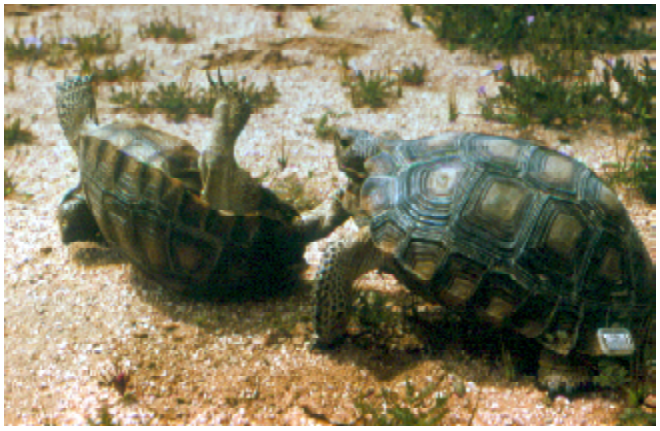
Tortoise Tracks

The Desert Tortoise Preserve Committee, Inc. **Winter 2004 24:2**



The Desert Tortoise Preserve Committee's Annual Banquet Will Feature a Presentation by Dr. Kristin Berry On The Social Behavior of Desert Tortoises in The Wild

Photographs by Dr. Kristin Berry

DR. KRISTIN BERRY TO BE FEATURED SPEAKER AT DESERT TORTOISE PRESERVE COMMITTEE THIRTIETH ANNIVERSARY BANQUET

The Desert Tortoise Preserve Committee's Annual Meeting and Banquet will be held Saturday, January 22, 2005 at the Ramada Inn, 300 West Palmdale Boulevard, Palmdale, California. This occasion marks the thirtieth anniversary of the founding of DTPC.

The Banquet speaker will be Dr. Kristin Berry. Dr. Berry will be giving a not-to-be-missed review of the social behavior of desert tortoises, drawing from recently conducted field studies of tortoises in the Central Mojave Desert.

The afternoon Annual Meeting will feature reviews of the Committee's ongoing programs and activities, and plans for 2005.

Turn to page 3 for event details and reservation form.

DESERT TORTOISE NEWS

FROM DTPC...

DTNA Expansion Plan

DTPC has been moving ahead with its proposed 17 square mile expansion of the DTNA. This will establish a significant habitat corridor from the DTNA to designated critical habitat and promote the Natural area's long-term integrity. DTPC has acquired 4,500 acres (about 40%) in the expansion area and expects to reach the 50% mark in the next 2 years.

The DTNA expansion plan got a major boost with the recent donation of Camp "C" to DTPC by the Center For Biological Diversity. The Center acquired Camp "C" as part of a settlement of a lawsuit filed by the Center For Biological Diversity and Defenders of Wildlife relating to the Hyundai Test Track being built at the south end of California City.

Camp "C" was the main staging area for local unauthorized off-road vehicle activity. The closure of this attractive nuisance will reduce trash, vandalism and ORV impacts to the area's tortoises and habitat.

Recent Land Acquisitions

2004 has been another banner year for land acquisitions. So far this year, DTPC has taken title to some 250 acres of habitat and there is a sizable acreage still in escrow that may close before the years end.

We have had a number of **donations of parcels of land** in and around the DTNA from DTPC members, supporters, and private individuals. Donors include Nellie Urbano, Franklin Hayes, David Elden, Melanie Tyler and Elizabeth Maury (donated in honor of her mother). Land acquisition details will be provided in the next issue of *Tortoise Tracks*.

OTHER NEWS...

Fort Irwin Expansion

The Army released its draft Environmental Impact Statement this spring and the final EIS is expected in 2005. The Army is working on a proposal to translocate 1200 or more tortoises placed at risk by the proposed expansion.

BLM Rangewide plans

The BLM's NEMO and NECO plans are in limbo because a Federal judge has ruled that the USFWS used an inadequate standard to determine impacts to desert tortoise critical habitat. The related West Mojave Plan has still not been released.

Desert Tortoise Recovery Plan Assessment

The Desert Tortoise Recovery Plan Assessment Team has released its final report. The team found that the 1994 Recovery Plan remains sound but needs to be implemented. Management changes within the FWS are proposed to facilitate this.

NEW DTPC "LIFE" MEMBERS

Richard Anderson/Lynn Hansen
Betty Burge
Theora Cole
Mike Dee
Stieg Klein
San Diego Turtle & Tortoise Society

Telephone: (951) 683-3872
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http://www.tortoise-tracks.org

CELEBRATING 30 YEARS

THE DESERT TORTOISE PRESERVE COMMITTEE INVITES YOU TO JOIN US AT OUR

30th Annual General Meeting & Banquet

Ramada Inn, 300 West Palmdale Blvd., Palmdale

The Desert Tortoise Preserve Committee will hold its Thirtieth Annual Meeting and Banquet on Saturday, January 22, 2005 at the Ramada Inn, 300 West Palmdale Boulevard, Palmdale, California. The Banquet speaker will be Dr. Kristin Berry.

