
Tortoise Tracks

The Desert Tortoise Preserve Committee, Inc.

Spring 2004 24:1



Construction of the Harper Lake Road Desert Tortoise Crossing
Photographs by Dave Swietanski and Michael J. Connor

HARPER LAKE ROAD TORTOISE CROSSING MICHAEL J. CONNOR

In December 2003, the Desert Tortoise Preserve Committee completed the first purpose built "tortoise crossing" in the western Mojave Desert. The tortoise crossing is a culvert that allows tortoises to walk underneath Harper Lake Road safe from the traffic associated with the nearby solar generating plant and local residents.

Harper Lake Road runs from State Route 58 north to the solar generating plant at Harper Dry Lake in San Bernardino County. The road passes through two miles of designated desert

DTPC AWARD RECIPIENTS

In recognition of their outstanding contributions to desert conservation and to the Committee, at the January 24, 2004 Annual Banquet Awards Ceremony, DTPC Board President Mark Hagan presented inscribed plaques to:

Ileene Anderson
Dr. Matthew Brooks (Golden Tortoise Awardee)
Dr. Larry Foreman
Rae Packard
Joyce Schlachter

tortoise critical habitat, immediately north of State Route 58. From two to five miles north of State Route 58, critical habitat is located on the west side of Harper Lake Road only. The entire area is prime saltbush scrub habitat.

The United States Fish and Wildlife Service issued permits allowing the construction of the solar power generating plant in 1989. The permit conditions required the project proponents to install tortoise barrier fencing along Harper Lake Road where the increased traffic associated with the solar facilities were likely to cause injury or death to the area's desert tortoises. The proponents were also required to install culverts under Harper Lake Road to allow desert tortoises to move between habitats on either side of the road. However, these requirements were not fulfilled. The facility changed ownership and the proponents indicated that they could not obtain easements from private landowners along the road to install the fence. After considerable negotiation, under an agreement with the California Energy Commission, the Bureau of Land Management, California Department of Fish and Game and the Fish and Wildlife Service, the responsibility for constructing a fence and culverts along Harper Lake Road was transferred to the DTPC in 1995.

A number of criteria were used to select the culvert location including pattern of land ownership and topography. The site selected

for the crossing was a dip in the road where public lands were present on both sides. The 49 foot long culvert consists of 36 inch diameter concrete pipe that was laid about 18 inches below the original road surface. The road was rebuilt over the culvert, and the roadbed reinforced around the culvert sides with concrete retaining walls.

The culvert is now available for tortoises to use to move between habitats on either side of the road. Because the desert tortoise has such a low reproductive rate, biologists believe that even minimal exchange between the populations will likely prevent any genetic isolation. Because this is a purpose built tortoise crossing and not a drainage culvert, the crossing can be closed to restrict tortoise movement. Thus, the culvert provides a new management tool that could be used to facilitate a tortoise quarantine should a disease outbreak occur.

The entire \$80,000 cost of the culvert work was paid with mitigation funds provided by the generating plant. DTPC hired local contractors including Merrill-Johnson Engineering, Kelley General Construction, and TNT Biological Consultants to help create a win-win situation for both local business and the desert tortoise.

Tasks for the near future include installation of additional fencing along the road and extensive monitoring to determine culvert use by tortoises and other wildlife.



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The Desert Tortoise Preserve Committee, Inc.

Founded 1974

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ANNUAL REPORT

DESERT TORTOISE PRESERVE COMMITTEE

ACCOMPLISHMENTS & ACTIVITIES IN 2003

The Desert Tortoise Preserve Committee's mission is to promote the welfare of the wild desert tortoise (*Gopherus agassizii*) and the species that share desert tortoise habitat through its land acquisition, habitat management, education, and research programs. The year 2003 was another outstanding year in the Committee's efforts to further this mission. The Committee made great progress in implementing its proposed expansion of the Desert Tortoise Natural Area, constructed the first purpose built tortoise crossing in the West Mojave to allow tortoises to cross under a busy desert road, funded tortoise demographic and health surveys at the Desert Tortoise Natural Area and other surveys for the Mohave ground squirrel and Harwood's milkvetch that share the tortoise's habitat, took a leading role in advocating for tortoise conservation desert-wide, and reached out to hundreds of thousands of members of the public through the naturalist, Mojave Desert Discovery Center, website, outreach and other educational programs.

