

**DRAFT**  
**Proposed**  
**Recovery Action Program**  
**for the Desert Tortoise in California**  
**September 17, 2003**

**I. Background**

1. Desert tortoise in the California (distribution, critical habitat, DWMA's/ Recovery Units, current population status)
2. Current management framework (recovery plan, land management plans, GAO audit results/recommendations,)
3. Background/role of the DMG and the MOG

**II. Goals, Objectives, and Principles**

1. Goals:
  - a. Recover the desert tortoise while allowing for compatible/sustainable uses of the desert in accordance with all applicable Federal and State laws.
  - b. Implement a cooperative science based recovery program for the desert tortoise among State and Federal agencies in California.
  - c. Timely implementation of high priority desert tortoise recovery actions by State and Federal land and resource management agencies in California.
2. Objectives:
  - a. Establish a cooperative work planning process for State and Federal land and resource management agencies for the purpose of (a) coordinating implementation and funding of high priority recovery actions; (b) providing accountability for performance and expenditures related to desert tortoise recovery; and (c) providing for annual reporting of desert tortoise recovery actions.
  - b. Establish a DT Science Work Group within the DMG to ensure that recovery actions are implemented based on sound science using an adaptive management approach.
  - c. Establish a Regional Executive Management Group to oversee and guide implementation of the Program.
3. Principles:
  - a. Recovery actions will be implemented based on sound science and using an adaptive management approach.
  - b. Recovery actions will be consistent with and support the coordinated implementation of the Desert Tortoise Recovery Plan (Mojave Population).
  - c. Implementation of recovery actions will be carried out in consultation and cooperation with affected stakeholders, local communities, and the public.

### **III. Program Management/Coordination**

1. **Regional Executive Management Group.** A Regional Executive Management Group (REMG) will be established to oversee and guide implementation of the Program by participating agencies. The signatories to the MOA will constitute the membership of the REMG. The REMG will select its own chairman and operate by consensus. Primary responsibilities of the REMG will be to provide overall policy guidance and to recommend annual budget priorities and expenditures related to the Program.
2. **Desert Managers Group.** The Desert Managers Group will have primary responsibility for coordinating the timely and effective implementation of the Program by the participating agencies:
  - a. The DMG will be responsible for coordinating the Program with staff support from the DOI and DOD DMG Coordinators (and a State of California Coordinator as identified). The DMG will identify other staff and resources needed to effectively carry out this responsibility
  - b. The DMG will review and modify the charter of the DMG Science Work Group and reconstitute it to serve as the DT Science Work Group.
  - c. The DMG will coordinate closely with the Desert Tortoise Management Oversight Group to provide a consistent approach to recovery of the desert tortoise throughout its range.
  - d. The DMG will coordinate with local implementation/advisory groups established to oversee/guide implementation of DT recovery actions in specific areas (e.g., West Mojave).

### **IV. Coordinated Annual Work Planning Process**

All agencies will participate in and support the following annual work planning process. A general schedule for the process is attached:

1. Each agency will submit to the DMG an annual report of all of its accomplishments, activities, and expenditures related to recovery of the DT. The annual reports will include an accounting of proposed budget requests related to DT recovery, monitoring and research.
2. The DMG DT Science Work Group will review the agency accomplishment reports and other relevant reports, and provide recommendations on the Program and the annual work plan to the DMG.
3. The DMG will develop/update a coordinated annual work plan (CAWP) that identifies the goals, objectives, schedule, responsibility and budget for each element of the Program.
4. Each agency will identify for the DMG its capability to provide resources (\$\$, staff, etc) to carry out the CAWP. Any shortfalls that may exist will be documented and reported to the Regional Executive Management Group (REMG). *Note: (1) this is intended to be similar to the process currently used by the DMG to develop the interagency budget for Line Distance Sampling,*

*and (2) funds will be administered and allocated directly by the agencies responsible for the funds (funds would not be physically pooled).*

