
Tortoise Tracks

The Desert Tortoise Preserve Committee, Inc.

Summer 2010 30:2

Monitoring of Existing Range Improvements at Pilot Knob Completed by Marlene Ishii

We arrived at Cuddeback Dry Lake to unknown driving conditions. The area had experienced several days of rain which can turn a dry lake bed into a large mud puddle. This did not deter a team of Desert Tortoise Preserve Committee (DTPC) Board Members and volunteers from traveling to the Pilot Knob allotment on April 25th. The team included Dr. Kristin Berry, Ray Butler, Jane McEwan, Wayne Lanier, Chuck Hemingway, Dave Zantiny, Steve Ishii, and Marlene Ishii.

The Pilot Knob allotment is located 25 miles south of Ridgecrest, California and east of Cuddeback Dry Lake. This Pilot Knob allotment is a favorable recovery and preservation environment for the desert tortoise and Mojave ground squirrel. The allotment provides a remote location away from off-highway vehicle (OHV) traffic, variable elevation to assist in habitat migration due to global warming, and contains existing water sources that will aid in recovery efforts for the desert tortoise.

The purpose of the site visit was to assess, document, and photograph the current condition of the permitted and non-permitted range improvements (e.g. wa-



Pilot Knob Range Improvement Assessment Team

ter tanks, water troughs, fencing, cattle guards, and corrals) spread across the nearly 80 square miles that make up the Pilot Knob allotment. The resulting report was used by the DTPC and the Bureau of Land Management (BLM) to develop an action plan for the maintenance and removal of the allotment's existing range improvements.

The Pilot Knob allotment's former grazing rights holder allowed livestock overgrazing. The elimination of grazing and OHV traffic has allowed the habitat to improve to a certain degree throughout the

allotment. The vegetation includes Joshua Trees, apricot mallow, burrow bush, checker fiddle-neck, creosote, desert dandelion, forget-me-nots, goldenhead, owl's clover, spiny hopsage, winterfat, and other desert plants known throughout the Mojave Desert. Alien plants included cheat grass, filaree, red brome, mustard, and schismus species.

Most of the permitted improvements were evaluated and a few non-permitted improvements were also found. In the Blackwater Well area, once the center of the ranching activities, only the

Continued on pages 2-3

Crawford chute and corral structures remain. The Pilot Knob allotment's cattle guards still exist and are in good condition. Water tanks and troughs are located throughout various areas on the allotment. These structures do not contain any water and have been damaged with bullet holes. Shell casings litter the area around the water structures and some areas contain fire rings indicating visitation.

An additional non-documented corral was also found. The site included a corral with old posts, fencing, piping, and a water tank. Similar to the other locations containing water tanks, the tanks were damaged with bullet holes and the area was littered with bullet casings.

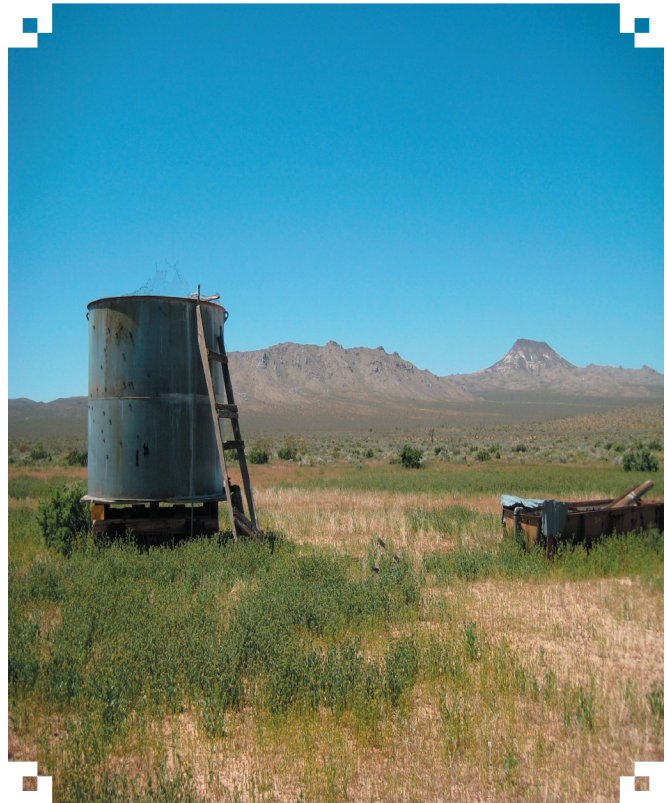
The group had the following recommendations on how to proceed with the existing range improvements:

All Fencing and Cattle guards: These items should remain. The fencing helps to prevent cross country travel from damaging the allotment and serves as a boundary to the restricted Naval Air Weapons Station



Existing cattle guard at Pilot Knob

property. The cattle guards need to be renovated to prevent young tortoises from slipping between the slots and becoming trapped. Removing the cattle guards would leave a void in the trail, encouraging visitors to create their own impromptu routes around this void and would also create a disturbance, potentially aiding the spread of invasive plants.



