
Tortoise Tracks

The Desert Tortoise Preserve Committee, Inc.

Summer 1999 19:2



Mohave ground squirrel, sporting a radio-tagged collar
Photograph by Dr. Phil Leitner, Saint Mary's College

THE MYSTERIOUS MOHAVE GROUND SQUIRREL BY PHIL LEITNER

One of the more remarkable denizens of the California desert is a small brown ground squirrel. About 9 inches from nose to tip of tail, the Mohave ground squirrel (*Spermophilus mohavensis*) is found only in the western Mojave Desert. Their sophisticated desert survival skills allow them to avoid the extremes of the hostile climate. Hard to find and even more difficult to observe and study, these rare and elusive little rodents have baffled biologists over the years. Now, new efforts are underway to discover their habitat requirements and determine their conservation status.

We do know that Mohave ground squirrels are active only in the spring and summer, when they feed eagerly on the leaves and seeds of native shrubs and annual plants.

As the desert dries out in June and July, they fatten in preparation for a long period of dormancy. By midsummer they curl up in their underground nests and allow body temperature, heart rate, and metabolism to fall drastically. In this physiological state, they can survive on stored body fat until the winter rains bring a new flush of green vegetation.

Mohave ground squirrels begin to emerge from their burrows in February, when the males may travel up to a mile per day in search of mates. The success of these amorous excursions becomes evident by the end of March, when litters of 6-9 young are born. The babies grow quickly and are weaned by early May. In just a few weeks, they are ready to set off in search of their own patch of

desert. Young Mohave ground squirrels disperse in late May and early June. Often they move in next door to their mother's home range, but some, especially the young males, can move up to four miles before settling down.

In the Mojave Desert, it is not unusual for the winter rains to fail, creating hard times for all desert wildlife. Mohave ground squirrels have their own approach to coping with drought. If the total winter rainfall is under three inches, they simply don't reproduce. All available forage is converted to body fat and they can enter dormancy as early as April. Better to try again next year than to give birth to young who probably won't survive and jeopardize your own chances of putting on enough fat to make it through dormancy. As a result, Mohave ground squirrel numbers decline precipitously after a low rainfall year and two successive years of drought can lead to the extinction of local populations. After a couple of good years, dispersing young may recolonize these areas.

The Mohave ground squirrel has long been listed as Threatened under the California Endangered Species Act. In spite of its protected status, little is known of its habitat needs or even where it still occurs. In many areas within its historic range, there are no recent records. This information is essential to the development of a conservation strategy for the species. The Desert Tortoise Preserve Committee is currently taking the lead in a new research effort, with funding from the California Energy Commission. Field studies began this spring in the Desert Tortoise Research Natural Area, the Pilot Knob Grazing Allotment, and the Kramer Hills to locate populations for long-term ecological study. Much more work will be needed to clear up the mysteries surrounding the Mohave ground squirrel and to assure it a secure future in the Mojave Desert ecosystem.

DESERT TORTOISE PRESERVE COMMITTEE GETS NEW EXECUTIVE DIRECTOR

In early March, the Board of Trustees appointed Michael J. Connor to be the new Executive Director of the Desert Tortoise Preserve Committee. The position became vacant following the retirement of Jim Anderson earlier this year.

Mike is familiar to many Desert Tortoise Preserve Committee members through his long service with the California Turtle and Tortoise Club, his work on tortoise conservation and education issues, and his previous work with the Committee. In September 1998, he established the Committee's internet site and since then has served as DTPC webmaster.

"These are challenging times for the wild desert tortoise, and I am excited to be working with the Committee to help secure a future for the species," Mike said. "Despite being listed under the Endangered Species Act almost 10 years ago, large sections of critical habitat remain unprotected and in some areas tortoise populations are continuing to crash. The Federal government has yet to produce even a "draft" management plan for the wildlife management areas that were proposed for the West Mojave in the 1994 Tortoise Recovery Plan. There, outside the areas that are being managed by the Committee, tortoise critical habitat continues to be degraded by government-subsidized cattle grazing, by development, and now by the threat of tanks. Ongoing efforts to save tortoise habitat by nonprofit organizations like the Desert Tortoise Preserve Committee are now more essential than ever."



