FINDING OF NO SIGNIFICANT IMPACT

El Centro Field Office

EA Number: CA-670-2009-21

Case File No: N/A

Proposed Action Title/Type: Chocolate Mountains Aerial Gunnery Range Big Game Guzzler Installation

Applicant/Proponent: BLM/California Department of Fish and Game

Location of Proposed Action: Imperial and Riverside Counties, CA.

San Bernardino Meridian

Track Walla Tank	T7S R13E S22
Doc Homs Tank	T7S R13E S30
22 Tank	T8S R12E S14
Spa Tank	T8S R13E S31
Bottle Springs Tank	T8S R13E S26
Drop 16 Tank	T9S R13E S2
Left Marvin Tank	T8S R14E S33
Right Marvin Tank	T9S R14E S10

Conformance with Applicable Land Use Plan(s):

These plans have been reviewed to determine if the proposed action conforms to the land use plan terms and conditions as required by 43 CFR 1610.5. This proposed action is in conformance with the following land use plans:

- *California Desert Conservation Area Plan, approved 1980, as amended.*
- *Northern and Eastern Colorado Desert Coordinated Management Plan and Final Environmental Impact Statement, 2002. Chapter 2, Section 2.3.2.*

Summary of Alternatives

The proposed action (Alternative A) is to allow construction of 8 big game guzzlers.

Alternative B is the no action alternative. Under this alternative, no big game guzzlers would be constructed.

Rationale and Management Considerations

Alternative A (construction of guzzlers) is preferred over Alternative B (no action) for the following reasons:

- Alternative A most closely conforms to the action item goals in CDCA and NECO.
- Alternative A provides a water source for big game animals away from canals and will enhance wildlife habitat.
- With the mitigation measures listed below, the adverse environmental impacts of Alternative A are not significant and will be only nominally greater than those attributable to Alternative B.

Description of Mitigation Measures:

The following mitigation measures shall be applied to ensure there are no adverse impacts to Desert Tortoise. These measures were developed based on the Biological Opinion for Small Disturbances in Desert Tortoise Habitat (August 22, 1997 1-8-97-F-17) and recommendations from FWS:

a. The project proponent shall designate a qualified biologist (QB) who would be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The QB must be on-site during all project activities. The QB shall have the authority to halt all project activities that are in violation of the stipulations. The QB shall have a copy of all stipulations when work is being conducted on the site. The QB may be a biologist with desert tortoise experience and approved by BLM.

b. All employees/volunteers of the project proponent who work on-site shall participate in a tortoise education program prior to initiation of field activities. The project proponent is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees/volunteers shall receive formal, approved training prior to working on-site. The employee education program must be received, reviewed and approved by the BLM Field Office at least 15 days prior to the presentation of the program. The program may consist of a class presented by a qualified biologist (BLM or contracted) or a video. Wallet sized cards or a one page handout with important information for workers to carry are recommended. The program shall cover the following topics at a minimum:

_ Distribution of the desert tortoise,
_ General behavior and ecology of the tortoise,
_ Sensitivity to human activities,
_ Legal protection,
_ Penalties for violations of State or Federal laws,
_ Reporting requirements, and
_ Project protective mitigation measures.

d. The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows, identified by the qualified biologist shall be avoided.

To the extent possible, previously disturbed areas within the project site shall be utilized for the stockpiling of excavated materials, storage of equipment, and location of office trailers and parking of vehicles. The qualified biologist, in consultation with the project proponent shall ensure compliance with this measure. Staging areas for this project shall be surveyed for desert tortoise and their burrows and if present, shall be moved and avoided as appropriately determined by BLM.

e. To the extent possible, access to the project site shall be restricted to designated "open" routes of travel. A qualified biologist shall select and flag the access route, to avoid burrows and to minimize disturbance of vegetation. All access is to be considered temporary. After the project is completed, the temporary access routes shall be rehabilitated using ripping, raking, and other accepted techniques.

As explicitly stated in the project permit, cross-country vehicle use by employees/volunteers is prohibited during work and nonworking hours. No new permanent road, two-track or otherwise, shall be created from a main road to any of the guzzlers.

i. Desert tortoises shall be allowed to move through a project area and shall not be disturbed under any circumstances. All construction activities shall cease until the desert tortoise has moved through the area. No handling of the desert tortoise is allowed.

j. The qualified biologist shall maintain a record of all desert tortoises observed during the project monitoring. This information would be provided to the BLM/Service with the annual report from CDFG. This information shall include for each tortoise:

1. The GPS location (narrative and maps) and dates of observations;
2. General condition and health, including injuries and state of healing and whether animals voided their bladders;
3. Diagnostic markings (i.e., identification numbers or marked lateral scutes);
4. Photograph of each observed desert tortoise.

k. No later than 90 days after completion of construction or termination of activities, the QB shall prepare a report for the BLM. The report shall provide an estimate of the actual acreage disturbed by various aspects of the operation. This information shall be reported to the Service by BLM with the assigned file number #FWS-IMP-5425 and may be included with the first annual CDFG/agent report/discussion to BLM.

l. Upon locating a dead or injured tortoise, the project proponent or agent is to notify the BLM Field Office. The BLM must then notify the appropriate field office (Carlsbad) of the USFWS by telephone immediately for care. Written notification must be made within

five days of the finding, both to the appropriate USFWS field office and to the USFWS Division of Law Enforcement in Torrance. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information.
An injured animal shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the appropriate field office of FWS should be contacted for final disposition of the animal.

m. Except on county maintained roads, vehicle speeds shall not exceed 10 miles per hour through desert tortoise habitat.

n. Workers shall inspect for tortoises under a vehicle prior to moving it. If a tortoise is present, the worker shall not move the vehicle until the tortoise has moved out from under the vehicle on its own volition. Only after it has moved, may the vehicle be moved.

o. No dogs shall be allowed at a work site.

p. All trash and food items shall be promptly contained within closed, raven proof containers. These shall be removed from the project site the same day to reduce the attractiveness of the area to ravens and other tortoise predators.

q. Project proponents shall stockpile any vegetation grubbed or bladed from the project site. The access road is temporary and not graded. Following completion of the project, the access road and project site (a temporary disturbance) shall be re-contoured to approximate pre-project condition and the stockpiled vegetation randomly spread across the re-contoured area.

r. A qualified biologist with experience conducting surveys for desert tortoise shall be approved by BLM for this project.

Because of the conservation activities undertaken by the Department of Fish and Game for the desert tortoise (habitat acquisition, education, protection), no compensation payment shall be required. In lieu of fencing, the Department shall ensure that no desert tortoises are harmed through the use of a biological monitor during guzzler installation. The drinker would also be equipped with an approved ramp to allow small wildlife, including desert tortoises, to climb out.

Consultation and Coordination

The Bureau of Land Management has worked collaboratively with the California Department of Fish and Game for the development of the environmental assessment. Since the proposed guzzler locations are within Desert Tortoise habitat, BLM initiated informal consultation with the United States Fish and Wildlife Service on December 19, 2008. The Fish and Wildlife Service provided input into the EA and provided some mitigation measures. USFWS verbally concurred with BLM's determination of not likely to adversely affect and no adverse modification on January 28, 2009 (personal communication with Tannika Engelhard).

FINDING OF NO SIGNIFICANT IMPACT

I have reviewed this environmental assessment including the explanation and resolution of any potentially significant environmental impacts. I have determined that the proposed action with the mitigation measures described below will not have any significant impacts on the human environment and that an EIS is not required. I have determined that the proposed project is in conformance with the approved land use plans.

Environmental impacts associated with the proposed action and alternatives have been assessed by an interdisciplinary team and described in Environmental Assessment (EA) CA-670-2009-21. The context of the EA was determined to be at a local and regional scale in Imperial County, California. The effects of the action are not applicable on a national scale since no nationally significant values were involved.

In making this Finding of No Significant Impact (FONSI), the following criteria have been considered, in accordance with the Council on Environmental Quality (CEQ), 40 CFR. 1508.27:

1. *Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.*

   Beneficial Effects: Increased access and habitat enhancement for many animals, including deer and bighorn sheep.

   Adverse Effects: A small area will be altered to build the guzzler. Plants will be removed. Dust and noise levels could be temporarily increased.

2. *The degree to which the proposed action affects public health, safety and sanitation.* The proposed project will have no effect on public health and safety other than the beneficial aspect of increased availability for water for deer and bighorn sheep.

3. *Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.* The construction of these big game guzzlers will not occur in proximity to park lands, prime farmlands, wild and scenic rivers, or ecologically critical areas. The proposed project has been sited so as to avoid cultural or historic resources.

4. *The degree to which the effects on the quality of the human environment are likely to be highly controversial.* It is not likely that construction of the guzzlers will result in impacts to the quality of the human environment that will be highly controversial. The areas in which the guzzlers will be sited are currently used for hiking, wildlife viewing, off-highway vehicle recreation and camping. These uses will continue by similar numbers of people. These guzzlers are not going to be constructed in wilderness.

5. *The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risk.* Effects of the proposed action are well understood and will not involve any unique or unknown risks.

6. *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* The proposed action will not establish precedents for future actions or represent a decision in principle about a future action.

7. *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.* Cumulative impacts of the proposed action on the environment will not be significant or related to any other action with significant cumulative impacts. There are no large projects in the area to which this small guzzler project will contribute adversely.

8. *The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.* No significant scientific, cultural or historical resources will be affected by the proposed action.

9. *The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.* Desert Tortoise occurs throughout the project area. BLM has implemented mitigation measures to minimize risk to the Desert Tortoise. Because of these mitigation measures, the Bureau determined that this project is not likely to adversely affect Desert Tortoise or adversely modify habitat. The United States Fish and Wildlife Service verbally concurred with this determination on January 28, 2009 (personal communication with Tannika Engelhard).

