

**Translocation and Monitoring Plan for
Desert Tortoise (*Gopherus agassizii*) for
Copper Mountain Community College District Construction Projects:
State Incidental Take Permit No. 2081-2005-028-06
Federal Incidental Take Permit No. TE143444-0**

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December 2007

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1.0 Summary

Copper Mountain Community College District (CMCCD) herein provides a Translocation Plan as part of a previously submitted Habitat Conservation Plan (HCP) pursuant to site-specific Federal section 10(a)(1)(B) and State 2081 Endangered Species Act incidental take permits. The Translocation Plan is one of the actions CMCCD will take to minimize impacts to the federally listed, threatened desert tortoise (*Gopherus agassizii*) on approximately 157 acres located in the unincorporated community of Joshua Tree, San Bernardino County, California (Township 1 North, Range 7 East, southeast quarter of Section 26).

CMCCD proposes to expand the Copper Mountain College campus from the existing 9 acres± onto 157 acres that it owns in adjacent areas. To minimize impacts during construction projects, CMCCD will fund the maintenance and monitoring of tortoises in the on-site Translocation Area. Post-construction activities will provide for removal of the perimeter fence and subsequent protection of tortoises. Herein, CMCCD outlines measures that have been and will continue to be implemented to translocate tortoises out of harm's way during the phased expansion of the campus.

2.0 Background

2.1 CMCCD Expansion Plan

CMCCD proposes to expand the Copper Mountain Community College campus from an existing 9 acres± (8.59 acres) onto 72 acres± (i.e., 71.57 acres) that it owns in adjacent areas. An additional 85 acres± (84.96 acres) within the plan area would be set aside as a Translocation Area and managed to protect resident and displaced tortoises. Construction would be phased, beginning with construction of Solar Field East, Multi Use Sports Complex, Copper Mountain Drive East, Copper Mountain Drive West, Brulte Way, and Parking E in 2007 and 2008. During the next 11 years, CMCCD envisions constructing those facilities listed in Exhibit 1 of the HCP.

2.2 Habitat Conservation Plan and Permits

The HCP was prepared by Circle Mountain Biological Consultants (CMBC) in 2006 on behalf of CMCCD. The HCP outlines a conservation strategy that will be implemented by CMCCD to minimize and mitigate, to the maximum extent practicable, impacts to the desert tortoise under authority of section 10(a)(1)(B) of the Federal Endangered Species Act of 1973, as amended (FESA) and Section 2081 of the California Endangered Species Act (CESA).

CMCCD was issued a FESA section 10(a)(1)(B) incidental take permit [10(a)(1)(B) permit] from the U.S. Fish and Wildlife Service (Service) on July 31, 2007. The permit authorizes incidental take of the federally listed, threatened desert tortoise from 157± acres of occupied habitat in the southeastern portion of the West Mojave Desert. CMCCD was previously issued a CESA 2081 incidental take permit from the California Department of Fish and Game (Department) on September 21, 2006.

2.3 Responsible Parties

At the time of this writing (December 2007), CMCCD has identified *Richard Treece*, Director of Maintenance and Operations as the Field Contact Representative (FCR) to ensure that all protective measures identified by the Service and Department in respective incidental take permits are implemented in a timely and conscientious manner. CMCCD has identified *Paul Delaney*, PhD, Professor of Biology as the primary college staff person overseeing implementation of this Translocation Plan and management of the Translocation Area. And, *Ed LaRue* and *Sharon Dougherty* of CMBC have been approved as Authorized Biologists by the Service and Department.

Given the long-term nature of this Translocation Plan and implementation of the incidental take permits for at least 16 years, there are likely to be changes in staff. CMCCD is committed to the long-term protection and conservation of tortoises within the Translocation Area and will ensure that all pertinent staffing positions are filled with qualified people as they are vacated. As required by the incidental take permits, résumés of all potential Authorized Biologists and Designated Biologists will be submitted to the Service and Department prior to using them to implement authorized activities. Other staffing changes will be reported in applicable monitoring reports.

3.0 Establishment of Translocation Area

Concurrently with development, CMCCD will ensure that on-site minimization measures, including establishment of a Translocation Area, are implemented to protect tortoises during construction. Off-site mitigation measures, such as acquisition and management of compensation habitat lands, will also be carried out to provide for conservation of desert tortoises in the region. These measures will contribute to the regional conservation of the tortoise and off-set impacts associated with campus expansion.

CMCCD will maintain approximately 85 of the 157 acres in a natural state, to be used as a Translocation Area to receive tortoises displaced from developed portions of the remaining 72 acres, which would be developed over the next 11 years. The Translocation Area is labeled “Desert Studies Demonstration” on the Project Site Map in the CMCCD Habitat Conservation Plan (also shown in Appendix 9.1 of this Translocation Plan). The Translocation Area is positioned, in part, to encompass some of the best tortoise habitats along the centrally-located wash on the project site, including the areas where all five tortoises were observed during a 2002 survey by CMBC.