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The Desert Tortoise Preserve Committee, Inc.

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NATIONAL TRAINING CENTER, FORT IRWIN PROPOSES TO DESTROY DESERT TORTOISE CRITICAL HABITAT

The Army is floating yet another proposal to expand its National Training Center, Fort Irwin. This time they plan to expand southwest directly into the Superior-Cronese Desert Wildlife Management Area. The Superior-Cronese DWMA is designated Critical Habitat for the desert tortoise and is essential for the species' survival in the western Mojave Desert. Please feel free to use these briefing points in your letters should the opportunity arise for public comment.

- April 16, 1999 Army announced a plan for a massive southwest expansion of the National Training Center, Fort Irwin (NTC) directly into designated Desert Tortoise Critical Habitat.
- The expansion violates the April 2, 1990 USFWS listing that the Mojave population of the Desert Tortoises is a threatened species.
- The expansion involves major destruction of Critical Habitat designated in the February 8, 1994 *Determination of Critical Habitat for the Mojave Population of the Desert Tortoise* (50 CFR Part 17).
- The expansion threatens to wreck the October 30, 1994 *Desert Tortoise Recovery Plan*.
- The 1999 proposed NTC expansion would effectively destroy the Superior-Cronese Desert Wildlife Management Area (DWMA).
- **Why is the Superior-Cronese DWMA so important to the tortoise?**
 - Tortoises persist in some numbers in the Superior Valley because it is remote and is one of the least disturbed areas of the Western Mojave Desert. It includes the largest region of contiguous public sections of any DWMA.
 - According to the 1998 Tortoise Sign surveys conducted for the WMCMP, the Superior Valley holds some of the highest density tortoise populations left in the West Mojave Desert.
 - The Superior-Cronese DWMA is the only DWMA in California that is likely to support the Recovery Plan target of 10 female tortoises per square mile.
 - The Superior-Cronese DWMA serves as a bridge between the East and West Mojave tortoise populations.
 - Elimination of the Superior-Cronese DWMA would accelerate the extirpation of the Desert Tortoise from the West Mojave.
- No amount of research or mitigation could replace this Critical Habitat.
- September 9, 1991 USFWS published *Draft Jeopardy Biological Opinion On the Proposed Expansion of the National Training Center at Fort Irwin, California* (1-6-91-F-41). They recommended that any expansion occur to the east.
- 1991 Draft Jeopardy Biological Opinion reported that 50% of the desert tortoises still found on the Fort Irwin lands occur in the southwestern area where training activity has been constrained. These constrained areas would be opened up and disturbed if the proposed NTC expansion occurs leading to further loss in habitat and an increased take of tortoises.
- What has changed since 1991? The Desert Tortoise has continued to decline. If the Army is allowed to circumvent the Endangered Species Act and railroad this expansion through, the loss of Critical Habitat will accelerate the extinction of this key species and an animal much liked by the general public.
- The 1999 proposed NTC expansion would effectively rewrite the DWMA's and drastically increase the expense of recovery. Taxpayers will be left to pay for this in perpetuity!
- February 26, 1999 GAO issues report "Military Readiness, Full Training Benefits From Army's Combat Training Centers Are Not Being Realized."
- The proposed NTC expansion configuration is designed to allow entrance into China Lake.
- Army launched this current project without consultation with BLM or USFWS and seems to be trying to bypass public input.
- There is concern that a rider will be attached to some extraneous Congressional bill to allow the proposed expansion without the required NEPA and CEQA review processes.
- Please be prepared to write to your elected representatives in the House and the Senate should the need arise.

For updated information visit
<http://www.tortoise.org/wmp/ftirwin.html>

NEWS FROM THE FIELD

FIFTEEN GATHER FOR ANNUAL SPRING WORK PARTY

By Laura Stockton and Karen Spangenberg

On Saturday, March 20, volunteers met at the DTNA Interpretive Center for task assignments. Seven members of Desert Survivors including Mark Batchelor, David Book, Claudia Davison, Connie Diernisse, David McMullen, Deirdre Puleo, Loretta Scott traveled from as far as the San Francisco Bay Area. Local desert residents Chuck Hemingway and Cathi Jones are frequent volunteers for the Committee and the BLM. Bureau of Land Management representatives included Bob Parker and Joyce Schlachter and Desert Tortoise Preserve Committee representatives were Bob and Letty Brooks, Michael Connor and Laura Stockton.

