CLARK COUNTY
DESERT CONSERVATION PLAN

Prepared for

CLARK COUNTY
500 S. GRAND CENTRAL PKWY
LAS VEGAS, NV 89155

Prepared by

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RECON NUMBER 2114A
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CLARK COUNTY BOARD OF COMMISSIONERS
AGENDA ITEM

Issue:	Desert Tortoise	**Back-up:**
Petitioner:	Donald L. Shalmy, County Manager	**Clerk Ref.#**

Recommendation:

That the Board of County Commissioners amend the Desert Conservation Plan (DCP), which was approved by the Board in 1994, to include minor technical changes.

FISCAL IMPACT:

None.

BACKGROUND:

In 1994, the Board of County Commissioners approved the Clark County DCP, which is required by the U.S Fish and Wildlife Service under the Endangered Species Act, as amended, before the USFWS can issue a long-term Incidental Take Permit to Clark County. The DCP requires minor technical changes (see attached) before the final version is approved by the USFWS. These changes will have no significant impacts on the DCP, or its intent.

AMENDED AS RECOMMENDED

Respectfully submitted,

DONALD L. SHALMY
County Manager

/CR:md

Cleared for Agenda

1-17-95 TDM

Agenda Item # 41.

ERRATA CONTAINED IN DCP

Pg. 72: The second paragraph on this page states that the Plan Administrator will institute a Request for Proposal/competitive process for securing a contractor to operate the translocation program. This statement is incorrect. The Board of County Commissioners appointed, Implementation and Monitoring Committee (IMC) has, for some time, been discussing translocation with the National Biological Survey, and it is the IMC's hope that they will take over the translocation process in its entirety. It is anticipated that the NBS will present an acceptable plan to the I & M Committee early next month. If NBS can meet the needs of the I & M Committee, it is the intention of the I & M Committee that the money be paid to NBS and allow them to proceed without the necessity of an RFP/competitive bid process. The County District Attorney's Office has informed Clark County that they can contract with NBS without the necessity of competitive bids. The DCP will be modified to provide that Clark County negotiate with NBS and BLM with respect to translocation, and only if unsuccessful, go to the RFP/competitive bid process.

Pg. 85: Paragraph i. states that NDOT and the various other agencies will meet and reach agreement prior to January 1 1995. This date will be changed to January 1, 1996.

Pg. 89: The last sentence of the third paragraph states that money not spent for barriers during the first several years will either be reallocated to other conservation measures or be "retained and spent on barriers and fencing in later years". Because the DCP is based entirely on money spent and not some other performance criteria, the U.S. Fish and Wildlife Service has informed the IMC that the retaining of money is not acceptable. Hence, we must spend the money on other conservation matters. Language regarding the retention of money will be deleted.

Pg.95: The second and third paragraphs under Boulder City Acquisition state that Clark County will enter into a contract with the BLM or NPS for enforcement services. It appears that Clark County will be dealing with NDOW regarding this matter, and NDOW will be added to the list of possible contractors in the DCP text.

Executive Summary

A. Project Description

The Clark County Desert Conservation Plan has been prepared to:

1. Support an application for a Section 10(a) incidental take permit under the federal Endangered Species Act (ESA) for the incidental take of desert tortoises located on approximately 111,000 acres of land, which for purposes of this plan is assumed to be desert tortoise habitat on nonfederal lands in Clark County, and on approximately 2,900 acres of desert tortoise habitat associated with Nevada Department of Transportation (NDOT) activities in Clark, Lincoln, Esmeralda, Mineral, and Nye counties; and,

2. Outline a strategy that will allow Clark County as well as state and federal resource managers to address the conservation and protection of habitat necessary to preserve other plant and wildlife resources to avoid the need for listing those species.

If the Section 10(a) incidental take permit is issued, the Clark County Desert Conservation Plan will be implemented to minimize, monitor, and mitigate the impacts of any incidental take of desert tortoises for at least 30 years after permit approval.

B. Background

1) Federal Listing of Desert Tortoise

On August 4, 1989, the U.S. Fish and Wildlife Service (USFWS) emergency-listed the desert tortoise as endangered (1989) and on April 2, 1990, finally listed the tortoise as threatened (1990a), thereby bringing it under full protection of the federal ESA of 1973, as amended. This listing was based upon ongoing threats to the continued existence of the species, including loss of habitat to urban development and agriculture, potential degradation of habitat by grazing and off-highway vehicle (OHV) use, illegal collection, spread of an upper respiratory tract disease (URTD), excessive predation of juvenile tortoises by common ravens, and other contributing factors (USFWS 1990a). In Nevada,

the tortoise is "protected" under Nevada Revised Statute 501.110 and Nevada Administrative Codes 503.080 and 503.090.

2) Clark County's Short-Term HCP

From 1980 to 1990 Clark County's population increased from 463,087 to 834,907 (Clark County Department of Comprehensive Planning 1993). This explosive growth, especially in Las Vegas Valley, was a major reason for the degradation, fragmentation, and loss of tortoise habitat in the valley. With the federal listing of the tortoise in 1989, local government in the valley was challenged with ensuring protection of the tortoise under the federal ESA while allowing land development to proceed in an orderly manner. Thus, public officials from Clark County and the cities of Las Vegas, North Las Vegas, Henderson, and Boulder City decided to seek a Section 10(a) incidental take permit under the authority of the ESA for the incidental take of desert tortoise within a portion of Las Vegas Valley. To support the incidental take permit, they developed the Short-Term Habitat Conservation Plan (HCP) for the Desert Tortoise in Las Vegas Valley, Clark County, Nevada (RECON 1991).

