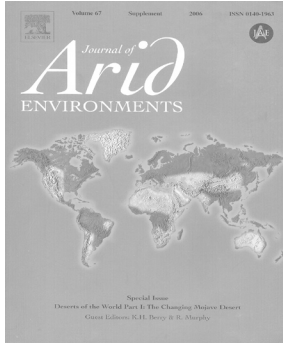

Tortoise Tracks

The Desert Tortoise Preserve Committee, Inc.

Spring 2007 27:1

USGS Studies Document a Changing Mojave Desert



Are invasive plants taking over the Mojave Desert and changing fire patterns? How do military and mining activities affect threatened desert tortoises and their habitat? New U. S. Geological Survey studies in a special volume of the *Journal of Arid Environments* featuring the Mojave Desert shed light on these and other questions.

“The research findings in this volume on the Mojave Desert address several significant issues of concern and can be applied in solving some of the more pressing land-use problems,” said Dr. Kristin Berry, a USGS scientist in Moreno Valley, Calif., and guest co-editor of the special volume with Dr. Robert W. Murphy of the Royal Ontario Museum. USGS scientists are authors of eight articles in the volume.

Several articles relate directly to the desert tortoise and its habitat.

USGS Studies Document a Changing Mojave Desert, continues on page 2

Visit the “Desert Tortoise Natural Area” (DTNA)

By Edward Patrovsky



Edward Patrovsky is returning for another season as the Naturalist at the Desert Tortoise Natural Area (DTNA). He will be there until early June and the Desert Tortoise Discovery Center is also open until then. During Ed's days off Chuck Hemmingway will cover as the Naturalist.

The Discovery Center is a veteran motor coach, painted with beautiful murals of the desert tortoise and its environment. It serves as an office, display center, and quarters for the Naturalists. The motor coach is located between the parking lot and Interpretive Kiosk at the DTNA from March to June of each year, and has been there for 2 decades. During the off-season, it is stored at the BLM Ridgecrest office.

This spring, Ed reports that the DTNA is in extreme drought, with no wildflowers or grass appearing thus far. However, don't let that discourage you from visiting. The relative lack of vegetation is allowing for some interesting wildlife sightings, which the naturalists will be delighted to share with you during your visit. Tortoises have been observed on the trails, and have been seen recently by some visitors.

Visit the DTNA, continues on page 6

USGS Studies Document a Changing Mojave Desert, continued from page 1

The volume is dedicated to Dr. David J. Morafka, who initiated the head start program for desert tortoises at the National Training Center, Ft. Irwin.

Several USGS studies examined Mojave Desert ecosystem changes and causes. For example, one study found that precipitation variability during the late 20th century was sufficient to change the Mojave Desert ecosystem, affecting populations of perennial vegetation, annuals, and small herbivores. Other studies examined the invasion of the desert by non-native annual plants. Not only have non-native annual plant species effectively invaded much of the central, southern, and western Mojave Desert, but researchers found that their bulk, or biomass, now composes over 50 percent of the annual plant community, regardless of precipitation amount. Scientists also found that the middle-elevation ecological zone -- home to Joshua trees and desert tortoises -- is the most susceptible zone for an invasive grass fire cycle to take hold, especially where numerous very large fires have occurred. A study on plant invasions at artificial livestock watering sites on the Pilot Knob allotment in the

central Mojave Desert identified a gradient of 200 meters surrounding these sites as having the most pronounced effects of invasive plants.

In a survey to identify potential sources of toxicants in natural and human-altered tortoise habitats, USGS scientists identified soils and plants near mines in the Rand Mountains and at Goldstone that contained anomalous concentrations of arsenic and mercury as the potential source for elevated levels of these toxicants in ill desert tortoises from the western and central Mojave Desert. A survey of the tortoise populations at the National Training Center at Fort Irwin in the central Mojave Desert revealed low densities and high death rates of tortoises on most study plots. Deaths of tortoises from anthropogenic sources were significantly correlated with surface disturbances, trash, military ordnance, and proximity to offices and paved roads. Tortoises with upper respiratory tract (infectious) diseases were more likely to occur near towns, offices, and roads. Tortoises with shell diseases were more likely to occur in areas with a history of military use than in areas with no

history of military use. A study of ravens at Ft. Irwin, a predator of young desert tortoises, found raven abundance varied seasonally, diurnally, and with human abundance, and was greatest near resource subsidies, specifically landfill and sewage ponds.