PROGRAM

- **Annual Meeting 2:00 to 5:00 P.M.**
- **No-host Social Hour 5:00 to 6:00 P.M.**
- **Banquet Program 6:00 to 9:00 P.M.**

RAFFLE DRAWINGS!

Featuring:

Dr. Kristin Berry, US Geological Survey

Dr. Berry will present an illustrated review of Desert Tortoise social behavior drawing on recent field work in the Central Mojave Desert

The **Ramada Inn** is conveniently located just west of the Interstate 14 Freeway at the Palmdale Boulevard exit. From Los Angeles take the 405 N to the 5 N to the 14, continue N on 14 to the Palmdale Blvd. exit, turn left (west) under the freeway, hotel is on the left. From San Bernardino: Take the 15 N to 138, continue W on 138, it turns into Palmdale Blvd., continue on Palmdale Blvd. to hotel located just west of the 14. From Mojave, take the 14 S to Palmdale Boulevard exit. Turn right. Ramada Inn is on the left.

If you wish to stay overnight at the Ramada Inn
call (661) 273-1200 for room reservations.

CHECKS AND RESERVATION FORMS MUST BE RECEIVED BY JANUARY 15, 2005

Questions? Please call Michael Connor at: (951) 683-3872; e-mail him at: **dtpc@pacbell.net**
Or visit our Web site at: **http://www.tortoise-tracks.org**

____ Dinner reservations at $25 each: $_____

Optional tax-deductible donation: $_____

Enclosed is my check for a total of: $_____

Name(s): _____ Phone Number: _____

Address: _____ Email: _____

City: _____ State: _____ Zip: _____

Organizational Affiliation (if any): _____

I (we) plan to attend the afternoon Annual Meeting: Yes _____ No _____

Make checks payable to DTPC and mail to:
DTPC Annual Banquet, 4067 Mission Inn Blvd., Riverside, CA 92501

West Mojave Desert Tortoises On The Move?
The Pros and Cons of Tortoise Translocation
Michael J. Connor

The Mojave Desert's desert tortoise population is about to celebrate the 15th anniversary of its listing on the Endangered Species list. It has not been a happy 15 years. Tortoise numbers have continued to dwindle. Tortoise habitat continues to be gobbled up in huge bites by developments in California, Nevada and southeast Utah. The West Mojave tortoise population has been particularly hard hit in a bruising battle with desert users. Now the tortoises are facing their biggest challenge in recent history. The Army plans tank training on pristine habitat at the south end of Fort Irwin and the adjacent Superior Valley. This designated critical habitat is a regional hot spot and home to thousands of tortoises. Although it would be much better for the recovery of the desert tortoise if the Army trained elsewhere, the Army's solution is to move nearly a thousand tortoises to some new location. But this is not the easy solution it seems. Although we all want these tortoises to be saved, tortoise translocation is problematic and still considered experimental.

Tortoises are well known for their long life-spans. We don't know if they spend their entire lives in one territory because it has not been practical for biologists to observe a tortoise over the 60 plus years of its life. However, we do know that they spend decades in the same area. For example, two female tortoises have lived on one of the study sites at the Desert Tortoise Natural Area since they were marked there over thirty years ago. Tortoises have been observed to make purposeful trips across their territory to the locations of specific plants and minerals licks. Males and females exhibit complex social behavior, and males appear to form "dominance hierarchies". During the summer and fall courtship periods, males will take a tour of their territory visiting burrows of favored females. Tortoises at the Beaver Dam slope in southeast Utah migrate each fall to communal hibernaculae in deep sandstone caves. These are the types of behavior that we would expect from animals that know every inch of their territory. Because of this strong connection between a tortoise and its habitat, current USFWS protocols require that tortoises found in construction areas be moved short distances out of harms way.

So what happens when tortoises are moved out of their home range? We know from studies with transmittered tortoises that their first reaction is often to go for a long, linear march. Presumably, such tortoises are looking for some familiar habitat or landmark. So strong is this reaction, that in several studies, transmittered tortoises have been "lost" because they simply walked out of signal range! Clearly then, any translocation site needs to be fenced so that the tortoises are confined to a safe area where they can establish a new home range and social structure.

Given the vagaries of climate, desert life is stressful in of itself but anthropogenic factors make the situation worse. These added stresses have contributed to disease outbreaks among wild tortoises. There are a number of diseases of both known and unknown cause. Most well known, is infection by Mycoplasma. Mycoplasma are small bacteria that can thrive in the upper respiratory tract and cause Upper Respiratory Tract Disease (URTD) in tortoises. At least two different Mycoplasma species can cause URTD.