The Short-Term HCP was approved and an incidental take permit was issued on August 24, 1991, and is currently in effect until July 31, 1994. The permit allows for the incidental take of no more than 3,710 tortoises on approximately 22,350 acres in the Las Vegas Valley.

Conservation efforts of the Short-Term HCP focuses on prime desert tortoise habitat located some distance from the population centers of the Las Vegas Valley. These areas are delineated in the Short-Term HCP as Tortoise Management Areas. (With the publication of the Draft Desert Tortoise Recovery Plan, the term Desert Wildlife Management Area [DWMA] was introduced to delineate areas of habitat to be conserved. In order to avoid confusion, unless the context otherwise dictates, this plan will use DWMA instead of Tortoise Management Area as the term to delineate lands already conserved or to be conserved under this plan.)

Conservation and management of the blocks of conserved habitat involved eight land use constraints:

1. Grazing will be eliminated by purchase of grazing privileges from willing sellers by The Nature Conservancy (TNC), who will apply for nonuse; the Bureau of Land Management (BLM) will approve nonuse, and grazing will not be permitted until a definitive study demonstrates that livestock grazing can be conducted to improve tortoise habitat and not jeopardize recovery.

2. Competitive and commercial OHV events will be prohibited except in very limited areas within the DWMA, where they may be conducted only on existing courses. Competitive events will be monitored and policed by Nevada Division of Wildlife (NDOW) and BLM and evaluated by the Implementation and Monitoring (I&M) Committee. If they are found to negatively impact tortoises, they will no longer be allowed.

3. Noncompetitive and noncommercial OHV activities will be allowed on designated roads and trails only.

4. Intensive recreation uses of any kind (excluding OHV) will be restricted to existing areas.

5. Mining claims will be reviewed for validity by BLM on an as-needed basis, and Section 7 consultations will be conducted on all mining plans of operation.

6. Landfills will be restricted to existing sites and not counted as conserved habitat.

7. No new or modified use will be permitted in the area without compliance with Council on Environmental Quality (CEQ) requirements (40 CFR 1508.7 and 1508.8) to analyze direct and indirect impacts as well as cumulative effects.

8. Any existing use which has an adverse impact on tortoises should be restricted by the land manager.

Together with the initiation of a tortoise research program and imposition of a $550-per-acre mitigation fee on projects in the permit area, these actions serve as mitigation for incidental take.

Minimization and monitoring of the impacts of take occurs through the requirement of survey for and removal of tortoises on development projects covered by the Section 10(a)(1)(B) permit.

As a result of the Short-Term HCP, the Piute-Eldorado DWMA has been established in the southern portion of Clark County. Over 400,000 acres of conserved habitat has been set aside and is being managed to assure the long-term survival and recovery of the desert tortoise.

3) Short-Term Permit Extension and Amendment

In February 1994, Clark County submitted a permit application and environmental assessment to the USFWS to extend the term of the Short-Term HCP Section 10(a)

incidental take permit one year (to July 31, 1995) and to amend the plan to allow the disturbance of an additional 8,000 acres of habitat. However, the proposed amendment would not allow the number of desert tortoises to be incidentally taken to exceed the 3710 tortoises limit established under the permit.

The applicants propose to minimize, monitor, and mitigate the impacts of this additional land disturbance during the period covered by the extension and amendment by retaining the current permit conditions and by (1) increasing the $3,125,000 trust fund established in the Short-Term HCP for income to manage and monitor conserved habitat by $1,000,000; (2) adding about 140,000 acres of conserved habitat to the Piute-Eldorado DWMA established under the short-term permit; (3) providing an additional $100,000 for research that will monitor and guide recovery efforts for the desert tortoise; and (4) adding $100,000 to the public information and education fund established under the short-term permit. The HCP and Implementation Agreement would be amended to include the added mitigation, and the present program of desert tortoise mitigation and monitoring would be continued until the permit extension expires or is superseded by a long-term permit and HCP.

C. Clark County Desert Conservation Plan

1) Permit Period

The permit term of the Section 10(a) incidental permit sought shall be 30 years.

2) Permit Area

The area covered by the Desert Conservation Plan and the permit requested Section 10(a) incidental take permit will be all nonfederal lands in Clark County, as well as a very limited number of acres in Lincoln, Nye, Mineral, and Esmeralda counties. The total number of acres within the permit area proposed to be covered by the permit is approximately 525,000 (610,000 acres subject to development less 85,000 acres in the Eldorado Valley Transfer Area conservation easement).

3) Estimated Loss of Tortoise Habitat

Over the permit period, the amount of land estimated to be developed in the permit area is 114,000 acres most, but not all, of which is tortoise habitat. This includes 111,000 in Clark County and 2,900 acres in NDOT rights-of-way and material sites in Clark, Lincoln, Nye, and Esmeralda counties.

4) Potential Impacts to Other Species of Concern

In addition to the desert tortoise, 91 other sensitive species either occur or have the potential for occurrence in Clark County. Included in this list are 13 federally endangered and 1 federally proposed endangered species; 4 federal Category 1 candidate species; 61 federal Category 2 candidate species; 1 federal Category 3A candidate species; 1 federal Category 3B candidate species; and 1 federal Category 3C candidate species. One species is protected under the federal Bald Eagle Protection Act, and 8 additional species with no federal status are protected or considered sensitive by the state of Nevada or the Northern Nevada Native Plant Society. The Clark County Desert Conservation Plan will provide funds for conservation planning and management of lands both within DWMAs and on some areas outside DWMAs to address the needs of these sensitive plant and wildlife resources.