5. The REMG will review and approve the CAWP and budget.

## **V. Relationship to Agency Land Management Plans**

1. Agency land management plans (LMP) address a wide variety of recommendations included in the Desert Tortoise Recovery Plan (DTRP) consistent with each agencies mission and authority. LMPs which currently address DT recovery in the California desert include
  - a. BLM Plans: NEMO, NECO, WEMO, WECO
  - b. NPS Plans: JOTR, MOJA
  - c. DOD Plans: NTC, EAFB, NAS-China Lakes, MCACC, MCLB, et al
2. The focus of the Program will be on the coordinated implementation of high priority recovery actions which are common to many of the agency LMPs and require interagency cooperation for effective implementation (See Section VII). Agencies will implement other recovery actions (e.g., grazing management, route designation, law enforcement, land acquisition, fencing, etc.) included in approved LMP's in coincidence with and complementary to this Program.
3. In cooperation with the University of Redlands, the DMG will evaluate desert tortoise recovery actions included in DOD, NPS, and BLM land management plans in the West Mojave Recovery Unit to determine where collaboration and cooperation will improve effectiveness. Based on the evaluation, the DMG will host a facilitated session with the management jurisdictions in the West Mojave Recovery Unit to develop recommendations for consolidating and integrating recovery efforts among agencies. Results of that exercise will be incorporated into Section VII of the Program, as appropriate. The West Mojave plan evaluation will be a pilot for an approach that will be applied to all recovery units in the California desert.

## **VI. Public and Stakeholder Involvement**

1. Appropriate NEPA Compliance will be completed prior to implementation of specific recovery actions.
2. Other options for local government, non-DMG agency, tribal and public/stakeholder input include:
  - a. Invite interested stakeholders to attend and provide comments at regular DMG meetings (this is status quo) and/or
  - b. establish a DT Advisory Group (FACA Exempt) that reports to the REMG or the DOI/DOD Coordinators

## **VII. Elements of the Recovery Action Program**

### **Science Coordination and Support**

**Background:** Desert tortoise research, recovery, and monitoring activities will require scientific support for many years. Many uncertainties exist with respect to (a) the factors that are impacting desert tortoise populations, (b) the actions that will contribute most towards recovery of the desert tortoise, and (c) the effectiveness of recovery actions. These uncertainties will be addressed through a well conceived adaptive management program that answers specific questions in a scientifically defensible manner.

#### **Goals:**

1. Ensure recovery actions are based on the best available scientific information and implemented using an adaptive management approach.
2. Provide more effective and coordinated research, recovery and monitoring activities
3. Provide a sound and defensible technical basis for making decisions
4. Resolve uncertainties about the desert tortoise which limit planning and implementation
5. Assess the short and long term benefits/effectiveness of recovery actions.
6. Provide information and synthesis in a timely manner and a useful format.
7. Provide greater credibility and support for DT recovery efforts

#### **Proposed Course of Action:**

Establish a Desert Tortoise Science Work Group under the DMG. The responsibilities of the work group will be to:

1. advise the DMG on the overall scientific direction of the DT recovery effort,
2. review work plans and annual and final reports to ensure that studies and conclusions are scientifically sound and supportable.
3. develop, review and/or approve scientific standards/guidance for the conduct of DT research, monitoring, and adaptive management
4. coordinate scientific endeavors related to DT recovery, and
5. synthesize documents/information that frame recent advances in science and ecosystem knowledge in a format that is useful to the DMG.

**Work Group Membership:** The work group would include (a) several (2-4) knowledgeable DT scientists with different disciplines related to DT conservation (e.g., ecology, physiology/disease, behavior, genetics, statistics, population modeling), statistics/modeling, etc. (b) and agency management biologists. All members of the DMG would be invited to submit nominees for the work group.

**Staff Support:** Staff support will be critical to the efficient and effective operation of the Work Group. Staff support will be provided by the University of Redlands and/or USGS (to be determined).