Environmental Education and Outreach

A. Mojave Desert Discovery Centers

The Mojave Desert Discovery Centers are multimedia interpretive kiosks that DTPC designed and fabricated to educate the general public in tortoise and desert conservation. Each kiosk features an interactive CD-Rom web site, videotape presentations about the desert and its wildlife, and customized maps and brochures to guide visitors to featured desert attractions.

During 2003, MDDC units were located at:

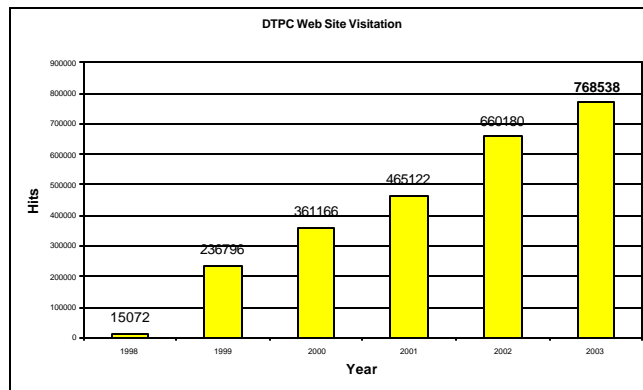
- California Living Museum in Bakersfield (until April 2003)
- California Welcome Center, Barstow
- Kern County Library, California City Branch (installed April 2003).

B. Educational Materials

- Distributed thousands of copies of the DTPC's educational brochures The Threatened Desert Tortoise and The Desert Tortoise Natural Area.
- Exhibition of Jane S. Pinheiro watercolors of Desert Tortoise Natural Area Wild Flowers at Kern County Library, California City Branch.

C. Web Site

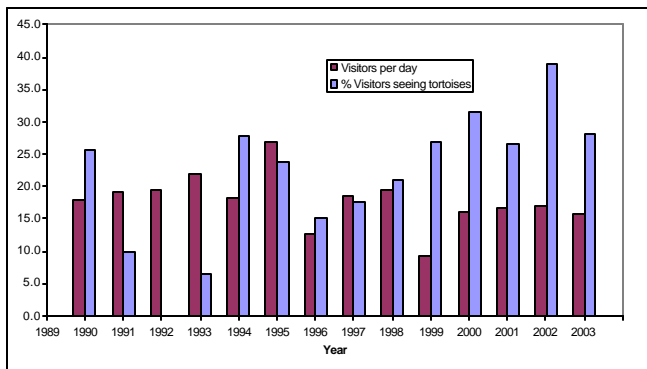
The Desert Tortoise Preserve Committee web site at <<http://www.tortoise-tracks.org>> features information on the Mojave Desert, Desert Tortoise Biology and conservation, and a virtual



tour of the DTNA. In 2003, this highly educational site had over 768,000 hits, a 16% increase in visitation over 2002 (see figure). The web site attracts large numbers of students and others researching the desert tortoise.

D. DTNA Naturalist Program

DTPC staffed a Naturalist at the DTNA Interpretive Center from March 21, 2003 to June 19, 2003 making this the fifteenth consecutive year for the naturalist program. The naturalist observed 1243 visitors in 467 visitor groups. Most visitors were from California but there were visitors from thirteen other states and six foreign countries. Some 29% of visitors saw at least one



Daily visitation to the Desert Tortoise Natural Area and number of visitors seeing tortoises during the spring season from 1989 to 2003

tortoise; 7% of visitors saw more than one tortoise.

During 2003, the DTPC's motor home that acts as the base of operations for the Naturalist was extensively refurbished including the installation of a state-of-the-art energy efficient refrigerator. This was funded by a matching grant from the National Fish and Wildlife Foundation.

E. Environmental Presentations & Outreach

DTPC staff and volunteers gave 10 educational presentations to the public including Turtle and Tortoise Club groups, and participated in 17 public meetings held in California and Nevada.

Public Policy

Significant interaction and coordination with government agencies is essential to DTPC's mission because the desert tortoise is listed as threatened under Federal and state Endangered Species Acts. The DTPC holds an annual coordination meeting with the Bureau of Land Management, and the Board President holds informal meetings with resource staff on a regular basis. The DTPC Executive Director represented the desert tortoise interest groups in the desert regional planning efforts particularly the West Mojave Habitat Conservation Plan. The Executive Director is a member of the Bureau's Ridgecrest Resource Area Steering Committee,

which meets monthly.