5) Measures to Minimize and Monitor Impacts of Take

During the period of implementation of the Short-Term HCP and the preparation of this Desert Conservation Plan, the Steering Committee decided that its efforts should be guided by four principles:

1. Survival and recovery of the desert tortoise can best be assured if most of the funds collected by the Desert Conservation Plan are spent on conservation measures to preserve and protect the species in the wild and not on attempts to deal with tortoises which are displaced by development or the effects of urban life.

2. Desert tortoises within urban areas should not be collected from development sites.

3. Desert tortoises coming into the possession of the Desert Conservation Plan should in all cases be treated in a humane fashion and, if possible, and without endangering the wild population, be returned to appropriate habitat to live out their lives.

4. The desert tortoise is a surrogate for the entire desert ecosystem. Conservation efforts in Clark County should be directed to protect representative portions of the entire system. In doing so, all desert species and habitats will be better protected and perhaps lead to the avoidance of the costly and divisive results of listing additional species.

Guided by these principles, the Desert Conservation Plan proposes the following measures to minimize and monitor incidental take:

a) Pick-up Service

Clark County residents will be encouraged not to remove, collect or interfere with any desert tortoise they may encounter. If, however, a person believes that a tortoise is in harm's way and should be moved, the plan will provide a service to pick up and remove the tortoise.

b) Tortoise Transfer/Holding Facility

All tortoises collected by the pick up service will be transferred to a transfer/holding facility, which will have a design capacity to maintain approximately 250 tortoises. Animals that arrive at the facility damaged or show overt signs of URTD will be disposed of humanely. Animals will be held at the facility and made available for beneficial uses including translocation programs and studies, research, education, zoos, museums, adoption, or other approved programs.

c) Tortoise Placement Efforts/Translocation

Disposition of collected tortoises will be overseen by NDOW and the USFWS who will screen and authorize requests for tortoises for the following options: translocation programs and research, zoos, museum exhibits, educational facilities, adoption programs, or other appropriate uses.

The Clark County Desert Conservation Plan will vigorously pursue an approved translocation program with a goal of providing a location for displaced tortoises and establishing methods and protocols for future translocation projects which may eventually be required for the recovery of the species.

d) NDOT Rights-of-Way

NDOT will incorporate measures to avoid or minimize impacts to tortoises into its normal and emergency maintenance activities, including surveys and temporary fencing of construction areas, surveys and permanent fencing of material sites, moving of tortoises out of harm's way following defined procedures, worker education, and recontouring and rehabilitation of any disturbed sites.

e) Public Information and Education Program

A public information and education program will be conducted in the permit area to inform the public of the terms and conditions of the Section 10 permit, to enlist the support of the public to support the measures contained within this plan to minimize and

mitigate the effects of incidental take and to encourage the public to respect, protect, and defend the desert ecosystem.

f) Project Monitoring and Reporting Process:

Local governmental agencies and NDOT will be required to keep accurate records regarding:

1. The location of and amount of all land disturbed within the permit area.

2. All fees collected or paid.

3. The disposition of all desert tortoises collected.

The records will be maintained by the County and summarized in an annual report to the USFWS.

6) Measures to Mitigate the Impacts of Take

a) Funding Priorities of the Conservation Plan

The Clark County Desert Conservation Plan will mitigate impacts to desert tortoise and other sensitive species by providing at least $1 million (1994 dollars) per year and up to $1.325 million (1994 dollars) per year during the first ten years of the plan to fund conservation measures recommended by the Draft Desert Tortoise Recovery Plan. The Steering Committee believes that at the present time and under the current conditions, the following conservation measures are the most important measures which should be financed.

- Increased law enforcement efforts within DWMAs.

- Construction of tortoise barriers to reduce tortoise mortality along roads and highways.

- Designation, signing and closure of roads and rehabilitation of habitat within DWMAs.

- Tortoise inventory and monitoring to determine the effectiveness of conservation techniques being utilized within DWMAs.

- Conservation measures and techniques to protect the desert ecosystem and the various additional species that reside thereon.

In addition, the Desert Conservation Plan will provide mitigation to offset the effects of incidental take by the following actions:

- It will provide funds to purchase grazing privileges and other property interests from willing sellers for up to two years after the long-term permit is issued.

- It will acquire a conservation easement affecting over 85,000 acres of nonfederal land within the Piute-Eldorado DWMA to be managed to conserve and protect the desert tortoise and its habitat.

- It will maintain and defend grazing privileges within DWMAs which it acquired during the Short-Term HCP to assure that those privileges continue to be accorded nonuse status by the BLM.

- It will maintain, operate, and manage lands and water rights it has purchased located within DWMAs and acquired during the Short-Term HCP to conserve and protect the desert tortoise and its habitat.

- It will provide for the appointment of an Implementation and Monitoring Committee to assure that the terms and conditions of the Section 10(a) permit are being fulfilled and to provide a forum for comments regarding management decisions and budget requests received from the resource managers.

- It will impose a $550/acre development fee for all private lands within Clark County which are disturbed during the period of the permit.