10. *Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.* The proposed action does not threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

Based on the findings discussed herein, I conclude that the proposed action is not a major Federal action and will result in no significant impacts to the environment. Preparation of an environmental impact statement to further analyze possible impacts is not required pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969.

Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs

must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825.

Reviewed By: /s/ Daniel Steward *acting for* Date: 2/20/09
Erin Dreyfuss, Environmental Coordinator

Approved By: /s/ Vicki L. Wood Date: 2/20/09
Vicki L. Wood, Field Manager

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
El Centro Field Office
1661 S. 4th Street
El Centro, CA 92243
http://www.blm.gov/ca/st/en/fo/elcentro.html

Chocolate Mountains Aerial Gunnery Range Wildlife Guzzlers (CA-670-2009-21)
Decision Record
February 2009

1.0 Introduction and Background

Like many other species of desert wildlife, desert bighorn sheep and mule deer need drinking water and are attracted to water during drier and/or hotter periods of the year (Hervert and Krausman 1986, Elder 1956). Research indicates that water benefits animals in several ways during these times. Water helps animals maintain a more stable body temperature through evaporative cooling, assists in maintaining appropriate electrolyte balance for metabolism, and allows more efficient digestion of food.

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of the guzzler construction proposed by California Department of Fish and Game. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action.

2.0 Decision

2.1 Alternatives Considered but not Selected

Under the No Action alternative, no guzzlers would be built. This alternative would not conform to NECO and the CDCA Plan.

2.2 Decision and Rationale

Based on information in the EA, the project record, and consultation with my staff, I have decided to implement the project as described in the EA. The construction of these guzzlers is needed to provide supplemental water for habitat improvement. The project is not expected to adversely impact any resources.

3.0 Consultation and Coordination

Since the project area has been identified as Desert Tortoise habitat, informal consultation with USFWS was initiated on December 19, 2008. BLM found that the project may affect, but is not likely to adversely affect Desert Tortoise. USFWS verbally concurred with this finding on January 28, 2009 (personal communication with Tannika Engelhard).

4.0 Plan Consistency

Based on information in the EA, the project record, and recommendations from BLM specialists, I conclude that this decision is consistent with the 1980 California Desert Conservation Plan (as amended), the Endangered Species Act; the Native American Religious Freedom Act; other cultural resource management laws and regulations; Executive Order 12898 regarding Environmental Justice; and Executive Order 13212 regarding potential adverse impacts to energy development, production, supply and/or distribution.

5.0 Administrative Remedies

Administrative remedies may be available to those who believe they will be adversely affected by this decision. Appeals may be made to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of Interior, Board of Land Appeals (Board) in strict compliance with the regulations in 43 CFR Part 4. Notices of appeal must be filed in this office within 30 days after publication of this decision. If a notice of appeal does not include a statement of reasons, such statement must be filed with this office and the Board within 30 days after the notice of appeal is filed. The notice of appeal and any statement of reasons, written arguments, or briefs must also be served upon the Regional Solicitor, Pacific Southwest Region, U.S. Department of Interior, 2800 Cottage Way, E-1712, Sacramento, CA 95825.

The effective date of this decision (and the date initiating the appeal period) will be the date this notice of decision is posted on BLM's (El Centro Field Office) internet website.

/s/ Vicki L. Wood	2/20/09
Vicki L. Wood, Field Manager El Centro Field Office	Date

Environmental Assessment

For

Eight Wildlife Guzzlers For

The CMAGR

Environmental Assessment
CA-670-2009-21

Bureau of Land Management
California State Office
California Desert District
El Centro Field Office

February 19, 2009

ENVIRONMENTAL ASSESSMENT EA Number: CA-670-2009-21

El Centro Field Office, California Desert District, Bureau of Land Management

PROPOSED ACTION TITLE/ TYPE: Eight wildlife guzzlers to be built in and adjacent to the Chocolate Mountain Aerial Gunnery Range (CMAGR), Imperial and Riverside Counties. These constructed water sources are mitigation actions to benefit large wildlife.

APPLICANT / PROPONENT: California Department of Fish and Game (CDFG) and Desert Wildlife Unlimited (DWU).

LOCATION OF PROPOSED ACTION:

Track Walla Tank	T7S R13E S22
Doc Homs Tank	T7S R13E S30
22 Tank	T8S R12E S14
Spa Tank	T8S R13E S31
Bottle Springs Tank	T8S R13E S26
Drop 16 Tank	T9S R13E S2
Left Marvin Tank	T8S R14E S33
Right Marvin Tank	T9S R14E S10

NEED FOR THE PROPOSED ACTION:

Background:

Like many other species of desert wildlife, desert bighorn sheep and mule deer need drinking water and are attracted to water during drier and/or hotter periods of the year (Hervert and Krausman 1986, Elder 1956). Research indicates that water benefits animals in several ways during these times. Water helps animals maintain a more stable body temperature through evaporative cooling, assists in maintaining appropriate electrolyte balance for metabolism, and allows more efficient digestion of food.

Purpose and Need:

The purpose of the proposed action is to provide permanent, reliable water sources to bighorn sheep, deer, and other wildlife at eight locations within the Yuma Training Range Complex (YTRC), a military aviation training facility composed of special use airspace and bombing and gunnery range lands. This complex is located in southwestern Arizona and southeastern California. Water source construction is proposed in the portion of this military complex located in California, known as the Chocolate Mountains Aerial Gunnery Range (CMAGR).

Development of these water sources is required in order to implement mitigation measures associated with the newly concrete lined portions and the fencing of the Coachella Canal located in the Sonoran Desert in Riverside and Imperial Counties. Construction of these water sources is also needed to implement the Department's deer and bighorn sheep management plans for the area.

The first 49 miles of the Coachella Canal were originally dirt, but due to excessive seepage, that section was lined with concrete through the construction of a parallel canal that was completed in 1980, and includes Siphons 1-7. The next 34.5 miles remained dirt until the start of the current project which began in 2004 (Luke Stowe, pers. comm. November 1, 2006), and constitutes the project area from Siphon 7 to 32.

Prior to the completion of the concrete lining of the first 49 miles of the Coachella Canal, the original dirt canal was utilized as a year round water source by desert wildlife including mule deer and bighorn sheep. That source of water was critically important during high ambient temperatures of the summer months. During lining with concrete of the first 49 miles of the canal and upon completion (in 1980 and 1981), up to 200 desert mule deer drowned in the canal (Joe Brana, pers. comm. October 29, 2006, Leon Lesicka, pers. comm. October 29, 2006). Animals, and particularly ungulates, were unable to negotiate the steep concrete walls of the lined canal due to the extreme slope, algal growth, and sediments and became entrapped when attempting to obtain water.

Recent History

Since January 2007, 63 deer have been killed during the concrete lining of the Coachella Canal between Siphons 7-32. This kill number is "low" in that it represents mortalities of deer when their bodies were "available" to be seen. Those animals that were otherwise not visible (i.e. already sunk in the canal, caught up inside the siphons,) surely exist but were not counted or estimated.

Other animal species have perished as well in the canal, including a male bighorn sheep, bobcats, coyotes, grey fox, domestic dogs, etc. Unfortunately, one US Border Patrol agent perished as well. All died because they were unable to exit the canal after walking or falling in due do the combination of swift currents and steep, slick sides.

This recent deer die off represents a great loss to the deer herd in this part of their range. In fact, animals in this area are thought to have established year round residence. Mitigation for the canal lining project included the installation of 57 in-line canal drinkers (immediately adjacent to the canal) and fencing of the entire project area. The drowning hazard has mostly been eliminated as of August 2008, as the water agencies completed fencing of the canal. Drowning remains possible if the integrity of the fencing is not maintained.

Wildlife in this portion of the desert has relied on the canal for drinking water since the 1940's, but are now limited to some in-line canal drinkers some spaced over a mile apart. The benefit of these in-line canal drinkers for deer and sheep has not been demonstrated.

Early monitoring work indicated that animals were not finding the new water sources. The Department received additional mitigation in the form of money to be used to construct 10 off-site (away from the canal) water sources in order to provide opportunities for wildlife to access drinking water in their core habitats. Additionally, the installation of these help drinkers will help satisfy the objectives of the CDFG's: D12 Deer Herd Management Plan (Schaefer and Davis 1995), specifically Prescription D 3 of the Habitat Element which prescribes the installation of permanent water sources; and objectives of the Mountain Sheep Management Plan: West Chocolate Mountains Management Unit.

Completion of the proposed project (with associated burro fencing as needed) would have positive effects upon such limiting factors as:

- Lost access to Coachella Canal water,
- Reduced access to foraging habitat,
- Limited available water,
- Competition with burros for water and forage,
- Human encroachment into sheep and deer habitat particularly with OHV's and increased winter use of desert lands by "snow birds."
- Global environmental change (demonstrated increases in temperature and decrease in precipitation)

The need for the water development is:

1. To provide additional permanent and dependable water sources for deer and other wildlife as provided for in Chapters 2 and 6 of the Northern and Eastern Colorado Desert Coordinated Management Plan (NECO).

2. To fulfill the statutory requirement of Fish and Game Code Section 1801 which states that it is "the policy of the state to encourage the preservation, conservation and maintenance of wildlife resources under the jurisdiction and influence of the state". This policy shall include the following objectives:
(a) To maintain sufficient populations of all species of wildlife and the habitat necessary to achieve the objectives stated in subsections (b), (c) and (d).
(b) To provide for the beneficial use and enjoyment of wildlife by all citizens of the state.
(c) To perpetuate all species of wildlife for their intrinsic and ecological values, as well as for their direct benefits to all persons.
(d) To provide for aesthetic, educational, and non-appropriative uses of the various wildlife species.
(e) To maintain diversified recreational uses of wildlife, including the sport of hunting, as proper uses of certain species of wildlife, subject to regulations consistent with maintenance of healthy, viable wildlife resources, the public safety, and a quality outdoor experience.
(f) To provide for economic contributions to the citizens of the state, through the recognition that wildlife is a renewable resource of the land by which economic return can accrue to the citizens of the state, individually and collectively, through regulated management. Such management shall be consistent with the maintenance of healthy and thriving wildlife resources and the public ownership status of the wildlife resources."