DTPC's work with governments agencies received public recognition in March 2003 when it was honored as the Bureau of Land Managements "Conservation Partner of the Year" by Director Kathleen Clark.

Volunteerism

Volunteers devoted 3352 hours of time to help the Desert Tortoise Preserve Committee in the year 2003. Volunteer activities included producing and distributing Tortoise Tracks, membership mailings, board meeting attendance, monitoring and conducting surveys at the Pilot Knob allotment and DTNA, product sales, research, the spring and fall work parties, and a major contribution of time and effort to review DTPC's organization and activities by business students and staff from the University of Redlands.

Habitat Holdings and Acquisitions

A. Land Holdings

On December 31, 2003 the DTPC owned 206 parcels of land including 4,201 acres of desert tortoise habitat. These parcels are located in California in the counties of Kern (3,411 acres), Riverside (80 acres) and San Bernardino (710 acres).

B. Acquisitions in 2003

Kern County

Twenty four parcels (421 acres) were acquired within the Desert Tortoise Natural Area and the DTNA Expansion Area. Three parcels (4.6 acres) of land in the area were donated to DTPC.

Riverside County

DTPC completed acquisition of a 20-acre parcel of tortoise habitat in the Chuckwalla Desert Wildlife Management Area. This area once held

the highest known densities of desert tortoise in California's Colorado Desert.

C. Habitat in Escrow

Los Angeles County

Donated 2.5-acre lot at the south edge of the Fremont-Kramer Critical Habitat Unit.

San Bernardino County

Two donated parcels of 10 acres in southwest San Bernardino County.

Kern County

Five parcels encompassing 248 acres in the DTN A expansion area.

D. New Habitat Acquisition Agreements Signed in 2003

Los Angeles County

County Sanitation District No. 14 of Los Angeles County - acquire 16.50 acres

Cal Trans, Route 138 Safety Turn Pockets (2 Projects) - acquire 2.87 acres

City Of Lancaster - K & H Ave/Amargosa Creek - acquire 118.44 acres

San Bernardino County

2003 Kern River Expansion Project - acquire 1,342.20 acres

2003 Kern River Expansion Project - Mohave Ground Squirrel Research

Habitat Management & Stewardship

A. Kern County

In Kern County, the Desert Tortoise Preserve Committee owns 3,411 acres of desert tortoise critical habitat and manages 240 acres under conservation easement, largely in and around the Desert Tortoise Natural Area. The Committee works cooperatively with the Bureau of Land Management and the State of California in managing and protecting the 39.5 square mile Desert Tortoise Natural Area.

Stewardship activities included holding 2 work parties at the DTNA, and regular fence patrols by DTPC volunteer Chuck Hemingway. In 2003, the Committee recruited and staffed a naturalist at the DTNA during the spring visitor season to monitor and provide interpretive services to visitors.

During 2003, DTPC sought to implement its expansion proposal for the DTNA by acquiring privately held tortoise habitat that lies between the current DTNA boundary and the Randsburg-Mojave Road, and by encouraging consideration of the expansion proposal by state and federal agencies.

B. San Bernardino County

The Desert Tortoise Preserve Committee owns 710 acres of desert tortoise habitat in San Bernardino County, largely in the Superior Cronese Critical Habitat Unit but with some in the Fremont-Kramer and Ivanpah Critical Habitat Units. Since 1995, the Committee has controlled the 42,000-acre Pilot Knob grazing allotment and the associated structures at Blackwater Well and has been managing the allotment for the benefit of the desert tortoise. Highlights of 2003 included removal of approximately 3.5 miles of fence from inside the Grass Valley wilderness during the DTPC's spring and fall work parties.

DTPC has installed tortoise-proof fencing along 11.4 linear miles of Harper Lake Road near Hinkley, California, pursuant to a Memorandum of Understanding between DTPC and the California Energy Commission. Desert tortoise-proof fencing has now been erected along 66% of both sides of the stretch of road.

In 2003, the DTPC installed an under-road culvert - the Harper Lake Road Tortoise Crossing - to allow tortoises safe passage across this road which is used by heavy truck traffic to the Harper Lake generating plant. This is a major milestone being the first purpose built tortoise crossing in the West Mojave Desert Tortoise Recovery Unit.

Research

A. Desert Tortoise Status

In spring 2003, DTPC with the support from the Bureau of Land Management, funded tortoise surveys on a 1 square mile study plot on the west side of the DTNA.

