained the DWR determines where the outliers are and truncate the data. Cameron said the truncation values are dramatically different in Ann's group which walks 20 m off the transect line.

Ann explained the other units are not leaving their transect line because their scale is so big and to encounter enough tortoises they have to cover more ground which is why they increase the number of kilometers walked. If they walk less distance and leave the line it becomes more of a risk because more tortoise observations may be truncated from the analysis. Since it takes so much time to get to one of their isolated transects, they want to walk more than two kilometers. Chairman Brown calculated that Ann's group is covering more ground than other units, getting 40,000/square kilometers instead of 24,000 (2 meters * 12,000). Ann's per unit effort covers more ground.

Ann explained that statisticians have suggested that the DWR walk the same transects with each monitoring year to reduce variability. When you minimize the variability of the data, any variability that is left over is not due to sampling, it's the real variability. Cameron stated there is still going to be a sampling bias by going to the same transects year after year. Ann disagreed because they are randomly selected. As a possible example of bias, Cameron felt that if a tortoise uses two habitat patches that are of equal value and if the tortoise comes in contact with a predator (DWR – who files them), then it's going to stay on the second patch as it associates the first patch as an

unpleasant place. If the DWR keeps monitoring in the same places, some tortoises may figure out not to go there. Tortoises could start to alter their behavior.

Cameron stated there are places in the Reserve that have never been sampled because the DWR monitors the same transects year after year. Those un-sampled areas could have a different density which could be discovered if sampled. He felt the transects should be randomized each year. Cameron asked if there would be a greater confidence in the density estimates if new random samples were monitored each time or if we monitored just a sub-portion of a larger pool of permanent transects.

Ann explained that a random number generator located all the northeast corners of the transects. Statisticians told the DWR to use the same transects every time the Reserve is monitored to decrease potential variability. It's also a lot easier to use the same transects because there are notes on each transect which tell how to get there, what to do, etc. The notes help take away excuses and the data can be used for occupancy statistics. Ann continued, this monitoring study is going through a peer review process with a desert tortoise science advisory committee which has looked at the monitoring methods. It wouldn't be good to have a study that is isolated from any peer review. We want to have scientists who will comment on our monitoring efforts so we can incorporate the issues.

The group talked about supplementing random plots on off years. Kristen stated there are many things that could cause a tortoise to alter their behavior like fire, being filed by the DWR, etc. There isn't anything that says the DWR isn't getting good, sound data and there are other things to focus on right now like fire prevention.

Cameron asked if it's worth consideration to sample the full recovery unit instead of just the Reserve. If other areas were sampled we might see a density which is increasing. Kristen asked what would be gained by sampling outside of the Reserve. Chairman Brown stated he would like to save tortoises from the northern corridor. On the southern corridor ten tortoises of multiple age classes were lost in 100 acres and he doesn't want that to happen again. Funding needs to be obtained to get a better idea of where tortoises are out there. Chairman Brown doesn't feel it's worthwhile to look at trends in other units, he wants to monitor this unit and map where the tortoises are at.

HCP funds are currently used for monitoring only inside the Red Cliffs Desert Reserve. Cameron suggested that as the permit is renewed, we should change it to monitor within the whole recovery unit to find out what's out there. Chairman Brown said there is a precedence set for HCP's to fund recovery work throughout the recovery unit that it's in, but it doesn't have to. Cameron added that funding through the HCP is covered under potential habitat and take areas. Ann said the goal in the HCP is to maintain stable or increasing populations of tortoises and that's why we're monitoring. Cameron remarked we don't know if the population is stable or increasing in the rest of the recovery unit because it hasn't been monitored. Chairman Brown stated this is a RIT issue. Even though members of the TC are part of the RIT, this is not a RIT meeting. Cameron finished, we shouldn't discount that tortoises could be recovering and

improving throughout the unit and we don't know about it. The rest of the recovery unit hasn't dealt with the large fires that we've had in the Reserve.

4. OTHER REPORTS FROM TC MEMBERS AND REQUESTS FOR FUTURE AGENDA ITEMS

Kristen asked when SUU is planning on coming for human impact monitoring. Cameron responded they will come in the fall.

Kristen asked about the fencing status in The Ledges development with the new houses that are being built on the western side of the development. The development still has temporary fencing and Kristen wondered when they will get permanent fencing. Cameron will check on it.

5. NEXT MEETING DATES

a. **June 12, 2014**

6. ADJOURN

MOTION by Cameron Rognan to adjourn.
Seconded by Ann McLuckie.
Discussion: None.
Vote was taken: All voted aye.
Motion passed.

The meeting was adjourned at 3:45 PM.
 Minutes prepared by Amber Stocks.