## **Data Management**

**Background:** Management actions related to the desert tortoise must be based upon the best scientific information available. To meet this standard, all data relevant to the desert tortoise must be readily available to land managers and their staffs. Currently, data is managed separately by individual researchers or by individuals within agencies. No consistent protocol for data documentation, data quality, or data sharing exists. This is so pronounced that it is not truly known what desert tortoise data exist, the quality of existing data, or who has the data and in what form it exists. Development of a desert tortoise data repository, whether centralized or distributed, will address these issues, allow agencies to see what data exists and where the data gaps are, and allow land managers to manage using the best scientific data available.

**Goal:** Manage scientific data for the desert tortoise in a standardized format and make it available/accessible to land managers and the scientific community

### **Proposed Course of Action:**

1. FWS will establish an in house repository for all desert tortoise data via a “no cost” MOU with a sister federal agency (USGS, BLM, NPS, DOD). If a “no cost” MOU is not feasible, FWS will contract data management with an appropriate Federal/State agency, educational institution, non-profit organization, or a reputable business firm.
2. The DMG will establish an ad hoc data management work group that will work in consultation with the desert tortoise Science Work Group to:
  - a. Develop protocols for the structure and maintenance of the data repository. Protocols will allow for sharing or pooling of data from other DT recovery efforts outside California (e.g, the Clark County HCP, Washington County HCP).
  - b. Establish protocols for accessing data in the repository similar to those used to manage cultural resource data (e.g., the requestor must: have appropriate qualifications background and a legitimate/approved need for the data requested, sign a “will not publish agreement” for unpublished data unless a release is provided by the original data collector, have an approved request through FWS for access to the data requested, etc.).
3. As a condition of their ESA and/or SESA research permits, FWS and CDFG will require all agencies/institutions/researchers to abide by established protocols and submit to the DT data repository:
  - a. A copy of their field data annually, including (paper data sheets or digital field forms depending on method used). Submission of data will include a brief report outlining the protocols used for data collection and an assessment of the quality of the data.
  - b. Annual and final project reports and all final project data products.

## **Desert Tortoise Monitoring**

**Background:** Currently two separate efforts are being employed to monitor the status and trends of desert tortoise populations and habitat. A series of long-term Permanent Study Plots (PSPs) were established in the 1970's in various locations throughout the desert. Since that time, information related to desert tortoise mortality, habitat condition, disease, and numbers have been collected periodically at the PSP's. This information provides the basis for most of the current estimates of population status and trends. Beginning in 2001, Line Distance Sampling (LDS) was implemented to provide statistically supportable population density estimates that will be used to assess progress towards meeting recovery goals established for each Recovery Unit. The Desert Tortoise Recovery Plan (1994) recommends both population trend monitoring (i.e., LDS) and maintenance of long term study plots.

**Goal:** Monitor the size and viability of desert tortoise populations and their habitats.

### **Proposed Course of Action:**

1. Line distance sampling will be implemented on BLM, NPS, DOD and state lands to assess the density of desert tortoise in the 5 recovery units in the California Deserts.
2. LDS protocols will be tested and refined to reduce the variance in the data and provide more reliable density estimates.
3. Sample the 15 PSP's in California once every 5 years (not all plots would be sampled in the same year).
4. An annual report of PSP and LDS results will be produced by December of each year.
5. The interagency DT data management system will be maintained and all PSP and LDS data will be collected and maintained in a manner that facilitates a regional multi-state assessment of the status of desert tortoise populations.

## **Feral and Free Roaming Dog Management**

**Background:** With the increase in land development and urbanization occurring as a result of population growth in the desert, predation of desert tortoises by feral and free roaming dogs has increased. Feral and free roaming dogs are already a significant issue in some desert areas. To prevent feral and free roaming dogs from becoming a significant issue desert wide a Feral and Free Roaming Dog Management Plan is necessary.

**Goal:** Reduce/eliminate predation of desert tortoises by feral and free roaming dogs.

**Proposed Course of Action:** In conjunction with land use management plans, the CDFG, will work with FWS, BLM, DOD, county animal control agencies, and other applicable local entities, to develop a Feral Dog Management Plan. This plan will articulate control/management measures and provide an agreed upon implementation time line.