Prior to the work party Chuck Hemingway checked the perimeter area and fence where there is the heaviest public use of the area. Chuck's survey indicated that very little trash has been left since the Fall 1998 work party, which is encouraging. Three fence crews focused on repairing minor fence breaks, replacing signs and reattaching raven perch prevention materials along 23 miles of the perimeter fence. Since there was little winter rainfall, the interpretive center required little trail clearing. Some of the evidence of the ravens and other birds that perch in the kiosk was removed from and below the interpretive panels.

Later that afternoon, the work party traveled by caravan to the ranch complex at Blackwater Well. The Committee's newly installed Executive Director, Michael Connor, represented DTPC at Pilot Knob. It was his first visit to the area. The work party was joined around the campfire by researcher Dr. John Harris of Mills College and several of his students who were camping out at Pilot Knob running trapping grids at three sites in the area for Mohave ground squirrels.

The following day, Host/Interpreter, Sterling Kendrick, arrived and as did Chuck Tyler, representing himself and the 18 employees of Tyler Lighting, visiting the Blackwater Well ranch complex

to evaluate the cabin as a candidate for the BLM's Adopt-A-Cabin Program. Sterling gave Chuck a thorough tour of the allotment while the Desert Survivors spent Sunday morning surveying (inventorying) routes off the Grass Valley Wilderness corridor road within Pilot Knob Allotment.

The survey information will be used by Dave Wash, Lead Outdoor Recreation Planner at the BLM Ridgecrest Area office, to prioritize route rehabilitation and restoration plans for the year 2000. "Roads" or "routes" (identified from aerial photographs) were classified by the work party as single-track trails, two-track trails, unimproved dirt, graded dirt or washes; were inventoried by width of disturbance at road head; length from road head intersection to where route disappears from view; type of road; existing signage; evidence of recent trespass; and were photographed. Illegal routes may be rehabilitated by one of several restoration treatments from mechanical ripping to revegetation as recommended by the BLM's staff.

After a morning of survey work, the Desert Survivors took a short uphill hike to enjoy a fabulous and expansive desert vista before once again retiring to the ranch house and an evening campfire.

Thanks are due to all the volunteers for their generous contribution of energy and over 140 hours of volunteer time. We are especially grateful to the Desert Survivors who have made such an effort to provide the volunteers that we need.

The next work party will be held the weekend of November 6-7, 1999. It will begin at the Desert Tortoise Natural Area and later in the day move along the historic 20 Mule Team Parkway to the Pilot Knob Allotment. If you are interested in helping out for one or two days, please call (909) 683-3872 or e-mail the DTPC office <dtpc@pacbell.net> to be added to the volunteers mailing list. New volunteers are always welcome!

NEWS FROM THE FIELD

STERLING KENDRICK REPORTS FROM PILOT KNOB

Sterling Kendrick provided interpretive services to visitors to the DTPC/Wildlands Conservancy's Pilot Knob properties this spring. He was stationed at the Pilot Knob Allotment's Blackwater Well cabin from late March through mid June, 1999. Pilot Knob Allotment is a wonderful but very remote site that is well off the beaten track. These are extracts from Sterling's weekly reports to the Committee.

Saturday, 26 March

9:00 - Mike (bird-hunter) and 5 others stopped by the cabin – will be camping in Grass Valley area.

12:00 – heard heavy caliber (or shotgun) shooting to west. Later, saw a pickup truck at the windmill.

15:00 – Two young men in an all terrain vehicle stopped at the swing gate and we talked about tortoise problems. They had seen tortoises near Barstow and Hinckley. I explained to them how they could move tortoises off the road so as not to scare them.

22:00 – saw head- and taillights near the windmill.

Tuesday, 30 March

11:00 – Ann Mitchell (wife of Billy Mitchell, previous owner of PK Ranch) arrived with a party of others including children. Ann told me that Joe Mendiburu had owned the ranch before the Mitchells and had run sheep and cattle. He used to fly in, using the old air strip at Cuddeback lake artillery range. Shorty Adams owned the horse-trailer that is still parked by the ranch house. Shorty ran the ranch when Joe was gone. Ann and Billy lived here 3.5 of 10 years that they owned PK ranch. It was the Mitchells who installed gas lights in the “railroad car” that was used as the cabin kitchen. Ann said it was an old refrigerator car. After an hour they left for Grass Valley.

