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# Tortoise Tracks

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The Desert Tortoise Preserve Committee, Inc.

Summer 2003 23:2

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Desert Tortoise at the Desert Tortoise Natural Area, March 28, 2003  
Photograph by Jill Heaton

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## SPRING WILDFLOWERS SPECTACULAR IN 2003 AT THE DESERT TORTOISE NATURAL AREA

By Kristin H. Berry, U. S. Geological Survey, Moreno Valley, California

The winter rains brought spectacular displays of wildflowers in parts of the Mojave and Colorado deserts, and the Desert Tortoise Natural Area (DTNA) was once again in bloom. Several years ago, I prepared a rough draft of a *Flora of the Desert Tortoise Natural Area*. Because I did not have enough herbarium specimens, it remained unfinished, awaiting El Niño years with the wildflower displays. This year, I decided to commit several days to collecting more herbarium specimens and to document abundance, locations and habitat preferences for as many species as possible so that I can finish the flora. The U.S. Geological Survey is supporting this endeavor for a few days and botanist Denise La Berteaux of Eremico is assisting.

The plant list for the DTNA has grown to over 220 species since I began documenting and collecting specimens in 1973. Over the years, many people have helped, including Mary Ann Henry and W. Bryan Jennings, who was one of the spring Naturalists at the interpretive center about 10 years ago.

The distribution of species varies from north to south, east to west. The alkali gold fields, coreopsis, lotus, and desert candles, are, for example, more common in the south on the alluvial fans. Our interests are multifold—documenting the diversity and invasions of alien species, understanding distribution and habitat preferences of the different

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species by soil and topographic type, and of course, habits of the favored tortoise forage plants.

In March my husband, Ray Butler, and I walked into canyons on the western edge of the Rand Mountains to sample canyon walls and the washes. We were specifically looking for plants that I had found dried and fragmented during a hot summer walk several years ago with former Board of Trustees member, E. Karen Spangenberg. Among these plants were two species of the waterleaf family—the round-leaved phacelia (*Phacelia rotundifolia*) and possibly Ives Phacelia (*Phacelia ivesiana*).

We located the round-leaved phacelia and also an unexpected find, and a new addition to the list, the thick-leaved phacelia (*Phacelia pachyphylla*) which was restricted to unusual soils on an east-facing slope of a narrow canyon. We found another tiny phacelia, which I have yet to identify and will be a new addition. Other members of the water leaf family typically found in shaded canyon walls, within shrubs, and under boulders are the small flowered Eucrypta (*Eucrypta micrantha*), Torrey Eucrypta (*E. chrysanthemifolia* var. *bipinnatifida*), and white fiesta flower (*Pholistoma membranaceum*). These species typically bloom early in the year, in late winter and early spring, drying up quickly as seasonal temperatures rise. Also in the canyons were miner's lettuce (*Claytonia perfoliata*, formerly *Montia perfoliata*) and narrow-leaved miner's lettuce (*Claytonia parviflora* ssp. *viridis*, formerly *Montia spathulata tenuifolia*). Both are species of wet or damp areas. These species were under boulders

or on shaded slopes. Both types of miner's lettuce were used in salads by early settlers.

The canyons also supported spectacular displays of yellow blazing stars, intermingled with blooming paper bag bush, the Acton Encelia, and wishbone bushes. On the canyon walls and at wash edges were sand blazing stars (*Mentzelia involucreta*) with large cream-colored flowers with orange veins in the throats, a species that has such delicate petals, yet such rough, scarios and hardy leaves and stems with barbed, rough hairs. Mixed with these, almost in bouquets, were the deep purple-flowered notch-leaved phacelia (*Phacelia crenulata*).

The canyons also are prime places to see the globe mallow or desert "five spot" (*Eremalche rotundifolia*). Belly flowers (the tiny species that one needs to see from the vantage of hands and knees and often with a 10 power hand lens) were common on the canyon floors: purple mat (*Nama demissum*), Pringle Eriophyllum (*Eriophyllum pringlei*), desert calico (*Loeseliatrum matthewsii*), Bigelow monkeyflower (*Mimulus bigelovii*), and the thread stems (*Nemacladus* species). The thread stems, members of the Bellflower Family, are miniature, easily missed, and very delicate bouquets that require a microscope to examine the flower parts.