- It will impose a $550/acre fee for NDOT activities outside DWMAs associated with road maintenance, widening, and new construction and establishment of material sites.

- It will create an endowment fund which will assure that up to $1.325 million and in no event less than $1 million per year in 1994 dollars will be available to finance conservation measures within Critical Habitat during the permit period and beyond.

- It will provide that federal land managers and resource agencies continue to fulfill obligations in the Piute-Eldorado DWMA undertaken during the Short-Term HCP.

- It will report, on an annual basis, the status of all mitigation measures to which it has committed as well as an accounting of all funds expended in pursuit thereof.

b) Implementation of Management Goals and Objectives

State and federal resource managers have the responsibility to both plan for and implement conservation measures within DWMAs; however, Clark County and the cities have a substantial interest in assuring that the Section 10(a) permit is not suspended or revoked. With that interest in mind, the state and federal resource managers have agreed to prepare biennial management plans and budgets which will set forth their management plans and proposed expenditures for conservation measures during the ensuing two year period and an evaluation of the effectiveness of conservation measures undertaken during the previous two years.

The USFWS will review the management plans and budgets and provide a report to Clark County regarding consistency of the management plans and budgets with the provisions of the ESA, the Desert Tortoise Recovery Plan, and this Desert Conservation Plan.

An Implementation and Monitoring Committee shall be formed to review and comment on final management plans and budgets submitted by resource managers. The major purpose of the committee will be to assure that the terms and conditions of the Section 10(a) incidental take permit are being fulfilled and to allow all interested groups to have notice of and input into which conservation measures are being financed by the Desert Conservation Plan.

The Clark County Manager will appoint or contract with a person to administer the Clark County Desert Conservation Plan and to chair the HCP Oversight Committee.

c) Funding of the Desert Conservation Plan

Upon issuance of the Section 10(a) incidental take permit, all of the Short-Term HCP funds, including those currently in the trust fund, will be placed in a Clark County desert conservation endowment fund which will be administered by Clark County and expended exclusively on measures to minimize and mitigate the effects of the incidental take which may be permitted. The endowment fund will begin with a principal amount of approximately $7 million and would be the recipient of all development fees which would assure the availability of funds to finance minimization and mitigation measures for the term of the permit and beyond.

The Clark County Commission will review and thereafter either approve, reject or amend the budget requests which will be submitted on a biennial basis. Expenditures from the endowment fund will be consistent with the approved budget.

Failure to approve budget requests and thereafter to fund conservation measures deemed essential for the conservation of the species will be grounds for suspension of the permit.

Chapter One
Regulatory Framework

A. Background

The desert tortoise is a long-lived reptile well adapted to surviving in the highly variable and often harsh desert environment. The desert tortoise spends much of its life in burrows, emerging to feed on plants and mate in the late winter or early spring. On April 2, 1990, the desert tortoise was listed as threatened by the USFWS (1990a), thereby bringing it under full protection of the federal ESA of 1973. This listing was based on ongoing threats to the continued existence of the species, including loss of habitat to urban development and agriculture, potential degradation of habitat by grazing and OHV use, illegal collection, spread of an URTD, excessive predation of juvenile tortoises by common ravens, and other contributing factors (USFWS 1990a). The April listing was preceded by an emergency listing of the tortoise as endangered on August 4, 1989 (USFWS 1989). In Nevada, the tortoise has been categorized as "protected" under Nevada Revised Statute 501.110 and Nevada Administrative Codes 503.080 and 503.090.

B. HCP Requirements and Guidelines

In recognition that take cannot always be avoided, Section 10(a) of the ESA includes provisions for takings that are incidental to, but not the purpose of, otherwise lawful activities. A Section 10(a) incidental take permit must be accompanied by an HCP which adheres to federal regulations and draft conservation planning guidelines prepared by USFWS.

1) Definition of "Take"

When a species is listed by USFWS, the federal ESA prohibits any "taking" of the species. As defined in the ESA, "take" means:

> to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (Section 3[19]).

Definitions of "harass" and "harm" are not included in the ESA but are provided in federal regulations.

> "Harass" means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR 17.3).

> "Harm" means an act which actually kills or injures wildlife. Such acts may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3).

While the foregoing definitions remain in the federal regulations, their validity has been called into question by a decision rendered by the United States Circuit Court for the District of Columbia (*Sweet Home Chapter of Communities for a Great Oregon, et al.* v. *Bruce Babbitt, et al.*, D.C. Circuit Number 92-5255), which could have the effect of significantly limiting what constitutes harming a listed species. The decision in this case contradicts a decision issued by the Ninth Circuit Court of Appeals in *Palila* v. *Hawaii Department of Land and Natural Resources*, 852 Fed. 2d. 1106 (9th Cir. 1988) which defined "harm" in the same fashion as set forth in 50 CFR 17.3. As of this date, the USFWS has not announced its intentions with respect to how, if at all, it intends to modify its current regulations in light of the *Sweet Home* decision.

In general, the federal laws that protect the tortoise take precedence over state and local statutes and apply equally to the activities of public agencies, private enterprise, and individuals. Violations are punishable by fines of up to $25,000 and sentences of up to six months in jail.