## **Raven Management**

**Background:** Populations of common ravens have increased by more than 1000 percent over a recent 25-year period. These increases are presumably the result of increases in food (e.g., landfills, garbage, litter, grains, feedlots, roadkills) and water subsidies provided by humans. Human provided increases in nesting sites (e.g., transmission towers, utility poles, billboards) may also be a factor.

This population increase has become a concern because ravens prey on hatchling and juvenile desert tortoises. This predation has resulted in reduced survival rates of young tortoises. The reduction in survival of young tortoises may be lowering recruitment into the breeding population and thus inhibit stabilization/increase in declining populations of the species. With inadequate recruitment, population declines will continue.

**Goal:** Manage/control ravens to minimize their impacts on desert tortoise populations

### **Proposed Course of Action:**

The following raven management actions will be implemented in "Tortoise Management Areas" in the California deserts including designated Desert Wildlife Management Areas (DWMAs), critical habitat, and National Park Service units.

#### **1. Reduce or Eliminate Human Subsidies**

- a. Encourage waste management agencies to reduce raven access to organic wastes at landfills.
- b. Develop an education program to encourage agencies and individuals to reduce the availability to ravens of organic wastes outside of landfills. These educational efforts should include, but not be limited to, business and agriculture.
- c. Reduce the availability of carcasses of road-killed animals along highways in tortoise habitat by fencing along roads and highways specified in the fencing tables in the Desert Tortoise Recovery Plan and in agency land use plans (e.g., NECO, NEMO, WEMO) to prevent animals from getting killed on roads. In Joshua Tree National Park and Mojave National Preserve where policies prevent fencing, remove carcasses along paved highways in desert tortoise critical habitat.
- d. Removing raven nests during the non-nesting season within 2 miles tortoise management areas. Work with utility companies to remove raven nests from their facilities in these areas.
- e. Avoid constructing new nesting structures and reduce the number of existing nesting structures in areas where natural or anthropogenic substrates are lacking.

2. **Implement Lethal Actions:** Eliminate by lethal means those ravens that show evidence of preying on tortoises (i.e., tortoise shells found beneath or within 1 mile of a nest or perch). Removal will be by methods that consider humaneness, human health and safety, cost, and effectiveness. Methods might include shooting, trapping, and poisoning. Removals will be conducted by authorized government agents only. Young ravens and eggs found in nests of removed adults would be euthanized humanely if they can be captured safely.
3. **Implement Adaptive Management**
  - a. Form a Raven Management Team to coordinate implementation, evaluate monitoring reports, assess progress of the actions, and recommend changes in the program. The Raven Management Team will report to the DMG Science Work Group. The Desert Managers Group will set overall policy for the program.
  - b. Assess effects of raven management actions on raven populations. To be developed further.
  - c. Assess effects of raven management actions on tortoise populations. To be developed further.

## **Head Starting and Translocation**

**Background:** The desert tortoise has been extirpated from some areas of the Mojave Desert and the continued downward trends suggest that without active management intervention DT could be extirpated from additional areas in the foreseeable future. Desert tortoises reach sexual maturity at 15-20 years of age and healthy populations increase at 0.5 per cent annually. This low reproductive potential suggests that it will take decades or even centuries for a population to recover naturally. Headstarting (hatching and raising of young tortoises in predator free environments and subsequent release into the wild) and translocation of adult animals that are being displaced from certain areas (e.g., Fort Irwin expansion area) represents potentially useful management tools to repopulate areas where desert tortoises have been extirpated or significantly reduced.

**Goal:** Re-populate areas where desert tortoise have been extirpated or significantly reduced using genetically acceptable desert tortoises.