I'll be returning at one to two month intervals to collect as the seasons progress. The buckwheats are flowering now, as well as the late blooming species in the Phlox Family (*Eriastrum*) and spurge (*Chamaesyce*). The alien mustards need to be



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Lacy Phacelia At the Desert Tortoise Natural Area  
**Photograph by Jill Heaton**

tracked also, as do the fall-blooming species of buckwheats, brickellbushes, and rabbitbrush.

I recommend the north end of the DTNA for a great hike, no matter what time of year. The views from the canyons are spectacular. During the week, the canyons are very quiet and peaceful places to be. On a clear day, the Sierra Nevada and Kiavah Mountains and Wilderness are in the far distance, with the El Paso Mountains, edge of Red Rock Canyon, and Koehn Dry Lake and Fremont Valley in mid-view.

You can access the north end of the DTNA by parking at the edge of Munsey Road and its extension on a dirt road leading east into Fremont Valley. From there you can walk south into the canyons. Some are deep and steep-walled with washes draining north from the ridge of the Rand Mountains, whereas others are short, partial drainages. Be sure to take lots of water!

## NEWS UPDATE ON WEST RANDS VEHICLE CLOSURE

By Ranger Ed Patrovsky  
 BLM Ridgecrest Field Office

The following update regards law enforcement activities near the Desert Tortoise Natural Area (DTNA) relating to the Western Rand Mountains ACEC vehicle closure.

A temporary Closure Order for the west half of the Rand Mountains, located just east of the DTNA, was enacted during March 2002. Following the enactment of the closure, existing fences were strengthened to enclose most of the area. Increased patrol presence, including the helicopter patrol described later in this article, have shut down almost all unauthorized Off-Highway Vehicle (OHV) use in the closure area. Some stretches of fence have been vandalized to gain vehicular access, but the damage has been promptly noticed and repaired. Citations have been issued to some of the few violators who continue to ride in this area.

A BLM resource management crew has performed several hundred hours of work to close and rehabilitate dozens of unauthorized OHV trails in the area. This work should improve OHV compliance with the assigned vehicle routes, which are mandatory in this sensitive area, if the area is reopened to OHV use.

The eastern half of the Rand Mountains continues to be open to OHV use on designated vehicle routes. While compliance with the route designation has not been completely successful, we are making progress. Increased patrolling has made a difference, as has the work of the resources crew described above, blocking-off and rehabilitating several trespass vehicle routes. This crew, sponsored by the BLM and the Student Conservation Association, is composed of college-age volunteers. I have been impressed with their enthusiasm and work output.

## HELICOPTER PATROL

We received funding for contract helicopter overflights of the DTNA-Rand Mountains area for the holiday weekends of Thanksgiving and Presidents'

Day last season. By all accounts, the operation was successful. No vehicle intrusions were observed in the DTNA, but a few were noticed and acted upon in the Rand Mountains. On several occasions, I observed motorcycle riders clearly off the designated vehicle routes in the Rands. We were able to direct them to waiting BLM patrol units, or on a few occasions I was able to get the pilot to land the helicopter close enough so I could jump out and cite the riders.

Many riders told us that they had observed the helicopter, and they appreciated the effort we were making. After all, most people who obey the law don't like to see others break the law with impunity.

Working on the ground during these holiday weekends were several BLM employees who volunteered for "Operation Respect", in which checkpoints were set up on the perimeter of the Rands. OHV riders were contacted, given maps, and encouraged to comply with the regulations.

In addition, Ridgecrest BLM was able to borrow a few out-of-area Rangers to beef up patrols during these peak periods, including the use of motorcycle and ATV patrols. This increased patrolling also shortened response time for OHV accidents and other emergencies.

The result has been an improvement in enforcement of the OHV regulations, better protection for the DTNA and other areas that are closed to motor vehicles, and improved compliance with the regulations.

Current plans from Ridgecrest Chief Ranger Ron Lewis are to use the contract helicopter on patrol about 3-4 times a year.