If you would like copies of the articles, please feel free to contact the authors listed below or you can access a website and download publication briefs at www.werc.usgs.gov. Click on Outreach and then on publication briefs. You will see a list of publications and can select those of interest.

Tortoise populations: Dr. Kristin H. Berry, (951) 697-5361, <kristinberry@usgs.gov>

Precipitation history and ecosystem response: Dr. Richard Hereford, (928) 556-7159, <rhereford@usgs.gov>

Non-native plants, fire patterns: Dr. Matthew L. Brooks, (702) 564-4615, <mattbrooks@usgs.gov>

Chemical survey of selected elements: Dr. Maurice A. Chaffee, (303) 236-1855, <mchaffee@usgs.gov>

Ravens: Dr. William I. Boarman (emeritus), (619) 861-9450, <conservation-science@cox.net>



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The Desert Tortoise Preserve Committee, Inc.
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Natural History Notes

Giant Tortoises

On several of the world's tropical islands, tortoises have evolved enormous sizes. Giant tortoises can reach 4 feet in length and weigh up to 660 pounds. In contrast, a large desert tortoise can be 15 inches long and weigh 15 pounds.

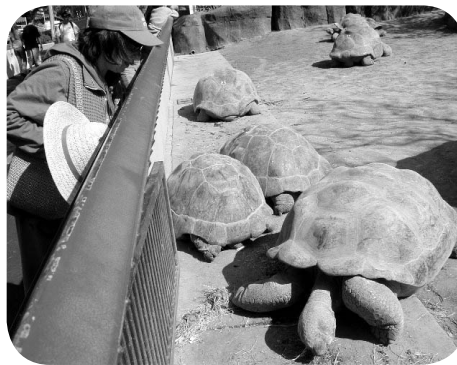
Giant tortoises are found in three island regions of the world: off the southeastern coast of Africa (e.g. Madagascar, the Seychelles, Mauritius, and Réunion), the Malay Archipelago in southeastern Asia (Sulawesi, Timor, Flores and Java), and on the Galapagos Islands off the west coast of South America. Many species have become extinct. Historically, at least 20 species and subspecies of giant tortoises inhabited the islands of the Indian Ocean and 15 species on the Galapagos Islands. Of these, only one of the species of the Indian Ocean survives and 11 on the Galápagos.

Giant tortoises are not only enormous, but are also extremely long lived. They are among the world's longest living animals, with an average lifespan of over 150 years. Some giant tortoises are reported to have lived over 250 years.

The island of Aldabra is home to the world's largest population of giant tortoises, the Aldabra giant tortoise (*Dipsochelys dussumieri*). This small atoll, located approximately 265 miles north of Madagascar consists of only 40,000 acres, but is home to about 150,000 individuals.

The largest of the giant tortoises are the Galapagos tortoises, which are endemic to nine islands of the Galápagos archipelago, 600 miles

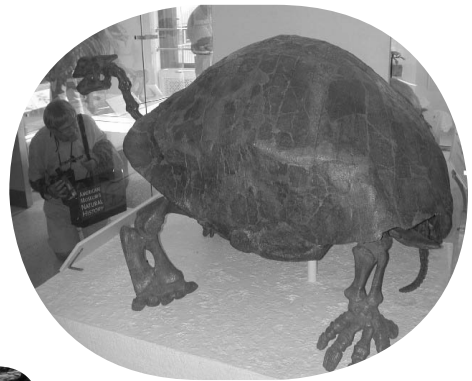
Extinct giant Tortoise at the American Museum of Natural History in New York City.



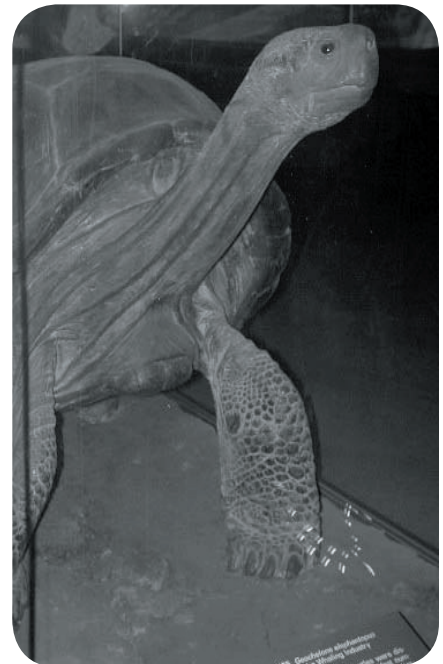
off the coast of Ecuador. These tortoises are slightly larger than the Aldabra tortoises.