Saturday, 3 April

Stan Kerlin, the Bureau of Land Management Ranger came by and introduced himself. Among other things, he talked about the United States Air Force's Cuddeback Gunnery Range, which lies to the west of the Pilot Knob Allotment. Although abandoned by USAF, BLM are not ready to accept management of this former bombing range because it needs cleaning up. There are plenty of unexploded 20 mm rounds still lying around – an area to treat with CAUTION!

Friday, 9 April

17:45 – Mike the bird-hunter came back to camp in Grass Valley. Mike's van and two pickup trucks and 6 people! They filled the windmill trough with water. He came by the next morning to tell me that all the water had frozen at their camp last night.

Sunday, 11 April

16:15 – Larry E. Jackson, a DTPC member, came by after a visit to the DTNA. He is a biologist/entomologist who enjoys hiking.

Saturday, 17 April

20:30 – Harley Carrender of Tehachapi with a paralyzed friend drove up to ranch in a Dodge Colt (not too good on these roads!)! They were lost. Their wives were having a yard sale and they had gone out for a drive. Harley said they had come across Cuddeback lake and saw lights in the distance that they thought were Trona (it was the Navy base!). When they ran into the Navy fence they were happy to see my light nearby. I explained that I was here for the DTPC. They said many thanks for that! Harley was low on gas so I sold him 5 gallons. I led him and his friend out to the main dirt road to Atolia.

Friday, 23 April

No tortoises or snakes seen yet but lizards are out on warm days. Birds seen occasionally include: a pair of ravens, small flocks of 10-12 doves, some warblers and other small birds, a resident pair of Say's Phoebe, a grackle and humming birds. Have also seen American Kestrels – possibly a pair because although I have only seen single birds on some sightings the bird has seemed larger or smaller.

Sunday, 9 May

11:30 – Caravan consisting of a black utility vehicle and a black sedan arrived, heading for Copper City. We checked the map and this is inside the naval base. We talked about Blackwater and the DTPC, and they left for Grass Valley and a closer view of Pilot Knob. Didn't see them again.

Friday, 21 May

18:00 – Mike the bird-hunter stopped by and said that he had found several songbirds and lizards dead in the water trough by the windmill. Going to drain and refill it.

Sunday, 23 May

8:45 – Dr. John Harris (Mills college, Oakland) and two students (Naomi Metz and Emily Charly) arrived and set up camp at the ranch house. They are here for a week to work on the Mohave Ground Squirrel Study.

Wednesday, May 26

16:00 – John Harris and his party were just leaving the ranch to check their trapping grid for ground squirrels when they were astounded to see a tortoise between the road and the windmill. It was an interesting day: very warm in the morning, reaching 95° F by noon, then becoming overcast with thunderstorms and hail in the early evening.

Monsoon weather. They also spotted a Mojave green rattlesnake near the windmill.

Thursday, 27 May

14:50 – Dr. Phil Leitner, well-known naturalist from St. Mary's College and P.I. of the Mohave Ground Squirrel Study, arrived with Karen, his 8 year old daughter. We all went out to Mines Hill, the hill northwest of the ranch house, to look for bats in the mines. Phil found a male western big-eared bat in a mine adit on the far side of Mines Hill. Lots of cactus mice seen in the mines, too.

Saturday, 29 May

17:40 – Mike Connor arrived with 3 others, to camp overnight.* The next day, we found, we think, the NW corner of the patented land section that DTPC owns near junction of North Grass Valley road and the road east of Mines Hill.

Tuesday, 1 June

09:15 – BLM jeep arrived carrying Kim Allison, Bob Parker and Glen Harris to do the range assessment (surprised me – they weren't scheduled until 14th June). Walked some line transects with them. 1 person starts from a spot marked by GPS, takes 2 paces and calls out what his toe tip is touching (gravel, name of plant, dirt etc.). They do this for 200 paces (100 marks) side-steeping cactus and large shrubs following a compass course (cardinal directions I think). They took photographs, too. The process seems to give a fair indication of what they see but how do they pick transect sites? They will return to walk more transects tomorrow.