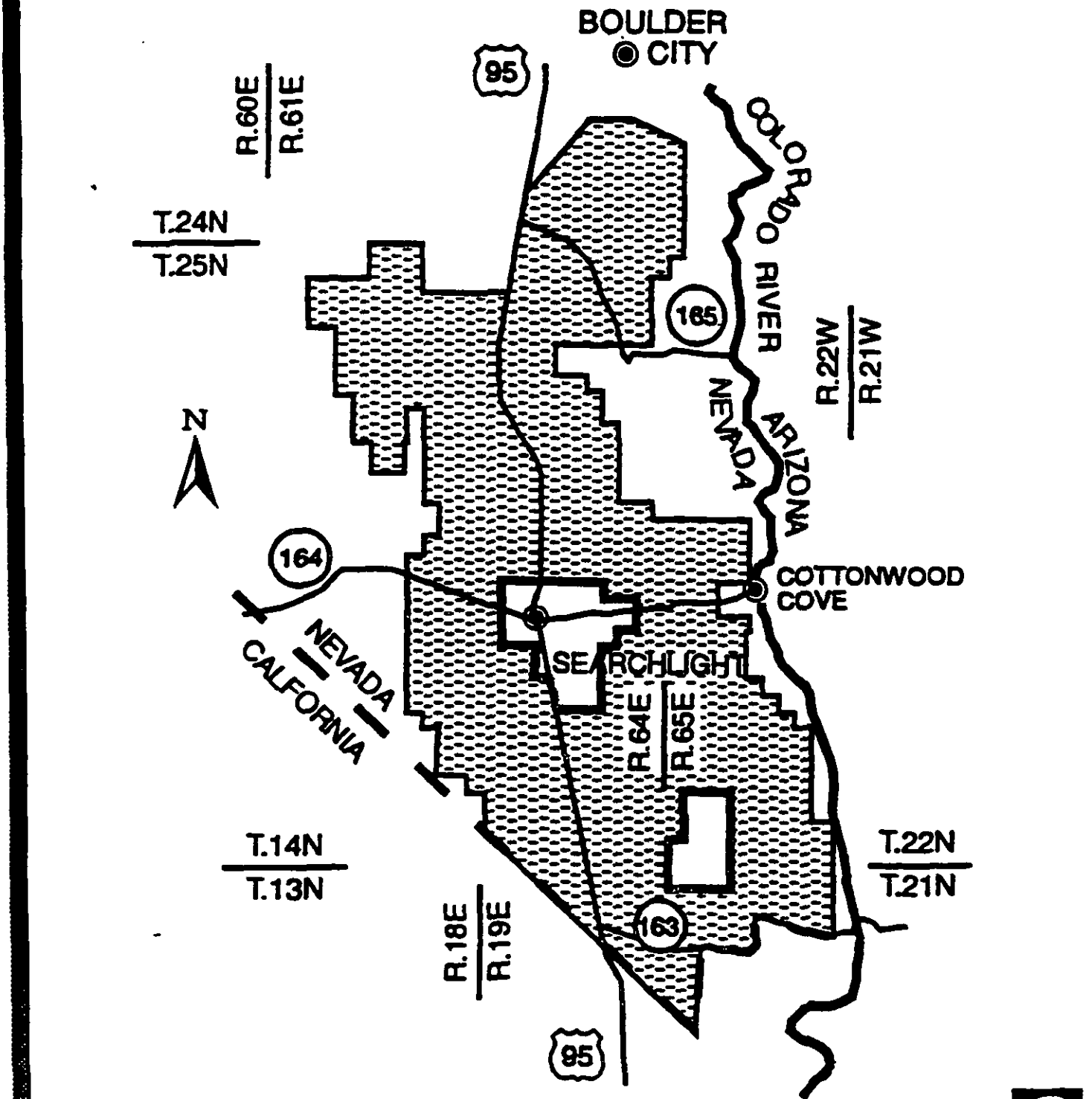
2) Critical Habitat

When a species is listed as threatened or endangered, Section 4 of the ESA requires USFWS to identify critical habitat for that species. Critical habitat is defined as (a) the specific areas within the geographical area occupied by the species at the time it is listed on which are found those physical or biological features which are essential to the conservation of the species and which may require special management considerations or protection; and (b) specific areas outside the geographical area occupied by the species at the time it is listed upon a determination by the Secretary of Interior that such areas are essential for the conservation of the species.

On August 20, 1980, the USFWS determined the Beaver Dam Slope population of the desert tortoise located in southwestern Washington County, Utah, to be threatened and also designated 35 square miles of Critical Habitat (USFWS 1980). However, when the balance of the Mojave population was listed as threatened in April of 1990, no additional Critical Habitat was designated.

In January 1993, several public environmental organizations sued the USFWS for not having proposed Critical Habitat for the Mojave population of the desert tortoise. On August 30, 1993, the USFWS announced in the *Federal Register* that they were proposing to designate Critical Habitat for the tortoise. Written comments about the proposed designation and economic analysis were received no later than October 29 and three hearings were conducted. The USFWS published a final decision on this issue on February 8, 1994.

Designation of an area as Critical Habitat does not affect the ownership of land in the area. According to the USFWS, it does not change the rights of private landowners, and does not limit private, local, or state actions unless federal funding or authorization is involved. Designation does provide a means by which the conditions an endangered or threatened species requires for survival can be protected from adverse changes or destruction resulting from federal actions. This protection is accomplished through a series of consultations pursuant to Section 7 of the ESA. Figures 1-4 show the designated Critical Habitat for Nevada and Figure 5 shows designated Critical Habitat for Clark County.