Water tank riddled with bullet holes

Water Tanks, Water Troughs, and Wooden Posts: All of these items should be removed. The water tanks are large enough to draw the attention of visitors, encouraging unauthorized cross country travel in the area. The tanks have been used for target shooting on multiple occasions. The water troughs are an ar-



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The Desert Tortoise Preserve Committee, Inc.
 Founded 1974

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tificial water source for human subsidized predators, such as coyotes. The wooden posts in the corral are a fire hazard and serve as artificial perches for another human subsidized predator, the common raven. Ravens are known to be predator of both young and adult desert tortoises. The loss of tortoises to raven predation is a major threat to the long-term survival of the desert tortoise population.

Although, desert tortoises were not seen, Mojave ground squirrels, lizards, and jack rabbits were observed. Many burrows were found throughout the allotment and a few potential desert tortoise burrows were noted and documented. Given the damage done by the prior owner's overgrazing, evidence of desert wildlife activity was a welcome sight.

Despite uncertain driving conditions, it was a great field day at the Pilot Knob allotment and the group was happy with their overall findings. The land that was once overgrazed now contains new growth of desert foliage as it continues to recover. It was a clear day with temperatures barely reaching 80 degrees - just another perfect spring day in the desert!

Special thanks to the following for their contributions to the DTPC:

**San Diego Turtle and Tortoise Society
Kern County Chapter of the CTTC
Cactus Wren Garden Club
Arthur Lillund
Lucy Khoury**

Donations were made in the names of the following individuals:

**Laura Stockett
Craig Enridge**

Thanks to the following volunteers:

**Chuck Hemingway
Monica Dirac
Laura Mogg
Charlie Massieon
Scott Rivera
Robert Villa
Dave Zantiny
Steve and Marlene Ishii**

Natural History Notes



Photograph and article by Mark Massar

I came upon the gruesome scene pictured above on the entrance road to the kiosk at the Desert Tortoise Natural Area (Kern County, CA) this Memorial Day. The temperature was near 85°F. This gravid (pregnant) leopard lizard (*Gambelia wislizenii*) was apparently attempting to eat an adult male desert horned lizard (*Phrynosoma platyrhinos*) before both were killed on the road. Leopard lizards generally eat more narrow bodied lizards like whiptail lizards (*Cnemidophorus tigris*) and side-blotched lizards (*Uta stansburiana*). In fact, a portion of this lizard's stomach contents is visible in the photograph and includes a tail of a whiptail lizard. Leopard lizards are also known to attack and eat juvenile horned lizards, which are smaller and less well armored than adults. Adult horned lizards when attacked will try to protect themselves by flattening their bodies and aiming their horns. This adult male horned lizard was clearly too big to be successfully eaten. Sometimes predators die from trying to eat adult horned lizards. There are cases of hawks having their windpipes punctured by the lizard's horns or rattlesnakes choking to death. In these cases both predator and prey perish.

Not visible on the black and white photograph are the bright reddish orange spots and bars on the underneath of the tail and sides of the body which female leopard lizards develop during the breeding season. This female had five pea-sized eggs. Stebbins (1956) recorded a May 31 egg-laying date for a leopard lizard in Kern County with eggs of similar size.

Seed Dispersal by Vehicles

by Dr. Lisa Rew and Fredric Pollnac

If you have ever driven your vehicle off-road or on an unpaved road surface, chances are that you have played an active role in the seed dispersal of one or more plant species in the area through which you were driving. This may not seem like much of a problem unless one of those species happens to be invasive. Even if your vehicle only moved a few seeds of this invasive species a short distance, natural events such as wind gusts, surface runoff, or the movement of wild animals could have dispersed the seed just as far. In this case, your vehicle did not augment the dispersal of the species in comparison to natural events. On the other hand, what if numerous seeds became attached to your vehicle and stayed there for several hundred miles before falling off in an area where that invasive species is not yet present? If the conditions were favorable, you might have unknowingly created a new invasion front.