3. To mitigate the historical effects of habitat fragmentation by highways, canals, mining, past and present military use, and railways (Epps *et al*. 2005).
4. Implement Executive Order 13443 signed in August 2007 directing Federal agencies to "…facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat." when consistent with the agency mission.

LAND USE PLAN CONFORMANCE:

The proposed action and alternatives are in conformance with the following approved land use plans, as required by 43 CFR 1610.5.

California Desert Conservation Area Plan of 1980 (CDCA Plan), as amended.

> *Objective #1* of the Wildlife Element of the CDCA Plan is to "Avoid, mitigate or compensate for impacts of conflicting uses on wildlife populations and habitats and to promote wildlife populations through habitat enhancement projects so that balanced ecosystems are maintained and wildlife abundance provides for human enjoyment."
>
> *Objective #2* of the Wildlife Element of the CDCA Plan, in part, is to "Develop and implement detailed plans to provide special management for: "b) areas with habitat which is sensitive to conflicting uses…"

Northern and Eastern Colorado Desert Coordinated Management Plan and Final Environmental Impact Statement, 2002. Chapter 2, Section 2.3.2.

Goals of Desert Bighorn Sheep Conservation Strategy

The overall goal of the desert bighorn sheep conservation strategy in the Planning Area is to ensure the long-term viability of the Sonoran Desert Bighorn Sheep Metapopulation and the Southern Mojave Desert Bighorn Sheep Metapopulation. To achieve this goal, the following subgoals have been identified:

a. Maintain genetic variation in each Metapopulation by conserving and enhancing individual bighorn sheep *demes* (subpopulations).
b. Maintain genetic variation in and viability of individual demes by improving or increasing usable habitat and by augmenting populations.
c. Maintain habitat connectivity within and between demes.

Objectives

a. Identify and protect bighorn sheep *essential habitat* (i.e., that habitat providing forage, water, cover, and space, including movement corridors, necessary for maintenance of a viable Metapopulation.);
b. Maintain, improve, and restore habitat quality within essential habitat;

c. Transplant bighorn sheep as required to reestablish lost demes or to augment demes with less than 50 individuals;

Desert Bighorn Sheep Strategy

The bighorn sheep populations within the Northern and Eastern Colorado Desert Planning Area will be managed as two metapopulations – the *Sonoran Desert Bighorn Sheep Metapopulation* and the *Southern Mojave Desert Bighorn Sheep Metapopulation* – through decisions made in this Plan and more specific plans for these two meta-populations that CDFG is developing Although JTNP is a cooperator to managing the *Southern Mojave Metapopulation*, CDFG has no authority or lead role for management, monitoring, or other actions on JTNP lands (as otherwise outlined below). The CDFG plans will contain considerably more detail and site-specific proposals. All objectives and actions which follow, apply to both metapopulations unless specified otherwise. Most of the actions were taken from a draft management plan prepared by CDFG for the Sonoran Desert Bighorn Sheep Metapopulation. Work on the Southern Mojave plan has not yet commenced. At least one alternative in each action set implements BLM's Fish & Wildlife 2000 Plan entitled "Mountain Sheep Ecosystem Management Strategy in the 11 Western States and Alaska".

Desert Mule Deer Management--Goals and Objectives

Desert mule deer within this project area is a native species managed by the California Department of Fish and Game under the Burro Deer Herd Management Plan (Celentano and Garcia 1984) and the D-12 Deer Herd Action Plan (Schaefer and Davis 1995). This unit is one of two statewide, managed under a separate action plan. This is an indication of the uniqueness of this deer subspecies (*Odocoileus hemionus eremicus*). Deer are included in this section because artificial waters are proposed in NECO to help support their population. Deer would also benefit from prescriptions related to protecting and enhancing habitat for both bighorn sheep metapopulations.

The objective of this effort is to provide for the aesthetic, educational, and recreational uses of desert mule deer.

Desert Mule Deer Strategy

The desert mule deer populations within the Northern and Eastern Colorado Desert planning area would be managed as two populations identified by their current CDFG hunting zone designation: D-12 and D-17. Desert mule deer would continue to be conserved as a native species and would continue to be managed as a game species. While deer is a native species found in Joshua Tree National Park (JTNP) and Chocolate Mountains Serial Gunnery Range (CMAGR), hunting is not allowed on those lands. In addition, in JTNP there would be no game management consideration for deer, including artificial waters, but there is in CMAGR in support of hunting that occurs outside CMAGR. Therefore, the bulk of this strategy will be limited to BLM and CMAGR lands.

1. Manage deer in deer habitat throughout its range as currently prescribed in the state's Burro Deer Herd Management Plan.

2. CDFG would continue to construct, improve, and maintain existing natural and artificial water sources and exclosures around them where required and coordinate such work through other agencies and volunteer groups according to CDFG standards and Memoranda of Understanding (MOUs) with BLM and CMAGR.

3. Artificial waters proposed for construction would be considered as a grouped proposal as noted for waters proposed for bighorn sheep (see section 2.3) and addressed in a NEPA review on a yearly basis for administrative efficiency. Since about half of the proposed artificial waters for bighorn sheep and desert mule deer are mutually beneficial, they would also be considered simultaneously.

Objective A. Provide for the aesthetic, educational, and recreational uses of desert mule deer.

Action: New water developments would be constructed to expand usable habitat for desert mule deer. Map 2-19 Appendix A shows 101 prospective areas for the new water developments in the Sonoran WHMA. Of the 101 sites, 53 are common to both deer and bighorn sheep. Design, construction, and maintenance information is provided in Appendix M. Proposed sites have been generally mapped.

NECO CMP/FEIS, July 2002 Appendix B, Standards and Guidelines, Pages B-4 – B-6

Resource Advisory Council Direction

At a minimum, State or regional guidelines must address the following:

- Maintain, restore, or enhance water quality to meet management objectives (e.g., meeting wildlife needs);
- Maintain or promote the physical and biological conditions to sustain native populations and communities;

PROJECT ALTERNATIVES

Alternative A: Proposed Action

The CDFG proposes to construct, operate, and maintain eight Desert Wildlife Unlimited (DWU) style water sources (Lesicka and Hervert, 1995) to be named Track Walla Tank, Doc Homs Tank, 22 Tank, Spa Tank, Bottle Springs Tank, Drop 16 Tank, Left Marvin Tank and Right Marvin Tank.

The proposed water developments would consist of a small concrete dam, a metal pipeline, a buried 10,000 gallon storage tank, and a 2,500 gallon wildlife accessible subterranean drinker. Three sites, Track Walla, Bottle Springs, and Spa 16 Tank will have two small dams each on a separate small wash at each site.

The total area of permanent surface disturbance for all eight construction sites would be 10,280 square feet or approximately 0.32 acre. The permanent disturbance at each location would be slightly different based upon unique environmental conditions at each site. Unique to the DWU guzzler system are a number of factors that contribute to the efficiency and reduction of required maintenance.

The design simplicity, lack of mechanical parts, and the ability to collect and store large amounts of water from small rain events has reduced costly repairs and/or replacements experienced by different guzzler designs. The number of inspections, monitoring visits and water hauling trips is also minimized. Additional attributes include low visual impact as the system is completely buried except for the drinker and small dam (and occasionally short sections of pipe which are exposed at ground level); increased availability of water for multiple species use, and the drinker is safe for desert tortoises.

Pre-Construction

Prior to any construction the site must be evaluated by a qualified archaeologist authorized by the BLM. The archaeologist may require small adjustments to the placement of the tanks, drinkers or temporary parking areas during construction. Significant findings may require further actions by the archeologist to consult with the State Historic Preservation Office prior to construction.

Immediately prior to construction the site must be surveyed for and cleared of desert tortoise by a qualified biologist authorized by the BLM.

Site Excavation

At each site a trench would be excavated and backfill materials would be placed to the side of the trench adjacent to the wash. The tank and drinker would be placed in the trench below the dam area but outside the wash and the excavated rock and soil would be replaced and smoothed back to the surrounding gradient, with the installation buried as described below.

The installation sites would be excavated for the burial of a 10,000 gallon fiberglass tank and a 2,500 gallon drinker. Both would be completely buried, except for a 1.5 inch diameter screened U-vent pipe on the storage tank, as well as the drinker lip, opening and concrete overflow apron which would be exposed at ground level. The tank would be covered to a depth of two feet while the drinker top would be buried to ground level. All excavated materials from the cavity formed for the installation of the tank and drinker would be placed adjacent to the excavation. The tank would be placed at the rear of the cavity, which would be excavated to a depth low enough to bury the tank two feet below the surface. The drinker would be set up to10 feet away at or just slightly below the level of the tank. Excavated rock and soil would be replaced, smoothed and contoured to best reflect the surrounding surface contours so that the buried tank and drinker would become part of the landscape.

Individual washes would be partially dammed depending on the site. Construction of dams would require mixing of cement. The construction material storage areas would be located

approximately 25 feet away from the wash, on flat ground adjacent to the wash area. A screened intake in the dam face would provide water to a pipe which would then deliver it to both storage tank and drinker. All excess cement would be cleaned up and removed from the site.

Storage Tank and Drinker

Each 10,000 gallon storage tank would be a 30-foot long x 8-foot diameter fiberglass cylinder. The drinker would be comprised of a 2,500-gallon, 16 foot long by 4 foot wide by 8 foot deep fiberglass tank with a ramp. The drinker would be buried underground, adjacent to the tank, and the two would be connected by a 2 inch flexible schedule 40 PVC Jacuzzi pipe to allow for naturally occurring soil movement such as settling or earthquakes. Only the walk-in drinker opening would be exposed. The concrete overflow apron is at the entrance of the drinker opening and would be the width of the drinker, 4 feet wide, extending 6 to 8 feet to the front. The entrance to the drinker would be a ramp with steps so that animals having access to the water can escape easily. Steps would descend into the drinker at 1 foot intervals and be 2.5 feet wide. The remaining 0.75 foot on each side of the steps would be roughed, and allow for small animal (including desert tortoise) ingress and egress. The concrete steps would be constructed on-site.