## CALIFORNIA CITY LIBRARY HOSTS DTPC EDUCATIONAL KIOSK

In July, the California City Branch of the Kern County Library became the latest host for one of the DTPC's Mojave Desert Discovery Center kiosks. These kiosks feature an interactive CD-ROM experience, videotape presentations about the desert and its wildlife, and customized maps and brochures to guide visitors to featured desert attractions. They offer a unique way for the Committee to fulfill one of its major goals: to provide information and education to the public on the threatened tortoise and its habitat, and on the associated plants and animals that share its desert ecosystem.



The California City Branch Library is also exhibiting the Committee's collection of artist Jane S. Pinheiro's watercolors of desert wildflowers found in the DTNA. These exquisite paintings were the templates for the wildflowers portrayed on the bronze panels at the DTNA Interpretive Center kiosk.

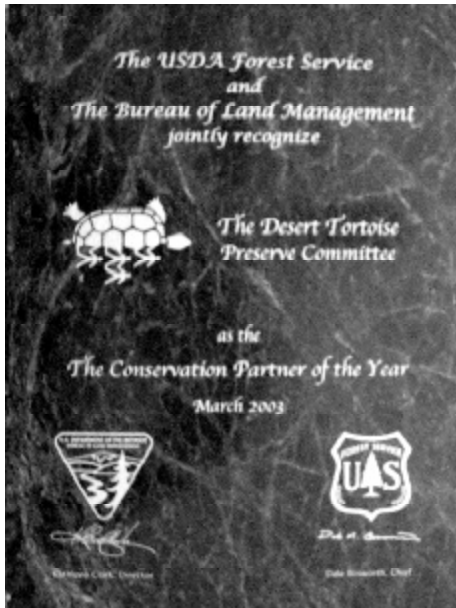
Rounding out DTPC's outreach to the Branch Library this July, was a well received presentation to the children of California City by Chuck Hemingway, this spring's naturalist at the DTNA.

The Committee thanks Sybil Thomas of the Branch Library, Susan Eldridge and Diane Duquette of the Kern County Library, Debby Kroeger of CALM, and the many others who helped facilitate these important outreach activities.



## DTPC HONORED BY BUREAU OF LAND MANAGEMENT

On March 29, 2003 Director Kathleen Clark honored the Desert Tortoise Preserve Committee as the Bureau of Land Management's "**Conservation Partner of the Year**" at the North American Wildlife and Natural Resources Conference in Winston-Salem North Carolina.



Director Clark recognized the Committee's twenty five years of outstanding cooperation and accomplishments in the conservation of species and their habitats that include:

- Working with the BLM on a cooperative basis;
- Aggressive acquisition of lands within and around the Desert Tortoise Natural Area to facilitate more cohesive management of this Area of Critical Environmental Concern;
- Assisting the Bureau and the California Department of Fish and Game in preparation of the Management Plan for the DTNA and assisting in preparing a new plan in 2002; and
- Partnering with the BLM in obtaining a National Fish and Wildlife Foundation Grant for a total of about \$150,000. The award recipient collected additional funds from the California Department of Fish and Game, USGS, and other organizations to conduct intensive tortoise monitoring on 4 square miles of tortoise habitat in the Desert Tortoise Natural Area. The funding also went to support the Naturalist and other outreach programs.

## FOURTH GRADERS SELL DESERT TORTOISE SOAP TO AID DTPC

Sarah Grady and her 4th grade students came up with a wonderful way to raise funds to help the Desert Tortoise Preserve Committee in its work – by making turtle soap!

Sarah Grady teaches at El Camino Creek Elementary School in Carlsbad. Sarah writes that while reading the paper one morning she found an article about the endangered desert tortoise. "I showed my students the article, and asked if they were interested in helping the desert tortoise. We talked about what was happening to the tortoise and why, we learned about the biology of the tortoise, and even got to see two tortoises in our classroom."

"My students looked at your website while doing a Web Evaluation in the technology lab. It seemed that we could help you. Your programs such as buying land to help preserve the tortoise, building fences, educating the public, and much more, help protect the animal we came to know."