B. Mohave Ground Squirrel Status

In spring 2003, DTPC funded successful surveys on DTPC lands in the DTNA expansion area for the state-threatened Mohave ground squirrel. Funded with support from the California Department of Fish and Game.

C. Harwood's Milkvetch

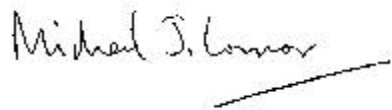
In spring 2003, DTPC commissioned the first systematic surveys for the rare Harwood's milkvetch. This rare annual plant shares wash habitat with the desert tortoise in the Chuckwalla Desert Wildlife

Management Area. Funded with support from the California Energy Commission.

D. Desert Tortoise Council Annual Symposium

Presentation at the Desert Tortoise Council Symposium, Las Vegas, Nevada, February 2003 by Executive Director Michael J. Connor: *Desert Tortoise Preserve Committee: Major Accomplishments in 2002 and Plans for 2003*.

The Desert Tortoise Preserve Committee recognizes that it is the contributions and help of our many supporters that made 2003 such a successful year.



Michael J. Connor, Ph.D.
Executive Director

Natural History Notes

Desert Tortoise Communication

Communication occurs whenever the activities of one individual animal influences the activities of another in a consistent manner. Communication in desert tortoises involves chemical, visual and tactile signals. Vocal communication in desert tortoises appears to play only a minor role. Although generally solitary animals, desert tortoises interact deliberately in the breeding season during courtship or combat.



Desert Tortoise Intraspecific Interaction
Photograph by Kristin Berry

Chemical signals are an important component in tortoise communication. Desert tortoises are olfactory-oriented creatures, constantly sniffing the ground as they walk and sniffing each other. Tortoises produce chemical signals (pheromones) through a pair of subdentary glands or chin glands. These chin glands are found in all species in the genus *Gopherus* and appear to be uniquely pronounced in this group. Both sexes have these glands, which become enlarged during the breeding season. They are especially large in the males. Tortoises sometimes wipe scent from the chin gland onto an enlarged scale found on the forelimbs, and then present the scent to another individual. Through the use of these pheromones, it is believed that tortoises can recognize the sex and individual identity of other members of the social group.

Cloacal scent of the female is another important chemical signal. It may be possible that males can judge the receptivity of females through the use of this scent.

DESERT TORTOISE PRESERVE COMMITTEE

MEMBERSHIP/DONOR FORM

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Individual membership \$ 15 annually []
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The DTPC is an IRS recognized tax-exempt 501 (c)(3) nonprofit corporation. All contributions above the basic \$15 annual membership dues are tax-deductible to the full extent allowed by law.

All contributors receive the quarterly newsletter *Tortoise Tracks*.

Membership and donor information are kept confidential and will not be disclosed to third parties.

I WANT TO VOLUNTEER

My area of interest/expertise is:

My e-mail address is:

Another interesting use of chemical signals, observed in captive desert tortoises, is the use of fecal pellet sign posting. Fresh feces, especially when they are from a dominant male, can cause the dispersal of other tortoises. Fecal pellet sign posting is especially common in a coversite and can prevent other tortoises from cohabitating the same burrow.

Visual communication is not as varied in turtles as it is in other vertebrate groups. This is probably due to limitations imposed by the shell. Visual signaling in desert tortoises involves mainly head bobbing. When a male encounters another tortoise, whether another male or a female, he will often signal with vertical head bobbing. Initially, the head bobs are slow and subdued, but as the encounter progresses they become more intense and rapid. Subdominate males, if they are smart,

will bid a hasty retreat upon the rapid head bobbing of an alpha male. During courtship, a male will head bob at a female for prolonged periods, sometimes hours, with the female watching from within her burrow. What information is transmitted to the female through these prolonged head bobs? Perhaps the female can judge the fitness of the male from how persistent he is at head bobbing. Head bobbing may aid in wafting the scent from the chin glands.

Tactile signals are especially important during combat and courtship. Tactile signals are often quite dramatic and involve biting, ramming, and pushing, mainly on the part of the male. Females can reject the sexual advances of a male through the use of a particularly dejecting signal: shell drop, or conversely, can accept the male through shell lift (presentation).



Tortoise Tracks

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DTPC CALENDAR OF EVENTS

20-21 March 2004
Desert Tortoise Preserve Committee's
Spring Work Party
9-10 October 2004
Desert Tortoise Preserve Committee's
Fall Work Party