Dam

Runoff from seasonal rainfall would be detained behind the short dam and flow through a buried 6-inch ABS pipe. The exposed intake at the dam would be covered with wire mesh to prevent entry of debris. Water would be gravity fed through the pipe to the tank and drinker. After the tank and the drinker are filled, excess runoff would flow out of the drinker or over the dam and return to the wash.

The dam would be constructed of reinforced concrete and faced with native stone collected at the site so as to blend into the surrounding landscape. The dam would partially block water flow in the wash and be no more than 3 feet tall from the bottom of the wash. Up to 2 cubic yards of sand would be removed from the wash for mixing concrete. A mobile water tank would be utilized to haul all water for construction purposes and would be towed to the site by vehicle. Concrete would be mixed using a gasoline engine cement mixer and conveyed to the dam and drinker site by wheelbarrow. Approximately 20 gallons of concrete rinse water would be generated and disposed of onsite. Natural forces are expected to fill in the upstream side of the dam with wash materials and replace those removed for construction and for mixing concrete.

Burro Fencing

Since all of the proposed drinkers are outside of any Burro Herd Management Area there should be no burros accessing these water sources, however, feral burros do exist outside of the HMAs and are found in the CMAGR. If sign of burro use is found at these drinkers the BLM would be notified. The BLM may elect to round up burros from the area if staff and resources are available. The BLM and the Department may decide to exclude burros with fencing if it determined a round up cannot be completed in a time frame satisfactory to the department. These fences would consist of 1 1/2 inch diameter steel pipe lashed with wire to braced tee posts.

Figure 1. Wildlife Guzzler with burro fencing

Vehicles, Construction Equipment and Access

Site access would be along existing routes that have been designated as open routes under the NECO plan. There would be no road construction or grading associated with this project.

Vehicles would be utilized to carry work tools (shovels, picks, rakes) as well as materials, tow one 1,000 water tank, one 10,000 gallon fiberglass tank and one 2,500 gallon drinker (both on trailers), and one portable gas-powered cement mixer.

Excavation equipment would consist of a Case 680 rubber-tired backhoe and a model 270 John Deere flat-tracked excavator (or equivalents). A trailer-mounted 1,000 gallon water tank (gravity-fed or with a gasoline-powered motorized pump if necessary) would be used for the initial charging of the 2,500 gallon drinker. An additional 300 gallons would be used for mixing concrete. Access to all sites would be along military approved designated routes of travel.

Post Construction Activities

The project areas would be flagged prior to construction activities and flagging would be removed upon project completion. Upon completion of the project, areas disturbed by the project would be restored to as natural condition as possible and re-vegetated with any native plants that were removed during construction. All disturbed soil surfaces would be contoured and raked to match the surrounding terrain. Any rocks that would be removed would be scattered over the disturbed area. Upon completion of construction activities disturbed areas around the dam, piping, drinker and storage tank would be re-contoured and/or raked to match the surrounding terrain.

Personnel

Approximately 20 people would be at each work area for a maximum of five days for the installation. Some people may camp near the sites. All personnel would be briefed daily on site stewardship and safety. All trash created on site would be properly disposed in a raven-proof container and removed upon completion of the project. Supplies, tools and materials would be stored, when not in use, at this location and a first-aid/safety area would be established.

Monitoring

CDFG and/or its agents would drive to the sites to monitor the new artificial water sources as needed for water level and quality only after gaining approval from the military to enter the restricted space. Access to these guzzlers will be very limited as compared to water sources on other open public lands (ex. Limited Use BLM lands). CDFG will work with the military to coordinate access to these drinkers at least twice a year. CDFG/agents would discuss and/or provide to BLM an annual anecdotal summary of observations regarding burrows, scat, or remains of desert tortoises and observations of corvid species that were made near or in the guzzlers during construction, routine maintenance and periodic visits. If impacts to desert tortoises are evident from the guzzlers, then additional monitoring of the sites would be discussed between CDFG/Agents, the military and the BLM.

Repair and Refill

The anticipated lifespan of the tank (when buried underground, protected from UV light) is greater than 50 years. Other components of the system (i.e. concrete dam, concrete steps, and ABS pipe) may deteriorate or require repair due to weathering or infrequent environmental events such as earthquakes or severe floods.

Refill activities are anticipated when storm events do not provide sufficient water to the system. When the system is full, the water would be expected to last for approximately two and a half years without needing any natural recharge or refill. CDFG or its agents would fill the guzzlers on an as needed basis. Refill would involve a vehicle with water tank or trailer to fill the guzzler tank.

AREA DESCRIPTION

This project would occur in the Colorado Desert subsection of the Sonoran Desert approximately 10 miles north of Niland, CA. The climate is that of the low desert with very hot summers and warm winters. Rainfall averages about 3 inches per year with the bulk occurring in the late summer and winter. Vegetation here is best characterized by Sonoran creosote bush scrub, but many areas are cut by desert washes inhabited by microphyll woodlands. Elements of Mojave Desert vegetation are present at the northern end of range. The soils range from very coarse sand and gravel in the washes to rock and desert pavement in the upland areas. Wildlife species in this area include bighorn sheep, mule deer, coyotes, bobcats, ringtail, wild burros, and a wide

variety of reptiles, birds and insects. The federally threatened desert tortoise is known to inhabit this area. No federally or state listed plants are known from the area.

Track-Walla Tank: The project site is on the north slope of the Chocolate Mountains about 1 mile south of the Bradshaw Trail. Principal plant species include burro-bush, brittle-brush, creosote and cat-claw acacia.

Doc Homs Tank: This project site is located on the north slope of the Chocolate Mountains, south and west of the proposed Track Walla Tank. Primary plant species include dried annuals mostly shismas and Sahara mustard. The site is located in an area heavily affected by ongoing natural erosion and ponding of water.

22 Tank: The project site is located on about 1.5 miles north of Drop 22 on the Coachella Canal at the toe of the mountains. Primary vegetation community is creosote scrub.

Spa Tank: This project site lies northeast of Drop 21 about 0.5 miles north of the Coachella Canal. This site is in more rocky terrain. Plant species are limited to highly scattered creosote, bursage, an occasional brittlebush, and dried annuals.

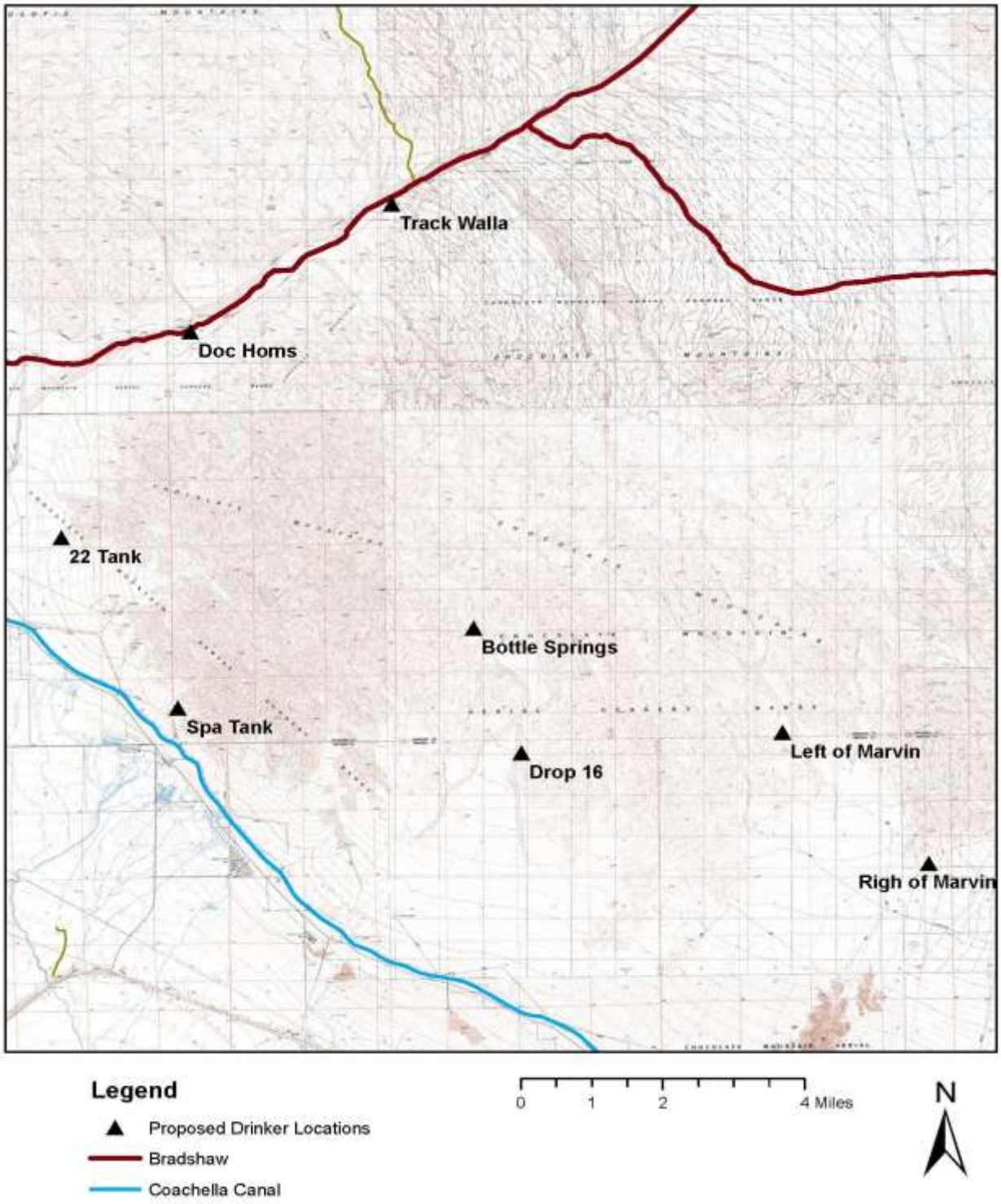
Bottles Spring Tank: The project site is located about seven miles high up a large drainage in the interior of the Chocolate Mountain main mass. The site is in a large canyon with very sparse vegetation. Plants present in the canyon are very sparse distributed and include an occasional brittlebush, cat-claw and burroweed.