4.0 Use of Translocation Area

The function of the Translocation Area is to protect resident tortoises found there at the time of fencing and to receive additional tortoises translocated there from on-site impact areas. The Translocation Area will not receive tortoises removed from other development sites that are not associated with campus construction. The monitoring programs envisioned for the area are described below in section 5.0.

CMCCD Translocation Plan for Desert Tortoises

The Translocation Area is intended to have a beneficial impact on resident tortoises by protecting them from on-going impacts such as domestic dog predation, crushing by off-highway vehicles, crushing by vehicle use on Highway 62, etc. It is also intended to house and protect all resident tortoises within the area and those tortoises that are displaced during authorized construction activities in the campus expansion area.

Prior to any construction activities, CMCCD will install temporary tortoise-proof perimeter fences around project areas and a permanent fence around the Translocation Area. The permanent tortoise-proof fencing will consist of a standard chain link fence with 24 inch by 1 inch by 2 inch mesh, galvanized steel hardware cloth affixed to the bottom. The mesh will be buried 6 to 12 inches below the soil surface to prevent desert tortoises from digging in or out.

The fence will be equipped with tortoise-proof access gates and advisory signs. One gate design includes a 24-inch by ½-inch hardware cloth attached to the lower two feet and flush with the bottom of the gate. Beneath the gate, parallel to the gate when closed, an 8-inch by 8-inch barrier, such as a Douglas fir beam, would be buried with the top edge flush to the ground surface. The advisory signs will warn against drop-off of unwanted pets (to reduce the risk of diseased individuals being released into campus populations of desert tortoise), and inform about the protected habitat area for desert tortoises.

Actions associated with the establishment and management of the Translocation Area will include:

- 1) Translocation Area fence installation.
- 2) Capture and marking of desert tortoises on construction sites and removal to the Translocation Area.
- 3) Activities associated with annual desert tortoise survey and data collection within the desert tortoise Translocation Area.
- 4) Maintenance of “native” and translocated desert tortoises in captivity within the Translocation Area.

5.0 Monitoring Within Translocation Area

CMCCD will monitor desert tortoises within the Translocation Area to ensure that translocation is successful at minimizing impacts due to campus construction, and to determine population demographic information, including age-specific mortality, morbidity, and fecundity. A schedule of such population surveys is listed in an appendix to this document. The following actions would be taken to monitor the Translocation Area.

- Tortoises in the Translocation Area will be permanently marked following the methodology described in “Guidelines for Handling Desert Tortoises during Construction Projects” (Handling Guidelines) (Desert Tortoise Council 1999).
- CMCCD will maintain records of all activities and make them available to the Service and Department upon request.
- A monitoring report will be submitted to the Service and Department no later than January 31st of each year. This report will be in addition to the phase-end reports discussed herein.

5.1 Tortoise Population Surveys

As given herein, annual surveys will be performed in April to identify the total number of desert tortoises present in the Translocation Area.

- There will be annual surveys of the area to identify the total number of animals present, to be carried out at roughly the same time each year (e.g., April). The entire Translocation Area will be surveyed twice following Service protocol (U.S. Fish and Wildlife Service 1992).
- UTM coordinates (North American Datum 27) and other descriptive data will be taken for each tortoise and burrow located during these surveys.
- As part of this survey, each tortoise will be weighed and measured, and a visual assessment of the health of the animal carried out to detect evidence of disease.
- Both the plastron and carapace of each living animal will be digitally photographed.
- UTM coordinates, digital photographs, the cause of death, and other pertinent information listed herein will be recorded for each tortoise carcass found during annual surveys and other monitoring activities. Surveyors will try to determine if the tortoise had been previously marked, and if determinable, record that number. Upon locating a dead or injured desert tortoise, the Service-authorized biologist would immediately notify the Service's Ventura Fish and Wildlife Office (VFWO). If determinable, the biologist would document the cause of death. Following initial notification, the Copper Mountain Community College District (District) would make written notification within five calendar days and include the date, time, and location of the animal, a photograph, and any other pertinent information. If appropriate, the District will request written permission from the VFWO to retain the carcass for educational purposes.

5.2 Marking (Numbering System) and Tracking Tortoises

Desert tortoises within the Translocation Area will be permanently marked following the methodology described in the Handling Guidelines (Desert Tortoise Council 1999). CMCCD will coordinate with Joshua Tree National Park, Twentynine Palms Marine Corps Base, Bureau of Land Management, and other entities that may have marked tortoises in the vicinity to ensure that the numbering system used on campus will not be confused with other systems used in the region.