Mycoplasmas cause chronic, persistent infections and are rarely eliminated from the host. Once infected, tortoises ten to remain infected. Looks are deceiving in tortoises. Clinical signs are transient and the absence of a nasal discharge is NOT an accurate reflection of disease status. The best predictor of infection is presence of Mycoplasma antibody in a given tortoise's blood. Laboratory studies have established that these antibodies to Mycoplasma are not protective, and in fact seropositive tortoises show higher mortality following renewed exposure to Mycoplasma. Over 90% of seropositive animals have damage to the respiratory tract. Twenty years of veterinary clinical

practice with captive tortoises have shown that once exposed, most tortoises remain at risk for URTD for their entire lives. Mycoplasma infection is the AIDS of the tortoise world.

Mycoplasma spreads through intimate (nose to nose) contact between tortoises. For this reason, double tortoise barrier fencing around translocation sites is the recommended standard where disease is an issue. Relocated or translocated animals may be at risk of contracting disease as well as spreading disease.

Mycoplasma is the bane of the US poultry industry where outbreaks can only be contained by culling the entire flock. Epidemiologists have observed epidemics of mycoplasmosis in a number of wild birds. The most well characterized of these epidemics, is the recent devastation of eastern populations of the house finch by *Mycoplasma gallisepticum*[1]. This epidemic was observed in the very early stages, allowing a detailed dissection of the process. Not surprisingly, host population density was identified as a major factor in the transmission of the disease. The denser a given population, the more likely it is that individuals in that population will encounter other individuals and present opportunities for disease transmission. This factor is of particular concern with species like the desert tortoise that have complex social behavior. Translocation can lead to disrupted social behavior[2] and result in other stresses that can contribute to the outbreak of clinical signs. Animals displaced by negative social interactions may take off on long forays and ultimately spread disease. The population effect is the same whether "healthy" animals are translocated to areas where infected animals are present or whether infected animals are moved to an area of healthy animals. There is a serious risk that translocations could cause a local increase in the incidence of infectious disease, trigger another URDS epidemic and jeopardize the entire West Mojave desert tortoise population.

For similar reasons, the 1994 *Desert Tortoise Recovery Plan* recommended that experimental translocations NOT be made into tortoise Desert Wildlife Management Areas (DWMA). Instead, translocations should be made to appropriate empty habitat outside DWMA boundaries that is fenced to contain the tortoises. The site needs to be large enough so that the number of tortoises introduced does not exceed the pre-decline density. All potential translocatees should be medically evaluated for general health and indications of disease, using the latest available technology, before being moved. If desert tortoises are to be moved into an area that already supports a population—even one that is well below carrying capacity—the recipient population should be monitored for at least 2 years prior to the introduction.

Successful translocation of desert tortoises requires the identification of suitable site(s), appropriate environmental assessments, full evaluation of the health status of translocated and resident tortoises, separation of sick and healthy tortoises, and long-term monitoring. The health and welfare of both transplanted and resident tortoises present at the translocation site(s) must be ensured. According to the US Fish and Wildlife Service's Biological Opinion, tortoises displaced by the Fort Irwin training will be translocated only to areas that have severely depleted tortoise populations. Unless this condition holds, resident tortoises may be placed at risk leading to increased take. It would be a truly irresponsible act to move adult tortoises into sensitive areas without a clear understanding of disease dynamics. Further, the long-term reestablishment of healthy populations will require recruitment of healthy juveniles and subadults. Clearly, any proposed large-scale translocation of tortoises into critical habitat in the West Mojave that does not follow the FWS guidelines could result in significant harm and should trigger extensive environmental review before being put into effect.

[1] Hartup, B. K., Kollias, G. V., and Ley, D. H. 2000 Mycoplasmal conjunctivitis in house finches from eastern North America. J. Wildlife Diseases 36(2): 257-64.

[2] Berry, K. H. 1986. Desert tortoise (*Gopherus agassizii*) relocation: implications of social behavior and movements. Herpetologica 42:113-125.

Natural History Notes | Desert Tortoise Home Range

Desert Tortoise Knows Its Home Range
Photograph by Bev Steveson

Like many animals, desert tortoises occupy distinct home ranges. Males generally have larger home ranges than females, and larger tortoises have bigger home ranges than smaller tortoises. A large male may have a home range of 1.5 square kilometers, while a typical female's home range could be half that, or less.

Within a home range, a tortoise knows the location of its caves and burrows, and the location of other important resources like drinking depressions, nest sites, mineral licks, and foraging areas. Equally important, tortoises know the locations of other individuals in their social group. During the mating season males know likely places to find their mates. Also, males can minimize confrontation with other males by staying clear of each other's areas.