Drop 16 Tank: The Drop 16 Tank site lies lower in the same large drainage complex, south of where Bottle Springs Tank is located. The site is about 3.5 miles north of the Coachella Canal. The vegetation type of the area is creosote scrub.

Left of Marvin Tank: The project site is located up a large wash know to local people as Marvin's Wash although it is un-named on USGS maps. As its name indicates this site is located on the left side of the wash when viewing it from the Coachella Canal. The dominate vegetation of the area is creosote scrub.

Right Marvin Tank: This site is located south and west of Left of Marvin Tank and is located on the right side of the wash when viewing it from the Coachella Canal. The main vegetation community of the area is creosote scrub.

Figure 2. Location of the Eight Proposed Wildlife Water Developments



Alternative B: No Action

The wildlife water developments would not be built. Animals now excluded from the newly fenced Coachella Canal would be limited to finding and using wildlife water sources along the canal. By being forced to come to the canal at a limited number of places they further expose themselves to interactions with humans including, but not limited to: harassment, injury and/or death as a result of vehicle collision, poaching, etc. The availability of drinking water in this situation would be worse for sheep and deer under the no action alternative.

AFFECTED ENVIRONMENT:

Air Quality:
The Imperial and Riverside Counties Air Quality Control District have air quality jurisdiction over the project area. In general the air quality is excellent in the region; however, the Chocolate Mountains are within a designated PM 10 non-attainment area.

ACEC:
Two of the eight proposed guzzlers, Doc Homs and Track Walla Tanks, are located within the Chuckwalla Desert Wildlife Management Area (DWMA). The DWMA was established as an ACEC under the Northern and Eastern Colorado Desert Coordinated Management Plan and Final Environmental Impact Statement in order to protect the desert tortoise.

Cultural Resources:
Background Research
Prior to the archaeological field survey of the locations for the proposed drinkers, a literature review and records check was conducted by the Marine Corps Air Station (MCAS) Archaeologist at the Range Management Department Cultural Resources Facility at MCAS Yuma. A comprehensive archaeological records search for the Chocolate Mountain Aerial Gunnery Range (CMAGR) was conducted in 2001 at the California Historical Resources Information System repository at the Imperial Valley Desert Museum and the University of California at Riverside for the Historic and Archaeological Resources Protection (HARP) Plan (Apple and Cleland 2001). In 2006, this overview was updated to include recently recorded sites and subsequent surveys conducted on the CMAGR for a Regional Archaeological Research Design for the CMAGR (Cleland and Wahoff 2006). These overviews and survey reports at MCAS Yuma provided information on past surveys and cultural resources on the CMAGR.

Two previous surveys were conducted near the APE, but neither survey included areas within the APE. Bull et al 1991 conducted a survey for the proposed conversion of the Eagle Mountain open pit iron mine near Desert Center, California, into a solid waste disposal site. The study included a 52-mile survey along the historic Kaiser Industrial Railroad. The second survey was conducted in support of Navy SEAL training (Queen 2007) and included two arroyos just inside the north boundary of the CMAGR. No resources were located in this 102- acre survey).

Previously recorded sites near the APE include the historic Kaiser Industrial Railroad, which has not been formally recorded nor evaluated for the National Register. The railroad was constructed in 1947-48 to haul iron from the Eagle Mountain Mine to Durmid, California where it met the Southern Pacific Railway on its way to the Kaiser Steel Works in Fontana, California. The railroad, which runs along the northern boundary of the CMAGR, is currently in disrepair, having been abandoned in 1983.

The Bradshaw Trail is an historic trail that provided access from San Bernardino, California, to the gold mines in La Paz, Arizona. The portion of the trail closest to the CMAGR runs roughly parallel to the historic railroad. Bradshaw developed this trail in 1862 along parts of an old Indian trail. In 1931 Malcolm Rogers recorded 80 miles of a prehistoric foot trail from Palo Verde along the northern boundary of the CMAGR to the Coachella Valley (Cleland and Wahoff 2006).

One prehistoric site is located within one mile of one of the proposed drinkers. Site CA-RIV-2640 is a significant and sensitive site containing petroglyphs, trails, hearths, cleared circles, cairns, and a cremation. Recorded by Jay von Werlhof in 1983, the site is monitored by MCAS Yuma. It was last visited in 2004 and found as originally recorded (Apple and shaver 2005).

No Traditional Cultural Properties (TCPs) have been identified by tribes with historic ties to the region. The Chocolate Mountains appear to be a place people traveled through on their way to the Colorado River or the Coachella Valley. Tribes that may have an interest in the CMAGR are the Kamia (Desert Kumeyaay), Quechan, Halchidhoma, Mojave, Chemehuevi, Cahuilla, Cocopah and Gila River Indian Community.

Field Survey Methods

The survey was conducted over two days by a team consisting of Mr. Leon Lesicka, Desert Wildlife Unlimited, Inc., who identified the locations; wildlife biologists from the California Fish and Game; two natural resources specialists from MCAS Yuma, who gathered GPS data for the drinker; and archaeologist from MCAS Yuma. The team followed Mr. Lesicka's directions to each site where the locations of the dam, underground water conveyance, and drinkers were flagged. Under Mr. Lesicka's direction, the boundary of the APE was also flagged and recorded with a Leika GPS. The wildlife biologists and the archaeologist then walked back and forth within the APE which was generally not more than a 150-foot radius. All 8 proposed drinkers were surveyed in this manner. Access was along existing trails.

Field Survey Results

Botany: (This and other biological information for the EA were obtained from the YTRC FEIS, 1997)
The Chocolate Mountain Range is situated in the Lower Colorado River Valley Subdivision of the Sonoran Desert (see Brown 1973; Brown and Lowe 1974; Lowe 1964; Shreve and Wiggins 1964; Turner and Brown 1982). Many of the plants found on the Chocolate Mountain Range are, however, representative of Mojave Desert plant assemblages. For example, Mojave yucca, desert cassia, rayless encelia, Nevada joint fir, and short-leaved are all part of the Chuckwalla Bench (north end of the Chocolate Mountains) flora even though they are more commonly known as Mojavean species. The alluvial plains of the Chuckwalla Bench support a rich diversity of species, higher than most other regions of the Chocolate Mountain Range. This area is broadly ecotonal between the more northerly Mojave Desert and the Sonoran Desert. The higher elevations of the Bench compared to that of the southern portions of the range, the cooler winter temperatures of the north, and the greater likelihood of summer precipitation in the north are all partly responsible for the floral diversity of the Chuckwalla Bench (University of California, Riverside [UCR] 1992).

Three basic vegetation types occur on the Chocolate Mountain Range: (1) creosotebush scrub, (2) microphyll woodland, and (3) alkali/saltbush swale. In their analyses, UCR (1992) identified seven vegetation units that could be mapped, all variations of the three basic types.

Creosotebush scrub covers the vast majority of the Chocolate Mountain Range including most of the Chocolate Mountains themselves. Parts of the Chuckwalla Bench and the Little Mule Mountains are also strongly dominated by this type. This vegetation type consists of open stands of scattered low shrubs including evergreen sclerophyllous shrubs (e.g., creosotebush) and semi-shrubs (e.g., white bursage) and leaf and stem succulents (e.g., agave and cacti, respectively). Creosotebush scrub covers many thousands of square miles in Arizona and southeastern California. The type is noted not only for its wide geographic distribution in arid areas, but also for its tendency to occur in nearly pure stands with plants having remarkable uniformity in size (Kearney and Peebles 1960). Creosotebush scrub occurs in very sparse stands on the steeper, rockier slopes of the Chocolate Mountains. Denser stands occur on dissected Pleistocene/Pliocene fan deposits along the axis of the Range, primarily on the Chuckwalla Bench. Species composition within the type shifts with terrain and from north to south in the Chocolate Mountains. Shrubs occurring in most stands throughout the area include creosote bush (*Larrea tridentata*), white bursage (*Ambrosia dumosa*), ocotillo (*Foquieiria splendens*), brittlebush (*Encelia farinosa*), and white ratany (*Krameria* spp.). Also common in many areas are rush bebbia, indigo bush (*Psorothamnus emoryi*), cheesebush (*Hymenoclea salsola*), fagonia, desert trumpet, desert fluff-grass, hedgehog cactus, and prickly pear. In the northeasterly portion of the Range, species present in addition to creosotebush may include jojoba, desert cassia, goldenhead, wooly brickellia, many-headed barrel cactus, rayless encelia, indigo bush, Nevada joint-fir, short-leaved baccharis and Mojave yucca, giving an aspect similar to that of the Mojave Desert. Occasional to common shrubs in the south that are associated with creosotebush include Munz cholla, all-thorn, and buckhorn cholla.

Desert flats dominated by creosotebush scrub are often dissected by drainage ways. Larger individual creosote bushes are often concentrated along arroyos in association with desert broom, Anderson thornbush, catclaw, brittlebush, big galleta grass, rush bebbia, cheesebush, and tetracoccus.

On lowland flats, dominated by creosotebush scrub, barren areas may occur on inter-wash sites. In many cases these barren areas consist of highly varnished desert pavements.