SOURCE: USFWS 1994

FIGURE

Critical Habitat for Piute-Eldorado, Nevada

RECON

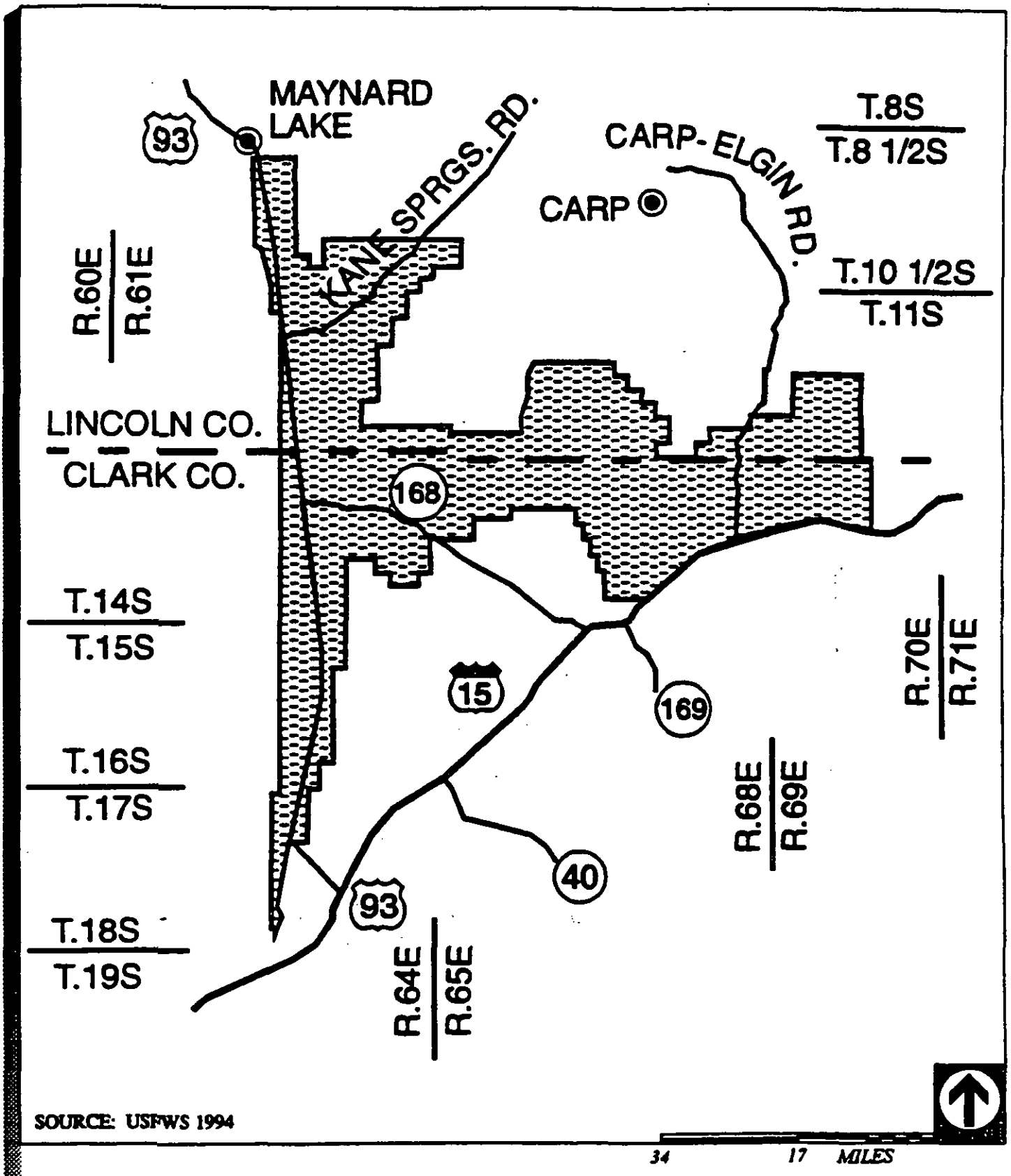
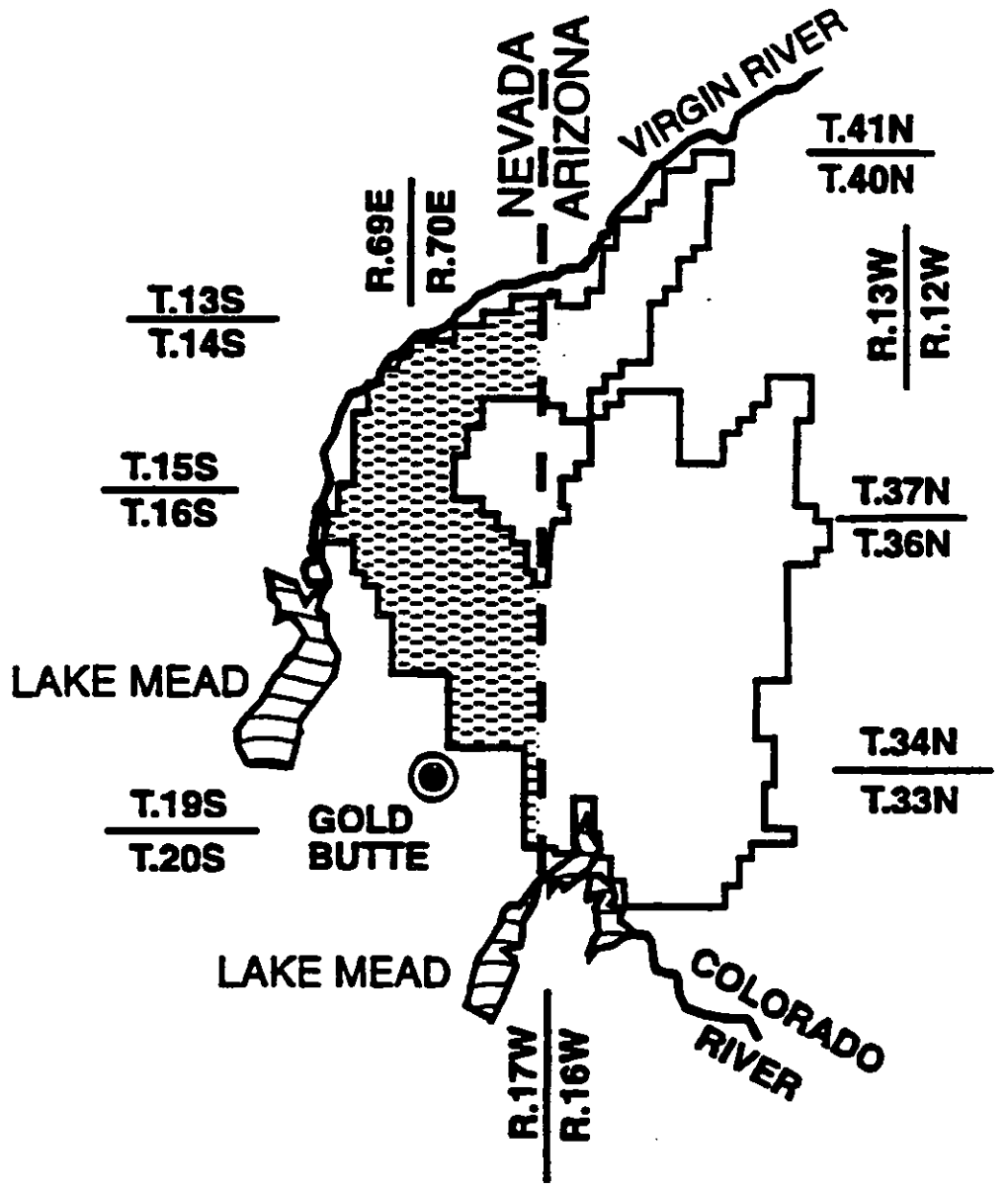