Home ranges can be determined by following a tortoise that has been equipped with a radio transmitter over the course of a season or, better still, for several years. Each time the animal is located, its exact position is recorded with a GPS unit. After many location points are gathered, they are circumscribed in a minimum convex polygon. A typical example of a tortoises home range and the points used to determine this are shown in the figure.

It is not known exactly by what mechanism a tortoise is able to navigate through its home range. They can travel in nearly straight lines over many hundreds of meters to locate their burrows. They appear to have a good sense of compass direction, and probably also use a combination of olfactory and visual cues to guide them.

Over the course of its life-span, a tortoise will become intimately familiar with the subtle details of its home range. When transplanted to a new area a tortoise can become

DESERT TORTOISE PRESERVE COMMITTEE

MEMBERSHIP/DONOR FORM

NAME _____ DATE _____
ADDRESS _____ RENEWAL ☐
CITY _____ NEW ☐
STATE _____ ZIP _____

Individual membership	$ 15 annually	[ ]
Family membership	$ 20 annually	[ ]
Sponsor membership	$ 30 annually	[ ]
Benefactor membership	$ 75 annually	[ ]
Patron membership	$100 annually	[ ]
Life	$500	[ ]

Membership Dues $ _____
Additional Donation $ _____
Total Enclosed $ _____

DONATION ONLY
Enclosed is my donation of $ _____

Please make checks payable to **DTPC** and mail to:

DTPC
4067 Mission Inn Avenue
Riverside, CA 92501

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.

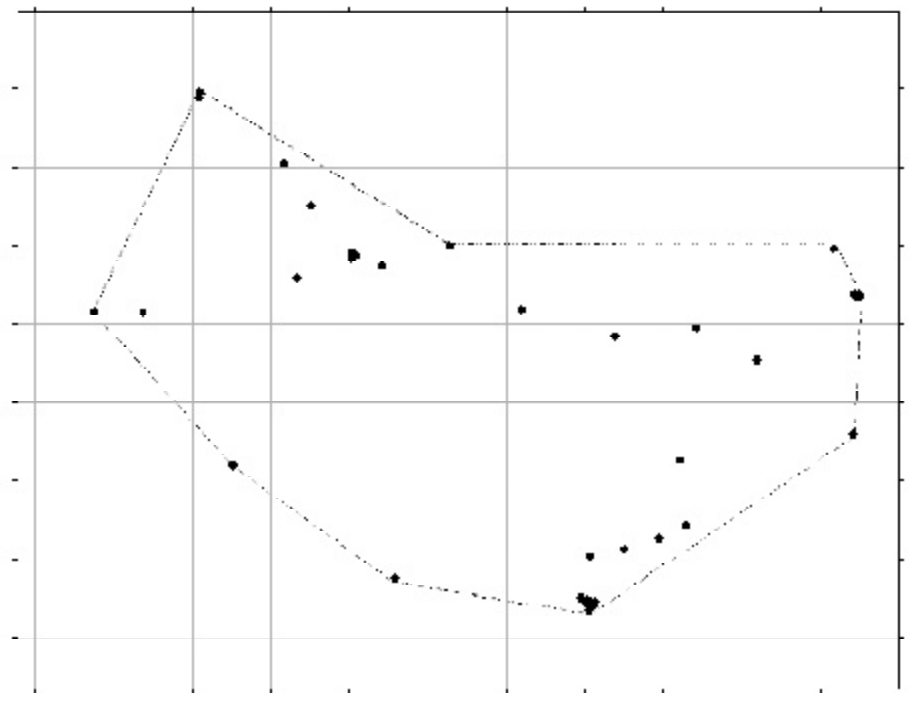
I WANT TO VOLUNTEER

My area of interest/expertise is:
_____

My e-mail address is:
_____

disoriented to its new surroundings and will often attempt to return home. This can cause great stress to the animal. An animal transplanted during the summer can be left stranded without a coversite, with potentially fatal results.

Younger animals probably adjust better than older animals to being translocated. A translocated animal can disrupt the social structure of the resident population, especially when the translocated animal is an alpha male.



Plot Showing the Home Range of a Desert Tortoise
Graphic by Mark Massar

Tortoise Tracks

THE DESERT TORTOISE PRESERVE COMMITTEE
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RIVERSIDE, CALIFORNIA 92501

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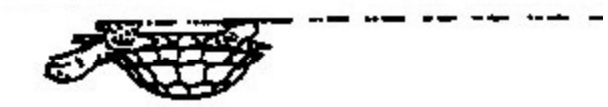

DTPC CALENDAR OF EVENTS

January 22, 2005
Desert Tortoise Preserve Committee
Annual Meeting & Banquet, Palmdale, California

February 18-21, 2005
Desert Tortoise Council Annual Symposium
Radisson Hotel, Tucson, Arizona

April 4-5, 2005
Desert Tortoise Preserve Committee's
Spring Work Party