Rocky slopes are locally dominated by stem succulents such as teddy bear cholla, barrel cactus and hedgehog cactus with occasional creosotebush, white bursage, and ocotillo. Ten species of stem succulents (all cacti) are found within the creosotebush scrub vegetation type

Occurring along watercourses in the Chocolate Mountain Range, microphyll woodlands consist largely of tall shrubs; small, mostly leguminous trees; and an under story of smaller shrubs (UCR 1992). Species composition in microphyll woodlands shifts from north to south. Along Salt Creek Wash at the northern boundary of the Chocolate Mountain Range, smoke tree, desert willow, blue palo verde, and ironwood are abundant with cheese bush as a common understory shrub. Also in the north the Chuckwalla Bench microphyll woodlands (mostly above 2,000 feet) are especially rich. Wash species here include cat-claw, short-leaved baccharis, blue palo verde, big galleta grass, Anderson thorn bush, desert tobacco, smoke tree, desert lavender, and ironwood. Honey mesquite, a common species along drainage ways farther to the east, is found locally in parts of the Chuckwalla Bench, Salvation Pass, Iris Wash, and Frink Wash.

In the southern portion of the Chocolate Mountain Range, microphyll woodlands are dominated by blue palo verde, ironwood, and Anderson thorn bush with brandegea, rush bebbia, desert tobacco, fairy duster, and chuperosa. Munz cholla dominates the Beal Wash microphyll woodland north and east of Beal Well. All-thorn is local along small washes on the alluvial fan northeast of Pegleg Mine. Most of the bajadas of the southern Chocolate Mountain Range have a mixture of creosote bush scrub with microphyll woodland vegetation concentrated along finely dissected arroyos with inter washes of desert pavement (UCR 1992). In this portion of the Chocolate Mountain Range, microphyll woodlands are characteristically interspersed with nearly barren desert pavement.

The alluvial fans on the north and west sides of the Chocolate Mountain Range, lacking in desert pavement, consist of more broadly dissected arroyos with associated microphyll woodlands and open stands of creosote bush scrub. The broad washes opening toward the Salton Sea (Frink, Iris, Beal, Salvation, Mammoth) fit this description (UCR 1992). All but Frink Wash have stands of Munz cholla along with the more common species such as blue palo verde, catclaw, ironwood, Anderson thornbush, desert lavender, indigo bush, and brandegea. On the alluvial fans emptying toward Salt Creek, cheese bush, indigo bush, and *Salvia greatai* are common. Near Regina, creosote bush and white bursage may be the only perennials outside the wash systems (UCR 1992).

Bunchgrass/catclaw swale consists largely of alkali sacaton with velvet mesquite and catclaw. Distribution of this type is extremely limited; it is found only along the Bradshaw Trail at the "divide" between the Salt Creek and Milpitas Wash drainages, and areas south of Black Hill, and along the north side of the Little Mule Mountains. This type occurs in depressions with fine soils where water accumulates following periods of substantial rainfall. Visually, the dominant species is the coarse grass, alkali sacaton, which forms an almost solid cover in the central part of the depression. Larger woody species tend to be concentrated around the edges (UCR 1992).

In addition to the dominant, perennial plant associations discussed above, the Chocolate Mountain Range supports a rich and diverse assemblage of annual plant species, most of which appear only during the spring following winters of adequate rainfall. UCR (1992) estimates that approximately 300 species of plants are likely to occur on the Chocolate Mountain Range. Of this number, probably close to 200 species, or nearly two-thirds of the total flora is composed of species of annual forbs, grasses and/or vines. Indeed, the greatest contribution to overall floral species diversity in the Sonoran Desert is made by annual forbs and grasses that are obvious in the landscape for only a few weeks each year (Venable 1993). Many species of plants do not appear in the annual flora every spring, but have the ability to remain dormant as seeds for many years and only appear when conditions favoring growth and reproduction are ideal. Table B-1 in Appendix B contains a partial listing of some of these species.

During most spring blooming periods, except when winter rainfall has been inadequate to trigger germination and sustain seedling plants, the following genera compose a prominent portion of the annual flora: *Amsinckia*, *Brassica*, *Bromus*, *Camissonia*, *Chaenactis*, *Cryptantha*, *Eriophyllum*, *Eschscholtzia*, *Festuca*, *Geraea*, *Lesquerella*, *Lotus*, *Mentzelia*, *Mirabilis*, *Mohavea*, *Monoptilon*, *Nama*, *Oenothera*, *Palafoxia*, *Pectocarya*, *Plagiobothrys*, *Plantago*, *Rafinesquia*, *Salvia*, *Schismus*, *Senecio*, *Sphaeralcea*, and *Verbesina*.

Special status plants that occur in or near the project area include fairy duster (*Calliandra eriophylla)* andMunz's cholla (*Opuntia munzii).*

Environmental Justice: This project would not affect environmental justice issues, therefore this element will not be considered further.

Floodplains:
While there are numerous washes within the project area that are prone to flash flooding, there are no floodplains near the project areas. The guzzlers are designed to capture surface flow from small peripheral washes during rain events. Excess water would continue to flow downstream. The natural flooding of major wash systems would not be interrupted, therefore this element will not be considered further.

Invasive/Non-native Species:
Invasive/non-native species in this area include Sahara mustard (*Brassica tournefortii*) Mediterranean grass (*Schismus sp*.) and tamarisk (*Tamarix sp*). Sahara mustard and Mediterranean grass are present throughout the project areas. These species are annuals that die each year and their seeds lie dormant for long periods of time in the soil. During wet periods these species erupt and cover much of this portion of the desert. These annuals pose a threat to the native community by increasing risk of wildfire by providing light transmission fuels. These species can also compete with native plants. Tamarisk is usually found in association with moisture, either in washes or riparian areas. It can pose a major threat to native plant life by depleting subsurface water and increasing soil salinity. With enough water available, tamarisk would grow in dense monoculture stands and provide little benefit to most wildlife.

Native American Concerns:
No areas of significance to Native American groups are known to exist within the project area. Native American Tribal consultation is in progress and is being handled by Marine Corps Air Station Yuma cultural resources personnel. Formal consultation letters were sent to 12 Tribes in mid January 2009.

The necessary constructions of the drinkers precluded finding archaeological sites since the APEs were located in washes which were disturbed by natural erosion. No archaeological resources were located even inside the APEs. When possible, areas outside the APE where land forms were more stable were also checked with no resources located. Access to the proposed drinker locations is from existing routes directly to the washes and so will not involve driving any equipment cross-country.

Prime & Unique Farmlands:
There are no prime and unique farmlands in the project area; therefore this element will not be considered further.

Recreation:
Military lands are posted closed to the public, however game species such as deer, quail, and furbearing mammals will likely move between the military lands and public lands open for hunting.

Threatened or Endangered Species:
Mojave populations of the desert tortoise (*Gopherus agassizii*) were listed as threatened on April 2, 1990, and the U. S. Fish and Wildlife Service (USFWS) designated critical habitat for the species on February 8, 1994. Two of the proposed 8 guzzlers are located within designated critical habitat for the desert tortoise. Although no tortoises or tortoise sign were observed, the primary constituent elements of critical habitat, (i.e. cover shrubs, forage, and adequate burrowing substrate) were present at or near the project locations for all eight guzzlers.

Results of the USFWS range-wide monitoring of desert tortoises showed a density of 6.38 tortoises/km^2 (95% CI = 4.60-8.86) in 2005 for the Chuckwalla Bench area which is the closest USFWS site to the Chocolate Mountains but is believed to have higher density than any surrounding areas.

Sensitive Wildlife species identified in the project area:
Table 1 compiles information special status species of wildlife known from the general region.

Table 1. Sensitive wildlife listed in the Chocolate Mountains Range in the EIS

Species	Status	Presence at project location
Prairie Falcon *(Falco mexicanus)*	SSC	Species was not observed, but is likely present. Foraging habitat.
Le Conte's thrasher *(Toxostoma lecontii)*	SSC, BLM Sensitive	Species was not observed, habitat is present but not optimal.
Gila Woodpecker (*Melanerpes uropygialis*)	CE	Species was not observed, but is likely present in microphyll woodland
Chuckwalla *(Sauromalus obesus)*	SSC	Species was not observed, there are no steep rocky slopes in the affected area.
Rosy Boa *(Lichanura trivirgata*)	SSC	The project site is within the species range, but habitat is not optimal.
Colorado Desert Fringe-toed Lizard (*Uma notata)*	SSC, BLM Sensitive	The project site is within the species range, but habitat is not optimal, there are no windblown sands in the affected area.
Desert Tortoise (*Gopherus agassizii*)	FT	Species was not observed, but is likely present on or near the sites.
Pallid Bat (*Antrozous pallidus)*	SSC, BLM Sensitive	The proposed project is within the range of this species. Suitable seasonal foraging and roosting habitat are present near the project area. No

		known hibernacula or maternity roosts are present in the area.
Townsend's Western Big-eared Bat (*Plecotus townsendii*)	SSC, BLM Sensitive	The proposed project is within the range of this species. Suitable seasonal foraging and roosting habitat are present near the project area. No known hibernacula or maternity roosts are present in the area.
Pocketed Free-tailed Bat (*Tadarida femorosaccus*)	SSC	The proposed project is within the range of these species. Suitable seasonal foraging and roosting habitat are present near the project area. No known hibernacula or maternity roosts are present in the area.
California Leaf-nosed bat (*Macrotus californicus*)	SSC, BLM Sensitive	There are known populations in this area. Suitable seasonal foraging and roosting habitat are present near the project area.
Fringed Myotis (*Myotis thysanodes*)	BLM Sensitive	The proposed project is within the range of this species. Suitable seasonal foraging and roosting habitat are present near the project area. No known hibernacula or maternity roosts are present in the area.
Desert Bighorn Sheep (*Ovis canadensis*)	BLM Sensitive	While no bighorn sheep were observed, they are known to inhabit this area.

Visual Resource Management:
There is no visual impacts of these projects to the public as the small disturbances are well within the military lands and none are visible to the public from the outside the military boundaries.