***Editor's (MJC) note:** I presented Sterling with a plaque, in honor of his outstanding service to DTPC. This should have been presented at the Annual Banquet in January, but Sterling was away touring the Yucatan at the time.

NEW TORTOISE RESEARCH PAPER

This ground breaking research paper is one of a series that will document the blood chemistry of healthy and diseased wild desert tortoises. Many of the tortoises sampled are denizens of the Desert Tortoise Natural Area.

Mary M. Christopher, Kristin H. Berry, I. R. Wallis, K. A. Nagy, B. T. Henen, and C. C. Peterson

REFERENCE INTERVALS AND PHYSIOLOGIC ALTERATIONS IN HEMATOLOGIC AND BIOCHEMICAL VALUES OF FREE-RANGING DESERT TORTOISES IN THE MOJAVE DESERT

Journal of Wildlife Diseases, 35(2), 1999, pp. 212-238

ABSTRACT: Desert tortoise (*Gopherus agassizii*) populations have experienced precipitous declines resulting from the cumulative impact of habitat loss, and human and disease-related mortality. Evaluation of hematologic and biochemical responses of desert tortoises to physiologic and environmental factors can facilitate the assessment of stress and disease in tortoises and contribute to management decisions and population recovery. The goal of this study was to obtain and analyze clinical laboratory data from free-ranging desert tortoises at three sites in the Mojave Desert (California, USA) between October 1990 and October 1995, to establish reference intervals, and to develop guidelines for the interpretation of laboratory data under a variety of environmental and physiologic conditions. Body weight, carapace length and venous blood samples for a complete blood count and clinical chemistry profile were

obtained from 98 clinically healthy adult desert tortoises of both sexes at the Desert Tortoise Research Natural Area (western Mojave), Goffs (eastern Mojave) and Ivanpah Valley (northeastern Mojave). Samples were obtained four times per year, in winter (February/March), spring (May/June), summer (July/August), and fall (October). Years of near-, above- and below-average rainfall were represented in the 5 year period. Minimum, maximum and median values, and central 95 percentiles were used as reference intervals and measures of central tendency for tortoises at each site and/or season. Data were analyzed using repeated measures analysis of variance for significant ($P < 0.01$) variation on the basis of sex, site, season, and interactions between these variables. Significant sex differences were observed for packed cell volume, hemoglobin concentration, aspartate transaminase activity, and cholesterol, triglyceride, calcium, and phosphorus concentrations. Marked seasonal variation was observed in most parameters in conjunction with reproductive cycle, hibernation, or seasonal rainfall. Year-to-year differences and long-term alterations primarily reflected winter rainfall amounts. Site differences were minimal, and largely reflected geographic differences in precipitation patterns, such that results from these studies can be applied to other tortoise populations in environments with known rainfall and forage availability patterns.

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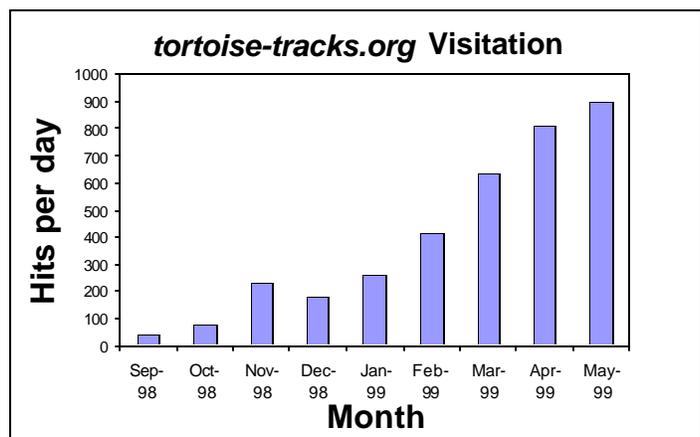
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WEB PAGE UPDATE

As can be seen from the graph, the number of visitors to the DTPC website continues to grow.

The virtual field trip to the DTNA and the Tortoise Information pages are proving especially popular with teachers and school students doing research for class projects.





Tortoise Tracks

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