### **Proposed Course of Action:**

Develop a Headstarting and Translocations Plan. Elements of the Plan will include:

1. Identify areas suitable for headstarting/translocation i.e., areas where
  - a. DT have been extirpated or numbers significantly reduced,
  - b. potential impacts to tortoises such as grazing, predation, and mining/human activities have been significantly minimized or eliminated,
  - c. risk to existing wild populations is minimized
2. Actions to ensure maintenance of existing genetic diversity found in wild populations.
3. Actions to minimize the risk of disease in the reintroduction area.
4. Facilities needed to raise and properly care for captive tortoises.
5. A reintroduction plan (numbers and sizes/ages of animals to released, season of release, etc)
6. Clearly defined criteria for success (e.g., minimum survival rates and/or density goals for adult male and female tortoises)
7. Management measures (e.g., fencing, predator control, etc) that need to be implemented to maximize the likelihood of success, and
8. A monitoring program to evaluate program success.

## **Disease Management and Remediation**

**Background:** Disease is one of several factors causing declines in tortoise populations in California. Disease in general is a normal and natural phenomenon within wild populations. Disease can weaken individuals, reduce reproductive output, and cause mortality. Several diseases have been identified as possibly affecting the stability of some desert tortoise populations: upper respiratory tract disease (URTD), and cutaneous dyskeratosis or shell disease, and herpesvirus. URTD has been found in several populations that have experienced high mortality rate, especially in the West Mojave Recovery Unit. Many factors have been hypothesized as contributing to disease outbreaks including: drought, release of captive tortoises, increased exposure to heavy metals and other toxins, and habitat degradation caused by grazing, nonnative plant infestations, and off highway vehicle use.

**Goal:** Minimize the impacts of disease on desert tortoise populations.

### **Proposed Course of Action**

1. Utilize high PEP plant species in re-vegetation projects in DWMA's/critical habitat. Certain plants (mostly if not all annuals) contain a higher PEP index (potassium excretion potential) which are believed to be beneficial to DT.
2. Implement a public education program to curtail the release of captives.
3. Develop an Emergency Response Team and Funds to (a) salvage tortoises (b) determine disease type(s) and (c) isolate healthy or infected populations when outbreaks of diseases are first detected.
4. Increase/focus BLM and NPS Law Enforcement efforts in the Desert Tortoise Natural Area, Joshua Tree National Park and around desert towns in close proximity to DWMA's. Poaching tends to occur more frequently in these areas, as does mortality caused by firearms. Increasing and/or focusing law enforcement operations in these areas will likely have a better benefit based on effort.
5. Train more biologists (how many, which ones??) to conduct full health assessments (Berry and Christopher, 2001). The training needs to include drawing blood and conducting nasal lavages for cultures.
6. Salvage more (how many in each DWMA??) ill and dying tortoises for determination of causes and contributors to death. FWS and the State will issue necessary salvage permits for this work.
7. Review and revise (as appropriate) existing protocols for handling tortoises to incorporate new and better methods to reduce stress.

8. All research permits will require collecting data on health, disease, and mortality. Incidental take permits should include costs of necropsies for tortoises killed during and related to the project.

## **Information and Education**

**Background:** Declines in desert tortoise populations are attributed to a number of factors, many of which are directly related to the growth of human population in the desert. People commonly collect tortoises as pets. In addition to the direct impacts of collecting tortoises, pet tortoises may serve as vectors for the diseases when they are released back into the wild. Predation by common ravens and free roaming/feral dogs on DT has increased in the desert due to increase human populations. This predation has been identified as a serious threat to tortoise populations. Illegal or unauthorized off road use in the desert, often associated with residential development, is widely regarded as a serious impact to tortoises and tortoise habitat in many areas. In many localities, residents and recreation user groups regard tortoise as an impediment to human use and development in the desert.

Public appreciation and support for DT is fundamental to a successful recovery effort. There is presently no coordinated or comprehensive effort to communicate information about the desert tortoise to the public. There is also no comprehensive effort to provide objective, consistent information to stakeholders, decision makers and local communities about the factors responsible for tortoise declines and current activities to recover the desert tortoise.