Wastes (hazardous/solids):
There are no known hazardous wastes at the eight proposed guzzler locations, and no hazardous waste would be generated by construction of water developments, therefore this element will not be considered further.

Water Quality:
In the Chocolate Mountains, surface drainage is divided. Off the western slopes, drainage is toward the Salton Sea. Drainage from the east slope of the northern Chocolate Mountains is to Salt Creek which, in turn, drains to the Salton Sea. Drainage from the east slope of the central portion of the Chocolate Mountains is by several passes through the mountains. The drainages in these passes carry ephemeral flows to the Salton Sea. Drainage from the eastern slope of the southern portion of the Chocolate Mountains is northeastward into Milpitas Wash and to the Colorado River.

There are no waterways, natural or manmade, within the project area and no permanent, naturally occurring water sources (i.e. springs). This region receives an average of less than 3 inches of rainfall per year. The rainfall that does occur runs off the ground and into the washes very quickly resulting in flash flooding. These floods naturally carry large quantities of soil and rock.

Wetlands/Riparian Zones:
There are no wetlands or riparian zones in the project area, therefore this element will not be considered further.

Wild & Scenic Rivers:
There are no rivers in the project area, therefore this element will not be considered further.

Wild Horses and Burros:
Burros aggressively compete for vegetation and available water in arid environments and actively exclude native wildlife including sheep and deer. None of the proposed sites exist within a BLM designated Burro Herd Management Area (HMA). However, burros currently range outside of the closest HMA and within a broad area adjacent to the Coachella Canal and are located inside the CMAGR and Chuckwalla Bench DWMA. Recently, burros have moved along the Coachella Branch of the All American Canal far from the closest HMA and are creating problems at temporary and permanent wildlife drinkers along the canal. Attempts by the BLM to round up these burros have had some success. Six burros were captured and removed from the area October 10, 2008.

Wilderness:
None of the project locations are located within wilderness areas therefore this element will not be considered further.

Wildlife including Migratory Birds:
The project area is inhabited by an abundance of wildlife species, including but not limited to mule deer, bobcat, black-tailed jackrabbit, red-tailed hawk, Gambel's quail, desert iguana, and zebra-tailed lizard. This region typically supports a higher diversity of wildlife than many other parts of the Colorado Desert. The hydrology in this area promotes development of microphyll woodlands within the extensive wash systems throughout the region. These woodlands are the

major reason for the abundance and diversity of wildlife in this area. They provide cover, forage and nesting areas for multitudes of species.

This area is particularly important to migratory birds. Many species of birds migrate through this area and utilize these woodlands as stopover habitat. This is especially important for these species crossing hundreds of miles of harsh desert. The abundant palo verde, ironwood and cat-claw in the washes provide excellent cover and foraging habitat for neo-tropical migrants. In 2001 microphyll woodlands were designated as an important bird area by the National Audubon Society.

ENVIRONMENTAL IMPACTS

The following table summarizes potential impacts to various elements of the human environment, including the "critical elements" (*) listed in BLM Manual H-1790-1, Appendix 5, as amended. BLM considers critical elements of the human environment to fall into 3 categories.

1. Uses of or resources that are not affected by the proposed action (NA);
2. Uses of or resources that are present and that may or may not be affected by the proposed action (PA);
3. Uses or resources not present and not affected by the proposed action (NP).

Table 1. Table of Critical Elements.

Critical Element	Not Present	Not Affected	Possibly Affected
Air Quality*		x	
Areas of Environmental Concern *			x
Cultural Resources*		x	
Native American Concerns*	x		
Environmental Justice		x	
Prime or Unique Farmlands*	x		
Floodplains*	x		
Botany			x
Invasive, non-native species			x
Threatened or Endangered Species*			x
Wildlife including Migratory Birds			x
Wild Horses and Burros			x
Waste, Hazardous or Solid*	x		
Water Quality (Surface and Ground)*		x	
Wetlands and Riparian Zones*	x		

Wild and Scenic Rivers*	**x**		
Wilderness*	**x**		
Recreation			**x**
Visual Resource Management	**x**		

Air Quality:
There would be negligible air quality disturbance by dust and vehicle emissions during initial construction of the proposed action. However the entire military range falls within aPM10 non-attainment area.

Cultural Resources:
No historic properties were identified within the APE therefore no historic properties will be affected by this project. A Class III archaeological survey was conducted in order to identify historic properties within the APE. No cultural resources were identified. The APE for each guzzler is flagged and personnel will ensure that all activity takes place within the surveyed area. If subsurface cultural resources are found during installation of the guzzlers, construction should cease until an agency archaeologist can examine the area and make a recommendation.

Invasive/Nonnative Species:
Sahara mustard and Mediterranean grass are already prevalent throughout the project area. It is not anticipated that construction and maintenance of the guzzlers would result in an appreciable increase in these species. There is currently no tamarisk in close proximity to the proposed guzzlers. However, during routine checks of the guzzlers, if tamarisk is found it would be removed.

Recreation:
Currently, no recreation is allowed in the CMAGR. Recreation opportunities will increase if the proposed action is implemented. Providing reliable water sources will increase the abundance of watchable wildlife such as deer, sheep, and migratory birds. These are mobile species, some of which will move onto public lands and provide bird watching, photography, and hunting opportunities.

Threatened or Endangered Species:
The installation of all eight guzzlers would directly impact about 0.15 acres of desert tortoise habitat. Construction of 22 and Doc Homs Tanks would be within the Chuckwalla DWMA which is considered Class 1 habitat for tortoises and is also designated critical habitat.
All of the remaining six sites are outside of tortoise critical habitat.

Construction of the guzzlers would result in the temporary disturbance to the sites from construction related activities: noise, dust, etc. Once the guzzlers are in place the sites would be restored to their natural condition. Further impacts to habitat would be limited to wildlife entering and leaving the guzzler locations and visits by CDFG and /or military personnel to inspect the guzzler.

Andrew *et al*. (2001) examined 13 guzzlers in this region for signs of drowned tortoises. Her study found no tortoise remains. Hoover (1995) in a similar study of 86 small game drinkers found the remains of 17 tortoises. It is impossible to determine whether the remains were washed in the guzzlers from routine filling or if tortoises fell in and became trapped. Hoover recommended installation of a roughened matt or abraded surface for tortoises to be able to have traction to escape the drinker. Although the proposed large animal drinkers are of a different design than the small game drinkers examined by Hoover, the proposed drinkers would be equipped with a roughened ramp as well as steps to allow tortoises to climb out. Because of the escape ramp and mitigation measures used for construction and maintenance this project is not likely to adversely affect desert tortoises or adversely modify critical habitat.

The no action alternative would result in no disturbance to desert tortoise habitat.

Vegetation:
Past studies have addressed foraging questions and have found that sheep (Wehausen and Hansen 1986) and deer (Marshal *et al*. 2004 and 2005a), both exist at low densities, have little impact on vegetation used as browse and forage. Marshal *et al*. (2005b) specifically looked at vegetation near water sources in the Sonoran Desert in California and failed to measure any impact to vegetation by native ungulates attracted to water sources.

Visual Resource Management:
None of the proposed sites are visible from outside of the gunnery range therefore there will be no visual impact to the public. Visual impacts would not be different between the Proposed Action Alternative and the No Action Alternative.

Wetlands/Riparian Zones:
There are no wetlands or riparian zones in the project area.

The no action alternative would have no impact on wetlands or riparian zones.

Wild Horses and Burros:
All proposed project sites are outside any designated Burro HMA. However, feral burros are already outside the HMA and in the Chocolate Mountain area. The Department prefers not to install burro exclusion fences for both practical and visual resource management reasons, however, if resources are not available to round up the burros the department will consider fencing. Only fencing of a design previously approved in the NECO plan will be installed.

The no action alternative would probably allow for the continued utilization of habitat outside of any designated burro HMA. The BLM will continue removing burros from areas outside the HMAs as resources permit under both alternatives.

Wildlife including Migratory Birds
Some temporary disturbance to wildlife would occur during installation of the guzzlers. After guzzler installation increased movement of wildlife to the immediate area would occur as animals' access the water. Species typically seen using these facilities include deer, coyote, bobcat, many types of migratory birds, Gambel's quail and others including the state-listed Gila

woodpecker. Amphibians such as red-spotted toads are often found near guzzlers. Insects, particularly honeybees, are abundant near these water sources as well. Some increase in the population of these species is possible if water was previously limiting their numbers. Some small animals and insects could become trapped and drown in the drinker, however construction of an appropriate ramp would minimize this risk. Comparing an artificial water site to a dry site, Cutler and Morrison (1998) found that rodent and reptile populations were affected little, but bird and amphibian abundance and species richness were higher at watered sites.

The drinkers would be especially beneficial to bats and migratory birds. The guzzlers would serve as a permanent water sources for these animals as well as breeding grounds and water resources for forage species (insects). These drinkers would provide excellent resources for stopover habitat for migrating birds. Bats would also benefit from the increased prey abundance and permanent water.

The no action alternative would result in a continued lack of permanent waters in this area which is now further exacerbated by the loss of access to the Coachella Canal. This in turn would provide fewer resources for wildlife and would prevent some wildlife from utilizing greater portions of the available habitat. It would also result in fewer stopovers and lower-quality foraging habitat for migratory birds and bats.