Transmitters may be affixed to the carapace of the tortoises to facilitate detection and monitoring. CMCCD (District) will contact the Service's Ventura Fish and Wildlife Office (VFWO) to receive a minor amendment to its permit before initiating this activity. The District will follow appropriate guidance from the VFWO regarding the specifications and placement of transmitters on desert tortoises.

Copper Mountain College biology professor, Paul Delaney, PhD accompanied Kurt Bacon, biological science technician at Joshua Tree National Park during a tortoise telemetry survey in the Park in June 2007. Mr. Bacon recommended Holohil RI-2B transmitters in the 10 gram and 15 gram versions, as well as the Telonics receivers (TR-4 and TR-5 models) with RA-2AK very high frequency antennas.

5.3 Taking Health Profiles of Tortoises

The health status of desert tortoises within the Translocation Area will be assessed using the methodology described in the Handling Guidelines (Desert Tortoise Council 1999), or with more recent scientific literature. The assessment would include weighing, measuring and performing a visual health assessment of tortoises to detect evidence of disease on an annual basis. X-ray imaging may be used to assess the clutch size (number of eggs present) in gravid females. The CMCCD (District) will contact the VFWO to receive a minor amendment to its permit before initiating this activity. The District understands that this process will require a VFWO review of the procedures that the District proposes to use to obtain the X-ray images.

5.4 Body Fluid Sampling for Disease Status

Tortoises exhibiting signs of upper respiratory tract disease (URTD) or other transmissible infections will be quarantined within a separately-fenced sub-area of the Translocation Area. The Service (VFWO) and Department will be contacted to consult about the most appropriate, recent, and evidence-based protocols to implement for the care and handling of individual desert tortoises with URTD. These may include microbiological assessment of pathogenic microbes present in nasal or ocular fluid discharges, and blood samples taken from the brachial artery of individual tortoises (Berry et al 2005).

CMCCD (District) will contact the VFWO to obtain a minor amendment to its incidental take permit prior to initiating this activity. When applying for this amendment, the District will provide VFWO with information concerning the purpose of the sample collection, procedures used to collect samples, the laboratory where analysis will occur, and the type of laboratory analysis that will be performed.

5.5 Creating Artificial Burrows (In Off Season)

Desert tortoise-proof fences will be sited to exclude burrows from project site areas when possible. In the event a tortoise needs to be moved from a burrow, it would be hand-excavated by the Authorized Biologist and translocated to a burrow of appropriate size in the Translocation Area. As discussed in the Handling Guidelines (Desert Tortoise Council 1999), it is also important that orientation of burrows and eggs, environmental temperatures, and other factors be taken into consideration to govern translocation activities.

5.6 Translocating Eggs

Any burrows determined to be in harm's way on the project site will be hand-excavated. Each burrow will be carefully checked for viable desert tortoise eggs. When found, such eggs would be translocated to a new nest in the CMCCD Translocation Area. Eggs will be marked prior to movement to maintain appropriate orientation upon relocation. All movement of eggs would be done in such a way that movement does not adversely affect viability of eggs, as discussed in the Handling Guidelines (Desert Tortoise Council 1999). Translocated nests will be adequately marked so they can be relocated in the fall (September to October) to determine hatching success rates. Every effort will be made to minimize nest depredation by kit foxes, coyotes, domestic dogs, and other predators.

6.0 Long Term Monitoring Schedules

A schedule of monitoring and compliance activities associated with the Translocation Area is listed below in Sections 6.1 through 6.3. A Compliance Report Schedule is located in Appendix 9.3 of this Translocation Plan.

6.1 Annual Surveys

- Tortoise population census in Translocation Area (April).
- Health status assessment of individual marked tortoises in Translocation Area (April).
- Raven predation on hatchling tortoises to be determined by looking for and collecting data on tortoises showing characteristic raven predation (as carcasses are encountered during scheduled monitoring activities).
- Assessment for invasion of non-native plant species in Translocation Area (late spring).

6.2 Monthly Surveys

- Assessment of predator and raven subsidies near new facilities around Translocation Area, which will entail looking for raven nests and searching beneath potential perch sites for depredated juvenile tortoise carcasses.

6.3 Weekly Surveys

- Raven census and raven nest counts in or near Translocation Area.
- Monitor fence lines surrounding Translocation Area.

6.4 Periodic Monitoring and Compliance Activities

- Clearance surveys and monitoring prior to and during any ground-disturbing activities:
 - Monitoring of fence installation.
 - Delineation of work site boundaries with flagging (FCR).
- Tortoise awareness program for construction personnel, staff and students.
- Trash and predator-subsidy removal from Translocation Area.

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- Fence repair.
- Human impacts monitoring.
- Re-vegetation and vertical mulching (if necessary) in areas showing degradation from OHV use.
- Compliance reports.