**Goal:** Develop and implement a public education outreach program about the Desert Tortoise to build support for, and involvement in, its recovery.

### **Priority Messages**

1. DTs are an important and valuable part of the Mojave Desert ecosystem and are worth saving.
2. Individuals can help conserve and protect DT by:
  - a. Disposing of trash properly
  - b. Staying on open roads and trails
  - c. Keeping hands off – do not pick tortoises up unless they are in harms way
  - d. Not releasing pet tortoises into the wild
3. Agencies are working collaboratively to recovery the desert tortoise. Recovery efforts are based on sound science while accommodating human uses in the desert.

### **Priority markets:**

1. Coachella Valley
2. Morongo Basin
3. Barstow/Lenwood
4. Needles/Bullhead/Laughlin
5. Lancaster/Palmdale
6. Victorville/Hesperia/Apple Valley/Helendale
7. El Centro/Imperial Valley
8. Ridgecrest
9. Riverside/San Bernardino/Moreno Valley

### **Priority Audiences**

1. Residents
2. Desert recreation users
3. School children
4. Officials – decision makers, stakeholders
5. Tortoise pet owners
6. General public

**Proposed Course of Action:** The following course of action will be implemented over a three year period.

1. **Mojave Max Campaign:** The DMG DT outreach and education program will be built around Mojave Max, a popular cartoon desert tortoise that provides people with information about the desert tortoise and desert conservation in Southern Nevada. Currently Mojave Max is the spoketortoise for the Clark County Desert Conservation Program (the CCDCP). Mojave Max is also a real desert tortoise that lives in a special habitat at the Red Rock National Conservation Area in Clark County, Nevada. The DMG will enter into an agreement with the CCDCP for use of the Mojave Max image and trademark in California. The agreement will address use of the Mojave Max image in the following specific applications:
  - a. Radio and television public service announcements
  - b. Brochures targeted at desert tortoise pet owners
  - c. Curriculum-based education programs for use in California schools (K-12)
  - d. A proposed desert tortoise documentary for broadcast on public television via KCET-TV Los Angeles PBS, or through the Corporation of Public Broadcasting.
  - e. Expansion of the Mojave Max annual emergence media event into the southern California media market
  - f. Use of Mojave Max mascot at fairs and community events in conjunction with DMG-sponsored educational programming
  - g. Articles to appear in agency-sponsored publications such as newsletters, newspapers, and other free literature distributed to desert recreation users and the general public.
  - h. Use of Max image on agency-sponsored or agency-affiliated web sites such as [www.californiadesert.gov](http://www.californiadesert.gov), [www.dmg.gov](http://www.dmg.gov), [www.nps.gov](http://www.nps.gov), or [www.joshuatree.org](http://www.joshuatree.org) (a non-profit partner).
  - i. Use of Max in a limited program of product development designed to raise tortoise awareness and generate funds for additional education and outreach ventures.
  - j. Establishment of a resident California Mojave Max/Maxine around which to focus California desert tortoise education and outreach initiatives.