"Well, we wanted to help, but we needed an idea. . . so we created **Grady Greats Desert Tortoise Soap**. We planned to sell it on three different days, but quickly sold out on the second day. We raised \$150. We hope this donation will greatly benefit our new friend the desert tortoise."

Our sincere thanks go to Sarah Grady and her 4th grade students aka the "Grady Greats"

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## SPRING WORK PARTY

The weather at this spring's work party was sunny and mild, perfect for viewing flowers and tortoises. Attendance at the work party was the high with 42 volunteers present for 1 or both days. Accomplishments included realigning the fence across section 5 at the northwest corner of the DTNA to the boundary to include a quarter section that was still outside the fence-line. Volunteers were delighted to be joined on the fence line by two tortoises that were out enjoying the spectacular spring wildflowers. The next day volunteers completed maintenance work on the north half of the Crawford fence in the Grass Valley Wilderness area of the Pilot Knob grazing allotment.

The Fall Work Party will be held October 11-12.

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## RECENT PUBLICATION: CHELONIAN CONSERVATION AND BIOLOGY SPECIAL FOCUS ISSUE ON GOPHERUS

The desert tortoise and its close relatives were the focus of the December 2002 issue of *Chelonian Conservation And Biology, International Journal of Turtle and Tortoise Research*. This seminal issue was cosponsored by the Desert Tortoise Council to celebrate more than 25 years of annual Desert Tortoise Council Symposia and includes more than 20 papers reporting significant and major advances in desert tortoise conservation and biology. For the benefit of our readers, the contents are listed below. The cover features a tortoise with desert candles photographed at the Desert Tortoise Natural Area by Bev Steveson who served nearly 20 years as a DTPC Trustee. *Chelonian Conservation And Biology* 4(2) is available from the Desert Tortoise Council (\$20; [www.deserttortoise.org](http://www.deserttortoise.org)) or from Chelonian Research Foundation ([www.crf.org](http://www.crf.org)).