6.5. Adaptive Management

CMCCD is committed to protecting resident and project-related displaced desert tortoises within the Translocation Area while sharing successes and failures with the regulatory agencies, pertinent students and staff, and other affiliates. In addition to changes and unforeseen circumstances defined in the HCP, CMCCD is committed to implementing an adaptive management program that functions within the constraints of the incidental take permits. Adaptive management decisions will be made with input from pertinent regulatory agency staff in a timely manner prior to implementing actions not already explicitly identified in the incidental take permits. Pertinent CMCCD staff (Dr. Delaney at this time) will remain abreast of the latest scientific methods that affect development and operations of the Translocation Area and local conservation/education programs that affect campus activities.

7.0 Biologist Designated by CMCCD

This document is intended to serve as a formalized, written Translocation Plan, and was provided to pertinent regulatory agency personnel for their consideration prior to construction. CMCCD has identified Dr. Delaney as the senior biologist responsible for overseeing the Translocation Plan and managing the Translocation Area. The Handling Guidelines and factors given above will be considered for this project when the biologist designated by CMCCD, Paul Delaney Ph.D., handles a tortoise at the project site on subsequent dates.

Details about management of the Translocation Area and permit compliance will be given in periodic, dated Compliance Reports, and included on the “Data Sheet for Handling Desert Tortoises,” maintained at CMCCD by Dr. Delaney (see appendices). If Dr. Delaney has judged that the tortoise was in harm’s way at the construction site, he will move the tortoise into the appropriate part of the Translocation Area. Ill tortoises will be quarantined in a sub-area that is separately-fenced and separated by a road from the other part of the Translocation Area. Tortoise burrows and eggs encountered will be managed according to the Handling Guidelines (Desert Tortoise Council 1999).

Measures are outlined in the incidental take permits that are to be implemented if a dead or injured desert tortoise is found. CMCCD intends to use the services of Dr. Stephen Davis, DVM or other qualified veterinarian at the Hi Desert Animal Hospital, currently located at 70512 Twentynine Palms Highway, Twentynine Palms, California, (760) 367-9511. To facilitate these measures, it will be standard practice for CMCCD monitors and Authorized Biologists to check areas both in front of and behind heavy equipment as the right-of-way is being cleared of plants (brushed) or bladed by construction equipment.

This draft Translocation Plan is being provided to the U.S. Fish and Wildlife Service (Raymond Bransfield and Judy Hohman), California Department of Fish and Game (Rebecca Jones), and Circle Mountain Biological Consultants (Edward LaRue) for

review and comment. CMCCD will modify this plan as necessary to address any comments received from these individuals. Please direct comments to Paul Delaney of CMCCD using the following information. Address: Paul Delaney Ph.D., Copper Mountain College, 6162 Rotary Way, P.O. Box 1398, Joshua Tree, CA 92252; work phone: (760) 366-3791, extension 0257; email: pdelaney@cmccd.edu.

8.0 Literature Cited

- 1) Berry, K.H., Demmon A., and Bailey T. 2005. Protocols for drawing blood from the brachial plexus of desert tortoises: Instructions for ordering equipment and culture media; summary of how to draw blood; information on how to contract for laboratory analysis and ship laboratory samples. Prepared for Desert Tortoise Fieldwork.
- 2) Circle Mountain Biological Consultants. 2002. College of the Desert Copper Mountain College: General biological survey and focused desert tortoise survey on +/- 115 acres in the community of Joshua Tree, San Bernardino County, California. Unpublished report prepared by Sharon Dougherty on behalf of The Addington Partnership. Wrightwood, CA.
- 3) Circle Mountain Biological Consultants. 2006. Habitat Conservation Plan for the authorized incidental take of the desert tortoise (*Gopherus agassizii*) from the proposed Copper Mountain Community College Expansion Site consisting of ± 157 acres in the community of Joshua Tree, San Bernardino County, California. Unpublished report prepared by Ed LaRue and U.S. Fish and Wildlife Service on behalf of CMCCD. Wrightwood and Ventura, CA.
- 4) Desert Tortoise Council. 1994 (Revised 1999). Guidelines for Handling Desert Tortoises during Construction Projects. Edward L. LaRue, Jr., editor. Wrightwood, CA.
- 5) U.S. Fish and Wildlife Service. 1992. Field survey protocol for any nonfederal action that may occur within the range of the desert tortoise. Ventura, CA.

9.0 Appendices

9.1 Map of Translocation Area From Habitat Conservation Plan

9.2 Guidelines for Handling Tortoises during Construction Projects

9.3 Compliance Report Schedule

9.4 Data Sheet for Handling Desert Tortoises

9.5 Desert Tortoise Monitor and Biologist Qualifications Form

9.6 Resume of Designated Biologist