Biologists have longed been intrigued by two related biological phenomena: island gigantism and insular dwarfism. Many species (or species groups) undergo dramatic changes in body size after becoming separated from their continental ancestors and evolving on islands. Some species, like tortoises and lizards (e.g., Komodo dragon) evolve to become gigantic, while others become dwarfs (e.g., the extinct pygmy mammoths of California's Channel Islands). The reasons for this are complex. There is some fossil evidence to suggest that the mainland ancestors of today's island giant tortoises were even more gigantic

. If this is true, today's giant tortoises may actually be island dwarfs.



Galapagos tortoises at the San Diego Zoo.



Preserved

Galapagos tortoise at the American Museum of Natural History in New York City.

32nd Annual Desert Tortoise Preserve Committee Banquet Special Awards



Jane Block, of Riverside, California, received a Special Award from the Desert Tortoise Preserve Committee for her long record of public service for many community and conservation organizations. She is our land lady and provides us office space with other like-minded non-profit organizations. With her support, we have thrived in a financially suitable environment with the Sierra Club, Riverside Land Conservancy, Wilderness Society, and the Quakers. The close proximity of the other conservation organizations provided a nurturing setting for the Board and the Executive Director.

Jane Block's decades of public

service in Riverside County to cities, families, children, and the environment are a shining example for us all. Instead of a single focus, she has worked to improve communities, landscapes, and educating the public through many different organizations, task forces, and committees. A few examples highlight the extent and diversity of her service: Riverside Land Conservancy; Mayor's Task Force on the Santa Ana River; City of Riverside Master Plan for Bike-ways; Family Service Association of Western Riverside County; Women's Democratic Club of Riverside County; Children and Families Advisory Committee; Riverside County Commission on Status of Women; San Timoteo Canyon; Save our Plateau (forerunner of the Santa Rosa Plateau in early 1990s); Friends of Sycamore Canyon; and with her husband, Richard, Box Springs Mountain Reserve.

Denise LaBerteaux and Bruce Garlinger of EREMICO Biological Services in Weldon, California received a Special Award for their outstanding and high quality scientific contributions of vegetative and floral studies of the Desert Tortoise Research Natural Area (DTRNA) and other desert habitats. They are well known for their high level of professionalism in conducting plant transects, as



well as their floral collections and surveys for Mohave ground squirrels. In 2006, they took on a project with the Desert Tortoise Preserve Committee to remove the alien Mediterranean mustard, *Hirschfeldia incana*, at the Natural Area and to conduct surveys for other alien plants. They removed >5,000 plants and produced an outstanding report, thereby helping the Committee to set new goals for recovery and restoration of desert tortoise habitat. In December 2006, they made a substantial gift for land acquisition.

DTPC 2007 Special Awards Go To:

Jane Block (top l pg 4)
Denise LaBerteaux &
Bruce Garlinger (top r pg 4)
Dr. Glenn Stewart (top r pg 5)
Chuck Hemingway (top l pg 5)



As a small token of our appreciation for all his volunteer efforts for the Desert Tortoise Preserve Committee, the Committee awarded Chuck Hemingway this year with a hiking stick. Chuck lives in California City, not far from the Desert Tortoise Natural Area, and has volunteered for the Committee for almost 10 years now. Chuck regularly inspects the DTNA fence, repairing breaks in the fence line and replacing boundary signs as needed. He also provides invaluable assistance with our annual DTNA naturalist program and the two annual work parties.

The GOLDEN TORTOISE AWARD went to Dr. Glenn Stewart, a Professor at the California State Polytechnic University, Pomona, for his efforts to protect and save the desert tortoise and its habitat over the last three decades. His accomplishments are numerous, ranging from academic and



scientific to those of a staunch conservationist. He was active on behalf of reptiles in the late 1960s and early 1970s in establishing bag limits for take with the California Fish and Game Commission. He was among the founders of the Four States Desert Tortoise Recovery Team, which became the Desert Tortoise Council in 1976. He served as officer and has spent 32 years on the Board of Directors of the Desert Tortoise Council, mentoring many new Board members in their duties by example. He chairs the student awards committee annually, the David Morafka scholarship committee, and has prepared state and federal listing packages for the tortoise. He continues to undertake many other tasks essential to the well-being of a non-profit organization dedicated to conservation, management and recovery of a threatened species. Our founders recall, too, his strong support of organization when it was in its infancy.