Although the potential for this type of event to occur has been recognized for a long time, only a few scientific studies have documented the presence of seeds on motor vehicles, thereby confirming that seeds can, in fact, become attached to vehicles. Such general information, while often informative for land managers, does not provide the detailed information that is needed to justify management decisions or shifts in current management policies. In the hypothetical case



mentioned above, what are the odds that a seed would be transported over such a long distance, and how many seeds might become attached to the vehicle through the course of its travels? A plant ecology research team at Montana State University, lead by Dr. Lisa Rew, has begun to try to answer some of these questions in an effort to provide managers with the information they need to make informed decisions about an issue which has, until now, lacked the support of quantitative data.

In 2007, a series of experiments were conducted to evaluate the effectiveness of vehicle washing units in terms of cleaning debris off of vehicles and provide a set of methods for examining the number of seeds transported on various types of vehicles. Commercial vehicle washing units typically clean mud and debris from vehicles using undercarriage washers and high-pressure hand sprayers. The wash water is then subjected to an extended filtration and settling process, aimed at removing waste (sediment and other large particles) from the water so that it can be reused for future washes. Dr. Rew's team was interested in seeing if seed material could be isolated through this process so that the waste from the wash of a particular vehicle could be used to estimate the number of seeds that vehicle had transported. They discovered that, though the washing and filtration process kills some of the seeds, many are left unharmed. Therefore, waste samples can be transferred to a greenhouse where seedlings can be counted and identified as they emerge from the sediment. Applying a correction factor for the amount of seed destroyed in the washing process provided an effective estimate of the number of non-dormant seeds attached to the vehicle that was washed.

From 2007 to 2009, several additional experiments were performed to investigate seed transport on different types of vehicles and on various road surfaces. One set of experiments focused on military vehicles (ranging from Humvees to A-1 Abrams tanks) during training exercises in Idaho and Montana. This study found that vehicles pick up a large amount of seed even when driven on dry and unpaved roads in June, with more seeds transported on tracked vehicles than wheeled ones. As one may imagine, more seeds were found on vehicles driven off road than on unpaved roads. Interestingly, those seeds fell off as the vehicle drove along a paved road. These experiments showed that a four wheel drive SUV/truck would pick up, on average, 176 seeds per 50 mile trip on dry unpaved road in June. Comparative information for wet summer conditions is forthcoming.



Another set of studies focused on consumer four wheel ATVs. ATVs were driven set distances in off-trail and on-trail settings. Dr. Rew's team found that, within their study area, ATVs picked up approximately 15 times more seeds off-trail than on-trail in the fall, and approximately 80 times more seeds off-trail than on-trail in early summer. During this study, they saw that ATVs were capable of picking up as many as 200,000 seeds over 48 miles of travel (about 4200 seeds per mile), out of which roughly 750 were from noxious weeds.

To gain a more complete picture of this issue, other questions must be answered. For example, if a seed becomes attached to a vehicle, how far is it likely to be transported before becoming detached from the vehicle? Dr. Rew's team is currently performing experiments that aim to answer that question. For now, the information on the number of seeds collected on vehicles over certain distances suggests that the theories about vehicles being vectors for the transport of plant species have merit.

Aside from actions taken by management agencies, the problems arising from this issue can also be minimized by the application of common sense on the part of the individual. Avoid driving offroad through areas infested with invasive plant species whenever possible. If you have been traveling off-road or on unpaved road surfaces where invasive plant species are present at the roadside, make your best effort to clean off your vehicle as soon as you can before or after leaving the area. If you happen to see a voluntary vehicle wash station, pull over and take advantage of it. With a trained crew, washing a vehicle takes about three to six minutes, and is a small price to pay to help prevent the spread of undesirable plant species.

This work was funded by project SI-1545 from the Strategic Environmental Research and Development Program (SERDP) and grant 2008-005 from the Montana Noxious Weed Trust Fund.

Dr. Rew is an Assistant Professor of Plant Ecology in the Land and Resources and Environmental Sciences Department (LRES) at Montana State University. Fredric Pollnac is a PHD student in LRES.