2. **DT Media Campaign:** The DMG will implement a multi-faceted campaign to get key messages related to desert tortoise in the media. Elements of the media campaign will include:
  - a. **Radio Public Service Announcements (PSA)—The Mojave Minute:** The DMG will produce a minimum of 12 PSA per year for broad distribution to radio stations throughout the desert. PSA's are inexpensive to produce and afford the opportunity to reach a large audience. The PSA's address a variety of topics related to DT, general desert appreciation, recreation opportunities and agency/DMG efforts to recover the DT. The DMG will explore a possible partnership w/Clark County media center to produce PSA.
  - b. **DT Media Kit.** The DMG will design, develop and disseminate a desert tortoise media kit that includes information such as
    - DT life history, population status, and recovery efforts,
    - answers to commonly asked questions about the DT,
    - a digital photo disk of DT images, maps, etc.
    - contact information
    - Mojave Max literature.
  - c. **DT News Releases.** The DMG in cooperation with the Joshua Tree National Park Association will produce and disseminate 6-12 new release per year on newsworthy event and information.
  - d. **DT Television PSA/Programs.** The DMG will explore and implement opportunities to producing TV PSA and Programs related to the DT. A prospectus will be developed that outlines TV suitable events or subject matter. Partnerships with Clark County will be explored. Huell Howser (PBS) has indicated an interest in filming an episode of California Gold related to the DT. The DMG will also seek to find an appropriate celebrity such as Jeff Corwin or Steve Erwin to act as the media spokesperson for the desert tortoise.
  - e. **DT Summit:** In concert with the release of the new DT Recovery Plan, the DMG in coordination with the MOG will host a desert tortoise summit to:
    - Create awareness of the status of the desert tortoise populations, factors that are contributing to its decline, and efforts and accomplishments related to recovery of the desert tortoise.
    - Promote a dialogue and collaborative approach to resolving ESA (especially desert tortoise) issues among government, stakeholders, and business
    - Build support for implementation of an effective and timely desert tortoise recovery effort
  - f. **Media Field Day.** The DMG will host an annual media field day in conjunction with appropriate DT field activities (e.g., Line Distance Sampling) at several locations/media markets in the desert (Moreno and Coachella Valley, Victorville, Lancaster, etc). The purpose would be to establish a working relationship with the media and promote positive stories about the DT and DT recovery efforts.

3. **Desert Tortoise Webpage:** Develop an expanded DT web page targeted at the public, stakeholders, educators hosted on [www.californiadesert.gov](http://www.californiadesert.gov) or set up as a new/separate site e.g., [www.deserttortoise.gov](http://www.deserttortoise.gov). The site will be a repository for all information developed through the DMG Outreach and Education Program. The site will serve as a clearinghouse for DT online information and will include prominent links to other agency sites- USFWS, NPS, BLM, CA F&G, private sites, etc. Use existing resources at University of Redlands or MDEP to design, develop and host the site. The initial step will be to develop a plan for the site and a no cost agreement with MDEP/UR to develop, host and maintain the site.
4. **Implement DT curriculum in desert schools.** Incorporate a Mojave Max-based desert tortoise curriculum in desert schools (target 50,000 K-8 students over a three-year period). The curriculum would be designed to comply with State educational standards. Develop traveling trunks with educational materials (short term) and explore the development of computer based learning modules (long term). Conduct teacher workshops to show teachers how to use the traveling trunks. Aggressively publicize the curriculum to teachers through direct mailings and California Science Teacher Association Conference. Pilot an educational program at the Desert Discovery Center (Barstow) in FY 04.
5. **DT Newsletter.** Produce 2-4 DT Newsletters annually to provide objective and timely information on desert tortoise recovery activities and progress. The newsletter would be targeted at decision makers, stakeholders, opinion makers, and community groups. The newsletter would be composed of news releases and other off-the-shelf material and include interesting/objective articles related DT recovery actions, life history, population status, threats, agency profile, researcher/ conservationist profiles, DT events, etc. A high quality printed newsletter would be distributed via mail and an electronic (pdf) version would be available via the DMG desert tortoise web site.
6. **DT Pet Owner Brochure.** Develop a brochure about tortoise diseases and about responsible tortoise ownership targeted at pet owners for distribution through veterinarian offices, pet stores, animal shelters, and through tortoise rescue groups and tortoise clubs. Sites where the public can take sick, unwanted or rescued tortoises and points of contact need to be identified prior to developing the brochure.
7. **DT Power Point Presentation Tool Kit.** Develop a set of power point slides for use by managers and other interested parties in making presentations about DT.
8. **DT Sale Items.** In cooperation with non-profit cooperating associations or other private sector partners identify and develop low-cost, high impact sales items related to the desert tortoise, i.e., bumper stickers, patches, decals, t-shirts. Emphasis would be on developing tight, well-crafted messages to inform the public about the desert tortoise while also allowing for the generation of revenue to fund future tortoise outreach initiatives.