MITIGATION MEASURES

The following mitigation measures shall be applied to ensure there are no adverse impacts to Desert Tortoise. These measures were developed based on the Biological Opinion for Small Disturbances in Desert Tortoise Habitat (August 22, 1997 1-8-97-F-17) and recommendations from FWS.:

a. The project proponent shall designate a qualified biologist (QB) who would be responsible for overseeing compliance with protective stipulations for the desert tortoise and for coordination on compliance with the BLM. The QB must be on-site during all project activities. The QB shall have the authority to halt all project activities that are in violation of the stipulations. The QB shall have a copy of all stipulations when work is being conducted on the site. The QB may be a biologist with desert tortoise experience and approved by BLM.

b. All employees/volunteers of the project proponent who work on-site shall participate in a tortoise education program prior to initiation of field activities. The project proponent is responsible for ensuring that the education program is developed and presented prior to conducting activities. New employees/volunteers shall receive formal, approved training prior to working on-site. The employee education program must be received, reviewed and approved by the BLM Field Office at least 15 days prior to the presentation of the program. The program may consist of a class presented by a qualified biologist (BLM or contracted) or a video. Wallet sized cards or a one page handout with important information for workers to carry are recommended. The program shall cover the following topics at a minimum:

_ Distribution of the desert tortoise,
_ General behavior and ecology of the tortoise,
_ Sensitivity to human activities,
_ Legal protection,
_ Penalties for violations of State or Federal laws,
_ Reporting requirements, and
_ Project protective mitigation measures.

d. The area of disturbance shall be confined to the smallest practical area, considering topography, placement of facilities, location of burrows, public health and safety, and other limiting factors. Work area boundaries shall be delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying. Special habitat features, such as burrows, identified by the qualified biologist shall be avoided.

To the extent possible, previously disturbed areas within the project site shall be utilized for the stockpiling of excavated materials, storage of equipment, and location of office trailers and parking of vehicles. The qualified biologist, in consultation with the project proponent shall ensure compliance with this measure. Staging areas for this project shall be surveyed for desert tortoise and their burrows and if present, shall be moved and avoided as appropriately determined by BLM.

e. Cross-country access shall be the standard for temporary activities. To the extent possible, access to the project site shall be restricted to designated "open" routes of travel. A qualified biologist shall select and flag the access route, to avoid burrows and to minimize disturbance of vegetation. All access is to be considered temporary. After the project is completed, the temporary access routes shall be rehabilitated using ripping, raking, and other accepted techniques.

As explicitly stated in the project permit, cross-country vehicle use by employees/volunteers is prohibited during work and nonworking hours. No new permanent road, two-track or otherwise, shall be created from a main road to any of the guzzlers.

i. Desert tortoises shall be allowed to move through a project area and shall not be disturbed under any circumstances. All construction activities shall cease until the desert tortoise has moved through the area. No handling of the desert tortoise is allowed.

j. The qualified biologist shall maintain a record of all desert tortoises observed during the project monitoring. This information would be provided to the BLM/Service with the annual report from CDFG. This information shall include for each tortoise:

1. The GPS location (narrative and maps) and dates of observations;
2. General condition and health, including injuries and state of healing and whether animals voided their bladders;
3. Diagnostic markings (i.e., identification numbers or marked lateral scutes);

4. Photograph of each observed desert tortoise.

k. No later than 90 days after completion of construction or termination of activities, the QB shall prepare a report for the BLM. The report shall provide an estimate of the actual acreage disturbed by various aspects of the operation. This information shall be reported to the Service by BLM with the assigned file number #FWS-IMP-5425 and may be included with the first annual CDFG/agent report/discussion to BLM.

l. Upon locating a dead or injured tortoise, the project proponent or agent is to notify the BLM Field Office. The BLM must then notify the appropriate field office (Carlsbad) of the USFWS by telephone immediately for care. Written notification must be made within five days of the finding, both to the appropriate USFWS field office and to the USFWS Division of Law Enforcement in Torrance. The information provided must include the date and time of the finding or incident (if known), location of the carcass or injured animal, a photograph, cause of death, if known, and other pertinent information.
An injured animal shall be transported to a qualified veterinarian for treatment at the expense of the project proponent. If an injured animal recovers, the appropriate field office of FWS should be contacted for final disposition of the animal.

m. Except on county maintained roads, vehicle speeds shall not exceed 10 miles per hour through desert tortoise habitat.

n. Workers shall inspect for tortoises under a vehicle prior to moving it. If a tortoise is present, the worker shall not move the vehicle until the tortoise has moved out from under the vehicle on its own volition. Only after it has moved, may the vehicle be moved.

o. No dogs shall be allowed at a work site.

p. All trash and food items shall be promptly contained within closed, raven proof containers. These shall be removed from the project site the same day to reduce the attractiveness of the area to ravens and other tortoise predators.

q. Project proponents shall stockpile any vegetation grubbed or bladed from the project site. The access road is temporary and not graded. Following completion of the project, the access road and project site (a temporary disturbance) shall be re-contoured to approximate pre-project condition and the stockpiled vegetation randomly spread across the re-contoured area.

r. A qualified biologist with experience conducting surveys for desert tortoise shall be approved by BLM for this project.

Because of the conservation activities undertaken by the Department of Fish and Game for the desert tortoise (habitat acquisition, education, protection), no compensation payment shall be required. In lieu of fencing, the Department shall ensure that no desert tortoises are harmed through the use of a biological monitor during guzzler installation. The drinker would also be equipped with an approved ramp to allow small wildlife, including desert tortoises, to climb out.

Residual Impacts:
After mitigation, less than .35 acres of habitat would remain impacted. It would slowly recover over time. Direct impacts to the desert tortoise would be avoided and indirect impacts would be minimized by the application of provisions of the mitigation measures biological opinion.

Cumulative Impacts:
Twelve big game guzzlers have been constructed in eastern Riverside County south of Interstate 10 and north of the Imperial County as of December 2007. All were constructed before implementation of the NECO Plan. Under the terms of NECO Plan (BLM 2002) an additional 108 deer and combination sheep and deer water sources (including the eight covered by this EA were approved for installation in Eastern Riverside and Imperial Counties. This project proposal EA represents the Department's request for the construction of deer drinkers in Riverside County identified in the NECO Plan.

Cumulatively, the existing 37 guzzlers in both Riverside and Imperial Counties have directly impacted less than 1 acre of land, most of which is suitable for the desert tortoise. All of these drinkers were installed before the signing of the NECO Plan. The desert landscape has recovered from the temporary disturbance associated with their construction. If all 108 guzzlers are installed these would directly impact about 3 acres. Indirectly, these guzzlers would alter the existing distribution and abundance of plants and wildlife throughout the area in ways that are difficult to predict. Areas previously unsuitable for summer use by deer would become occupied during those periods. Improved fawn survival may occur as result of improved water access for does during lactation. This is turn could lead to a larger deer population when water is the limiting factor. Increased browse pressure could occur in areas in close proximity to the guzzlers; however, recent studies have been unable to quantify forage biomass reductions as a result of existing guzzlers (Marshal 2006). At some point free water may cease to be the limiting factor and available forage or thermal cover may prevent increases in the deer population.

Additional cumulative impacts related to guzzler installation could include changes in the insect and plant community pollinated by them. For example, European honeybees often drink from these guzzlers. These bees then pollinate plants in the surrounding area. Potentially those plants pollinated by the bees could increase in relative abundance over the years; however recent research such as that conducted by Rosenstock *et al*. (2004) dispels that notion. The potential effect of displacement of native bees by increased populations of honeybees is unknown.

Other potential effects could include changes in the abundance and distribution of ravens or burros, which are often found in close association with water. Some ravens are known to prey upon juvenile tortoises and a potential for elevation of raven populations from guzzler installation exists because ravens may be drawn to the water. Raven densities are low in this part of Riverside and Imperial Counties and the guzzlers will have minimal impact on raven and crow densities in adjacent parts of the desert because water is not recognized as one of the top factors leading to corvid distribution in the desert (Boarman 2002). A study conducted by Fauna West Wildlife Consultants (1989) found low densities of ravens in this region (approximately 2 per

100 transect miles compared to 40 per 100 transect miles in the West Mojave Desert). Most ravens in the area are found near Highway 78 and near Glamis, CA where they can feed on human refuse. The observed low density of ravens in this portion of the desert is also supported by CDFG water source photography data from eastern Riverside and Imperial Counties. Photographs collected from 1995 to 2005 show the presence of ravens in only 19 of 11,187 wildlife photos (N. Andrew, CDFG, in preparation). Neither is there evidence that raven densities have increased around artificial water sources for wildlife similar to those installed and proposed, nor that the construction of these water sources would result in greater raven numbers.

Coyotes and other predators may increase in number near guzzlers and prey on desert tortoises. Such questions about predator densities and distribution relative to water sources have been addressed and answered by researchers, such as Rosenstock *et al.* (1999 and 2004). Coyotes are the most likely predators to be found in this portion of the desert in Riverside and Imperial Counties. Rosenstock *et al.* (2004) found that radio collared coyotes were no more likely to be found at water sources than other random points in coyote habitat. This holds true for other wildlife species known to access guzzlers including birds of prey, bobcats, foxes, and ringtails. The impact of new water sources relative to predation is expected to be minimal.

The project site are outside any recognized HMA, but burros have been seen using various existing water sources including the springs, guzzlers and the Coachella Canal,. Therefore an unintentional consequence of the proposed guzzlers may be a further expansion of burros' numbers and range.

BLM will be notified of burro use within the project area. If burros are detected using any new water source(s) a burro exclusion fence could be installed by California Fish and Game. However, the Department would request the removal of burros from non-HMA lands before installing fencing. Removal is dependant on availability of staff and resources.

Cumulative impacts associated with the construction and maintenance of these water sources, will have little impact on the abundance and distribution of plants and wildlife in eastern Riverside and Imperial Counties.

This project will have no adverse cumulative impacts to cultural resources. The CMAGR is a remote area with very little resource development. It is closed to the public and it is not a multi-use area. The proposed guzzlers are small and have little impact on the landscape. This project will therefore not contribute to any cumulative impacts to cultural resources or Native American cultural landscapes.

Report Preparers:
Nancy Andrew, CDFG
Wylie Homesley, YTRC
Jan Lawson, YTRC
Jesse Irwin, BLM
Carrie Simmons, BLM
Jenny Haggar, BLM
Daniel Steward, BLM
Erin Dreyfuss, BLM

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