This article was reprinted from the Center for Invasive Plant Management April 2010 newsletter with permission from Dr. Lisa Rew. See www.weedcenter.org/newsletter/docs/2010-04-seed-dispersal.pdf

Tortoises Through the Lens-Program Update

David Lamfrom

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The first week of May 2010 marked the opening of the “Tortoises Through the Lens” photography exhibit. The exhibit, which runs until August 7, 2010, can be viewed at the Desert Light Gallery at the Kelso Depot. Serving as the main visitor center for Mojave National Preserve, the Kelso Depot is a restored historic building and a treasured piece of Western railroad history. The hours are 9am-5pm daily. The students, and now emerging artists, produced an exhibit of their 36 most stunning photos, ranging from 11x14 to 18x24. Shot during the course of their 18 month long project, the subject matter ranges from landscapes to wildlife to abstracts and even threats



Photograph by Marcus Estavane

to the environment. The photos represent the diverse and profound experiences they had throughout the Mojave Desert. Their adventures began in Joshua Tree National Park, and crisscrossed the Western and Eastern Mojave, to encompass wild and beautiful terrain in Mojave National Preserve, the Desert Tortoise Natural Area, Rainbow Basin, and Red Rock National Conservation Area. In addition to their photographic field study, the students attended lectures on photography, tortoise biology, ecology, and conservation, and learned about threats to the tortoise; including global warming.

Excitingly, the students also created a desert tortoise conservation photobook. The 64 page work covers the life-cycle, ecology, threats, and conservation efforts for the desert tortoise and is being published by



Photograph by Rachel Wilson

Sunbelt Publications. This photobook, “TORTOISES THROUGH THE LENS: A VISUAL EXPLORATION OF A MOJAVE DESERT ICON” features the photos of the students, and is currently available for pre-order (free shipping!) from Sunbelt’s website:

<http://www.sunbeltbook.com/preorder.asp>

All proceeds raised from the sale of the photobook will be used in further desert tortoise conservation efforts, under the direction of the students involved in the project.

Audit Committee Members Needed

The Board of Trustees is looking for members of the Desert Tortoise Preserve Committee, Inc. with experience reviewing financial records who may be interested in serving on the Audit Committee. Interested parties should contact Jane McEwan at (760) 384-2615 or e-mail mcewanmj@gmail.com. The Audit Committee meets three times a year via conference call, so travel to meeting locations is not a requirement for participation.

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

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Calendar of Events

August 5-6, 2010: The Southwest Partners for Reptile and Amphibian Conservation (PARC) annual meeting will be held in Fort Collins, Colorado. For more information visit www.swparc.org

August 14, 2010: The California Turtle and Tortoise Club Inland Empire Chapter Annual Turtle and Tortoise Show will be held from 10:00 AM-4:00 PM at the Redlands Senior Citizen Center, in Redlands, CA. For more information visit www.tortoise.org/inlandempire.

August 16-20, 2010: The Annual Symposium on the Conservation Biology of Tortoises and Freshwater Turtles sponsored by the Turtle Survival Alliance to be held at the Rosen Plaza Hotel in Orlando, Florida. For more information visit www.turtlesurvival.org.

October 16-17, 2010: The Desert Tortoise Preserve Committee is hosting our annual Fall Work Party at the Desert Tortoise Natural Area. For more information e-mail dtpc@pacbell.net or call (951) 683-3872.

November 6-7, 2010: The Desert Tortoise Council's 19th Annual Introduction to Desert Tortoise Surveying, Monitoring, and Handling Techniques Workshop will be held at the Springhill Suites Marriott in Ridgecrest, California. The workshop is currently full, but if you'd like to be placed on the waiting list, please contact us at tortoiseorg@gmail.com. This workshop is held only once a year.

February 18-20, 2011: The 36th Annual Symposium of the Desert Tortoise Council will be held February 18-20, 2011 at Sam's Town in Las Vegas, Nevada. Registration information will be available in Fall 2010. See www.deserttortoise.org for more information.

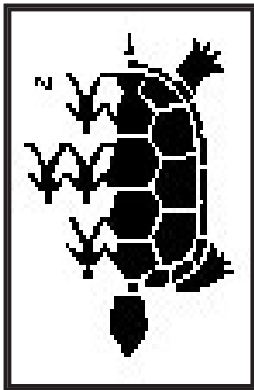


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This work party will provide a great opportunity for individuals to learn more about arid land restoration and some of the techniques that are currently being employed by the DTTC to improve the habitat at the Desert Tortoise Natural Area.

Activities will include:
Maintenance of Restoration Area
Collection of Vertical Mulch
Planting & Seeding
Desert Clean-up
Optional Camping

The dates for the event are October 16-17, 2010!
If you are interested in participating please
call (951) 683-3872 or e-mail the DTTC at
<dtpc@pacbell.net>.

**THE DESERT TORTOISE
PRESERVE COMMITTEE INVITES
YOU TO ATTEND OUR
FALL WORK PARTY!!**