9. **Desert Tortoise Exhibits.** Assist the Palm Springs Desert Museum and other regional museums in acquiring and developing quality museum exhibits on the desert tortoise for display at appropriate venues throughout southern California and other areas within the tortoise's greater range. Such assistance could include materials development, use of Mojave Max image, and grant development and support. Encourage the creation and establishment of desert tortoise exhibits by such well known regional attractions as the San Diego Zoo, the Los Angeles County Natural History Museum, the Living Desert Preserve in Palm Desert, and the Arizona Sonoran Desert Museum in Tucson.
  
10. **Desert Tortoise Public Attitude and Outreach Effectiveness Study.** Carry out a university-conducted sociological study designed to generate baseline data on public attitudes, perceptions, and values about the desert tortoise, about tortoise recovery efforts, and about broader California desert conservation and appreciation. This survey would be use to help design effective public outreach messages and strategies. A follow-up survey would be conducted in 5-7 years to evaluate the effectiveness of outreach and education efforts.

**Draft Proposed  
Memorandum of Agreement  
for  
Implementation of Cooperative Recovery Actions  
for the  
Desert Tortoise in California**

A. Purpose

The purpose of this Memorandum of Agreement (MOA) is to set forth the intentions of the parties, insofar as they are compatible with each agency's primary mission, to participate in and carry out the *Recovery Action Program for the Desert Tortoise in California* (hereinafter referred to as the Program) dated \_\_\_\_\_ (Attached) . The parties also agree to participate in the Regional Executive Management Group which will be established to guide implementation of the Program by the participating agencies. It is agreed that the REMG may modify the Program periodically based on changing circumstances or new information.

B. Geographic Scope

This MOA applies only to implementation of recovery actions for the desert tortoise in California. Recovery actions implemented through this agreement will be closely coordinated with the Desert Tortoise Management Oversight Group and other parties to provide a consistent approach to recovery of the desert tortoise throughout its range.

C. Term

This MOA shall remain in effect for a period of ten years from the date of its execution.

D. Amendment

This MOA may be extended, amended, or terminated by agreement of the parties or any party may withdraw from this MOA upon 90 days written notice to the other parties.

E. Authorities

1. Federal Land Policy and Management Act of 1976 (43 USC 1701 et seq)
2. Endangered Species Act of 1973, as amended (16 USC 1531-1544, 87 Stat.884)
3. Sikes Act of 1960 (16 USC 670a-670, 74 Stat. 1052), as amended
4. National Park Service Organic Act (16 USC 1 et seq)
5. Omnibus Consolidated Parks Act, 1997
6. State of California Public Resources Code
7. California Fish and Game Code (Section 1802)

F. No Delegation or Abrogation

Parties to this MOA recognize that they each have statutory responsibilities that cannot be delegated, and that this MOA does not and is not intended to abrogate any of their statutory responsibilities.

G. Funds

Insofar as it is compatible with each agency's primary mission and statutory responsibilities, all parties shall budget for sufficient funding to execute their responsibilities identified in the Program and to administer and allocate those funds in accordance with provisions of Section IV of the Program. All parties agree and understand performance under this MOA is dependent upon the lawful appropriation and authorization of funds. All parties agree to develop efficient and cost effective means for transferring funds among said parties for carrying out the purposes of this Agreement.

I. Signatures:

\_\_\_\_\_  
California State Director, Bureau of Land Management Date

\_\_\_\_\_  
California/Nevada Operations Manager, Fish and Wildlife Service Date

\_\_\_\_\_  
Regional Geologist, Geological Survey Date

\_\_\_\_\_  
Regional Director, National Park Service Date

\_\_\_\_\_  
Commander, National Training Center Date

\_\_\_\_\_  
Commander, Naval Air Weapons Station, China Lakes Date

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Commander, Edwards Air Force Base Date

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Commander, Marine Corps Task Force Training Center Date

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Commander, Marine Corps Logistics Base Date

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Commander, Marine Corps Air Station, Yuma Date

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Director, California Department of Fish and Game Date