- Defining The Desert Tortoise(s): Our First Priority For A Coherent Conservation Strategy. Kristin H. Berry, David J. Morafka, and Robert W. Murphy 249
- Is *Gopherus agassizii* A Desert-Adapted Tortoise, Or An Exaptive Opportunist? Implications For Tortoise Conservation. David J. Morafka and Kristin H. Berry 263
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- The Annual Reproductive Cycle Of The Male and Female Desert Tortoise: Physiology and Endocrinology. Valentine A. Lance and David C. Rostal 302
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- Energy and Water Balance, Diet, and Reproduction of Female Desert Tortoises (*Gopherus agassizii*). Brian T. Henen, 319
- Alien Plants and Fire In Desert Tortoise (*Gopherus agassizii*) Habitat Of The Mojave and Colorado Deserts. Matthew L. Brooks And Todd C. Esque 330
- Selective Spring Foraging By Juvenile Desert Tortoises (*Gopherus agassizii*) In the Mojave Desert: Evidence of an Adaptive Nutritional Strategy. Olav T. Oftedal, Scott Hillard, and David J. Morafka 341
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- An Experimental Assessment Of Color, Calcium, And Insect Dietary Preferences Of Captive Juvenile Desert Tortoises (*Gopherus agassizii*). Chris L. Okamoto
- A Landscape Sampling Protocol For Estimating Distribution And Density Patterns Of Desert Tortoises At Multiple Spatial Scales. Anthony J. Krzysik
- Regional Desert Tortoise Monitoring In The Upper Virgin River Recovery Unit, Washington County, Utah. Ann M. Mcluckie, Deborah L. Harstad, Jesse W. Marr, and Rick A. Fridell 380
- Spatial Organization Of Desert Tortoises And Their Burrows At A Landscape Scale. Jeffrey T. Duda, Anthony T. Krzysik, and Joel M. Meloche 387
- Patterns Of Burrow Use By Desert Tortoises (*Gopherus agassizii*) In Southcentral Nevada. Kurt R. Rautenstrauch, Danny L. Rakestraw, Greg A. Brown, James L. Boone, and Patrick E. Lederle 398
- Comparative Dispersion Of Neonate And Headstarted Juvenile Desert Tortoises (*Gopherus agassizii*): A Preliminary Assessment Of Age Effects. Lisa C. Hazard and David J. Morafka 406
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- Using Growth Ring Counts To Age Juvenile Desert Tortoises (*Gopherus agassizii*) In The Wild. Kristin H. Berry 416
- A Condition Index For The Desert Tortoise (*Gopherus agassizii*). Kenneth A. Nagy, Brian T. Henen Devesh B. Vyas and Ian R. Wallis 425
- Effects On Survival Of Desert Tortoises (*Gopherus agassizii*) Urinating During Handling. Roy C. Averill-Murray 430
- Deaths Of Desert Tortoises Following Periods Of Drought And Research Manipulation. Kristin H. Berry, E. Karen Spangenberg, Bruce L. Homer, and Elliott R. Jacobson 436
- Impacts Of Vehicle Road Traffic On Desert Tortoise Populations With Consideration Of Conservation Of Tortoise Habitat In Southern Nevada. Karin Von Seckendorff Hoff and Ronald William Marlow 449
- Comparison Of Desert Tortoise (*Gopherus agassizii*) Populations In An Unused And Off-Road Vehicle Area In The Mojave Desert. R. Bruce Bury & Roger A. Luckenbach 457
- Reserve Area Requirements For Gopher Tortoises (*Gopherus polyphemus*). Jeannine Ott Eubanks, Jeff W. Hollister, Craig Guyer, and William K. Michener 464
- A Comparison Of GIS and Survey Estimates Of Gopher Tortoise Habitat and Numbers Of Individuals In Florida. Earl D. Mccoy, Beth Stys, and Henry R. Mushinsky 472
- Population Biology Of The Gopher Tortoise (*Gopherus polyphemus*) In Southeast Georgia. David C. Rostal and Douglas N. Jones, Jr. 479
- Home Range And Dispersal Of Texas Tortoises, *Gopherus berlandieri*, In A Managed Thornscrub Ecosystem. Richard T. Kazmaieri, Eric C. Hellgrenz, and Donald C. Ruthven,
- Application Of Diagnostic Tests For Mycoplasmal Infections Of Desert And Gopher Tortoises, With Management Recommendations. Daniel R. Brown, Isabella M. Schumacher, Grace S. Mclaughlin, Lori Wendland, Mary B. Brown, Paul Klein, & Elliott Jacobson 497

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All contributors receive the quarterly newsletter *Tortoise Tracks*.

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My area of interest/expertise is:  
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**Natural History Notes**

**Spring Annuals and the Desert Tortoise**

This spring's spectacular wildflower displays at the DTNA gave desert tortoises an excellent opportunity to replenish their energy reserves, which must carry them through the harsh summer and long winter. This is especially fortunate given last year's intense drought in which very few annuals germinated. The majority of the tortoise's diet consists of fresh, succulent annuals available only in the spring. Although tortoises will feed on dried grasses and annuals in the summer, the bulk of their energy reserves is gotten from the spring annuals of April and May. By June, in most years, only the dried up remnants of annuals are left, depending on temperature and rainfall conditions. The diversity and abundance of spring annuals varies year to year depending on the timing and amount of winter rainfall. The timing and amount of precipitation from this winter's El Niño weather have resulted in both a high biomass of flowers and species diversity. Desert tortoises are known to be selective in their foraging choices, and select particular plants among all the species available. Tortoises select plants that are high in water and protein, and low in potassium. Many desert plants contain high levels of potassium. A build up of potassium in tortoises can be potentially toxic, and tortoises generally avoid these plants. Researchers have studied what plants tortoises are eating at the DTNA by watching from a distance with binoculars and recording bite counts. One study recorded over 34,000 bites counts, and revealed that tortoises often actively select the rarer, more nutritious plants among a sea of less palatable species.



# Tortoise Tracks

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25 January, 2004  
Desert Tortoise Preserve Committee  
Annual General Meeting & Banquet

11-12 October 2003  
Desert Tortoise Preserve Committee's  
Fall Work Party

**DTPC CALENDAR OF EVENTS**

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