As a Professor at Cal Poly, Pomona, Dr. Stewart introduced many undergraduate students to the wonders of reptiles and the tortoise. He also have sponsored and mentored many graduate students, some of which have received masters degrees while conducting research on desert tortoises. For all of us, Dr. Stewart provides a great example of steadfast determination to make this world a better place, especially for the desert tortoise and other animals that need our help.

Visit the DTNA, continued from page 1

Furthermore, a limited number of prior years' DTPC t-shirts and commemorative posters and other items will be available at the DTNA this spring. Some of these items will be sold at reduced prices to clear out the old inventory for more new items, such as short and long sleeve t-shirts and sweat-shirts featuring "Pete Gately" desert tortoise design (photo back page).

When you come to visit the DTNA, there is a short main loop hiking trail, from which 3 more-lengthy trails branch off. The Plant and Animal loop trails have trail guides and numbered exhibits. When you come to visit, you can eat your packed lunch at the kiosk. Be sure to bring sturdy shoes, clothing for a wide range of temperatures, and lots of water. There is no water available at the DTNA. For directions, access the DTPC website on the internet. The Desert Tortoise Natural Area is located approx. 5 miles North of California City, on an unpaved road suitable for most vehicles.



DTPC BOARD MEMBER MARK BRATTON AND DTPC VOLUNTEER CHUCK HEMINGWAY SPENT A COUPLE OF DAYS LAST FALL REPLACING SIGNS ALONG ROUGHLY FOUR MILES OF THE DESERT TORTOISE NATURAL AREA (DTNA) BOUNDARY. THESE SIGNS CLEARLY MARK THE BOUNDARY OF THE DTNA AND INDICATE THAT THE AREA IS CLOSED TO VEHICLE TRAFFIC AND TO REPTILE COLLECTING. THE SIGNS EVENTUALLY FADE IN THE INTENSE DESERT SUN, AND WERE IN NEED OF REPLACEMENT. APPROXIMATELY 60 SIGNS WERE INSTALLED OR REPLACED.

The Committee Receives Generous Gifts



Desert Tortoise Prints by Artist Valerie Newman

Jane McDaniel, executrix for the Valerie S. Newman estate, generously donated 24 prints of a desert tortoise created by Artist Valerie Newman for our fund-raising efforts. The prints are of a tortoise looking out from its shell. The tortoise shell is shown as held together with rivets and the impression is of an animal that is hanging on to existence. It is a moving representation that hints of fragmented habitat and populations. Valerie Newman was born in Wilmington, Delaware in 1951 and as a child lived in Delaware, Virginia and West Virginia. She attended Marshall University in West Virginia, where she majored in library sciences and minored in art. Her love for wildlife and horses inspired her art. In 2006, she was laid to rest on her beloved Chincoteague Island, Virginia. We framed two of the prints and one was auctioned at the Desert Tortoise Council banquet. The others are available from the Committee. Thank you for thinking of us, Jane McDaniel.

continues next page

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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:



Vehicle for Stewardship

Guy McNerny, a long-time and generous supporter of the Desert Tortoise Preserve Committee, donated his 1997 Chevrolet suburban in January. The suburban is in excellent running condition with its 2004 engine and will be in California City with our volunteer naturalist and land steward, Chuck Hemingway, who regularly patrols the fence lines and new properties, repairing fence breaks and putting up new signs. In addition, the vehicle provides support to the Naturalist program at the Desert Tortoise Research Natural Area, educational programs for

field trips, and surveys of potential lands for acquisition for the desert tortoise, Mohave ground squirrel, and burrowing owl. In turn, Guy is very pleased that the vehicle can be put to good use. Guy tells us that he loves animals, and that he has tortoises, dogs, cats, and horses on his acreage. Thank you, Guy! What a very special gift!

**SPECIAL THANKS
 TO GUY MCINERNY
 AND JANE MCDANIEL
 FROM THE
 COMMITTEE
 FOR THESE
 WONDERFUL
 DONATIONS**

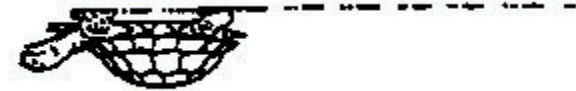


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DTPC CALENDAR OF EVENTS



For Sale at The DTNA, Shirt Design by
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