FIGURE 2

Critical Habitat for Mormon Mesa, Nevada

RECON

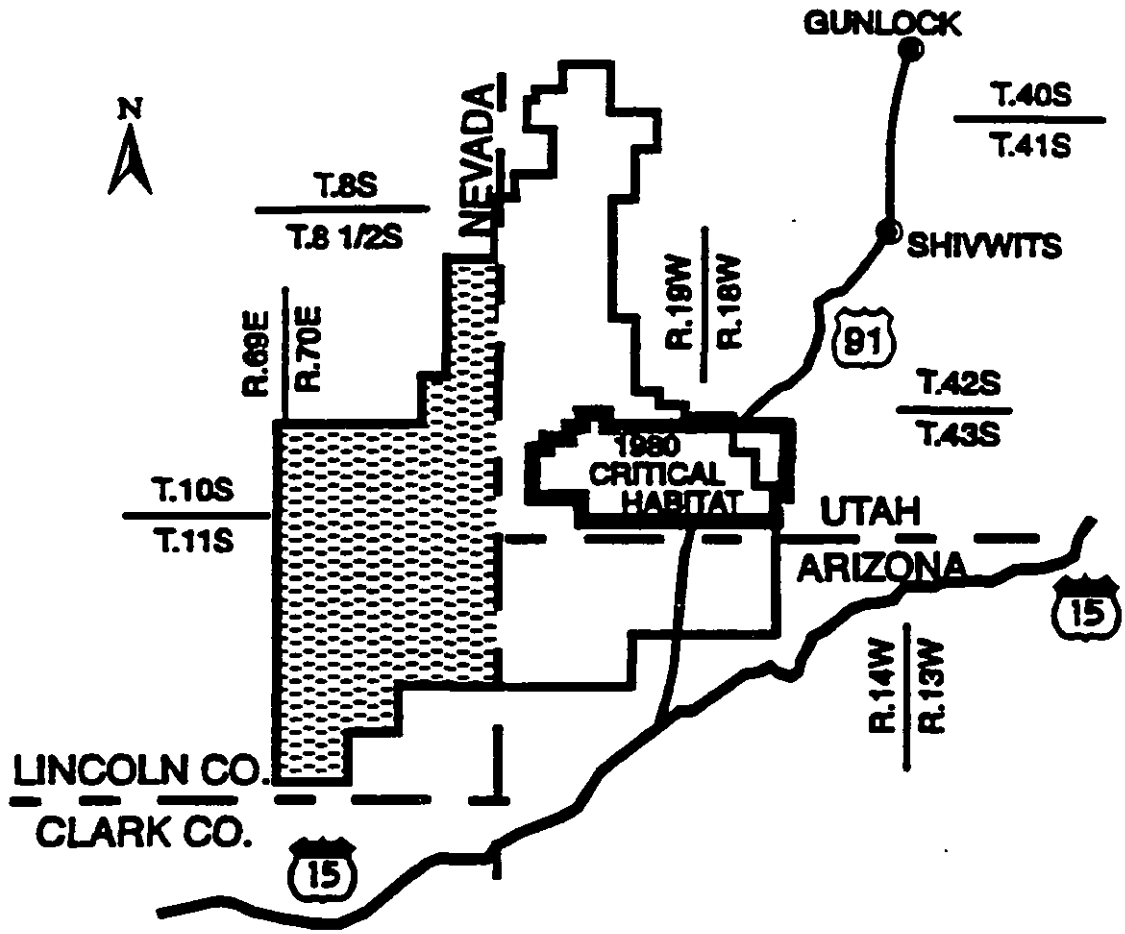


SOURCE: USFWS 1994

26 13 MILES

FIGURE

Critical Habit
for Gold Butte-Pakoon, Nevad

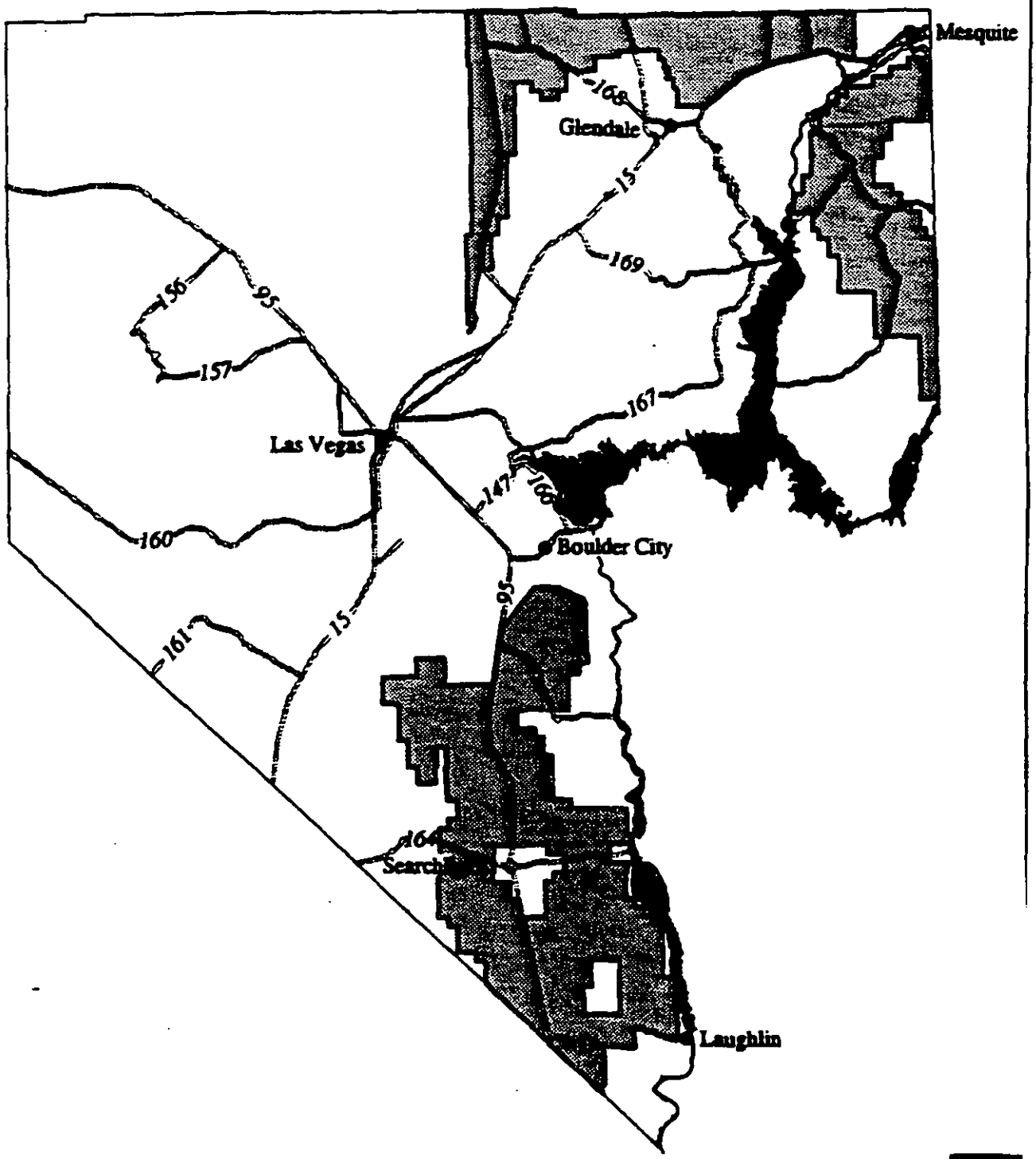


SOURCE: USFWS 1994

FIGURE 4

Critical Habitat for Beaver Dam Slope, Nevada

RECON



SOURCE: USFWS 1994

35 17.5 MILES

Critical Habitat
Lake / Reservoir
Clark County Line
Major Roads

FIGURE 5

Clark County Critical Habitat

RECON

3) Draft Desert Tortoise Recovery Plan

Section 4 of the ESA also requires that USFWS develop and implement recovery plans for the survival and recovery of a listed species, unless it is determined that such a plan will not promote conservation of the species. Required components of recovery plans include:

a. A description of such site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;

b. Objective, measurable criteria which, when met, would result in a determination, in accordance with the federal ESA, that the species be removed from the list of threatened and endangered species; and

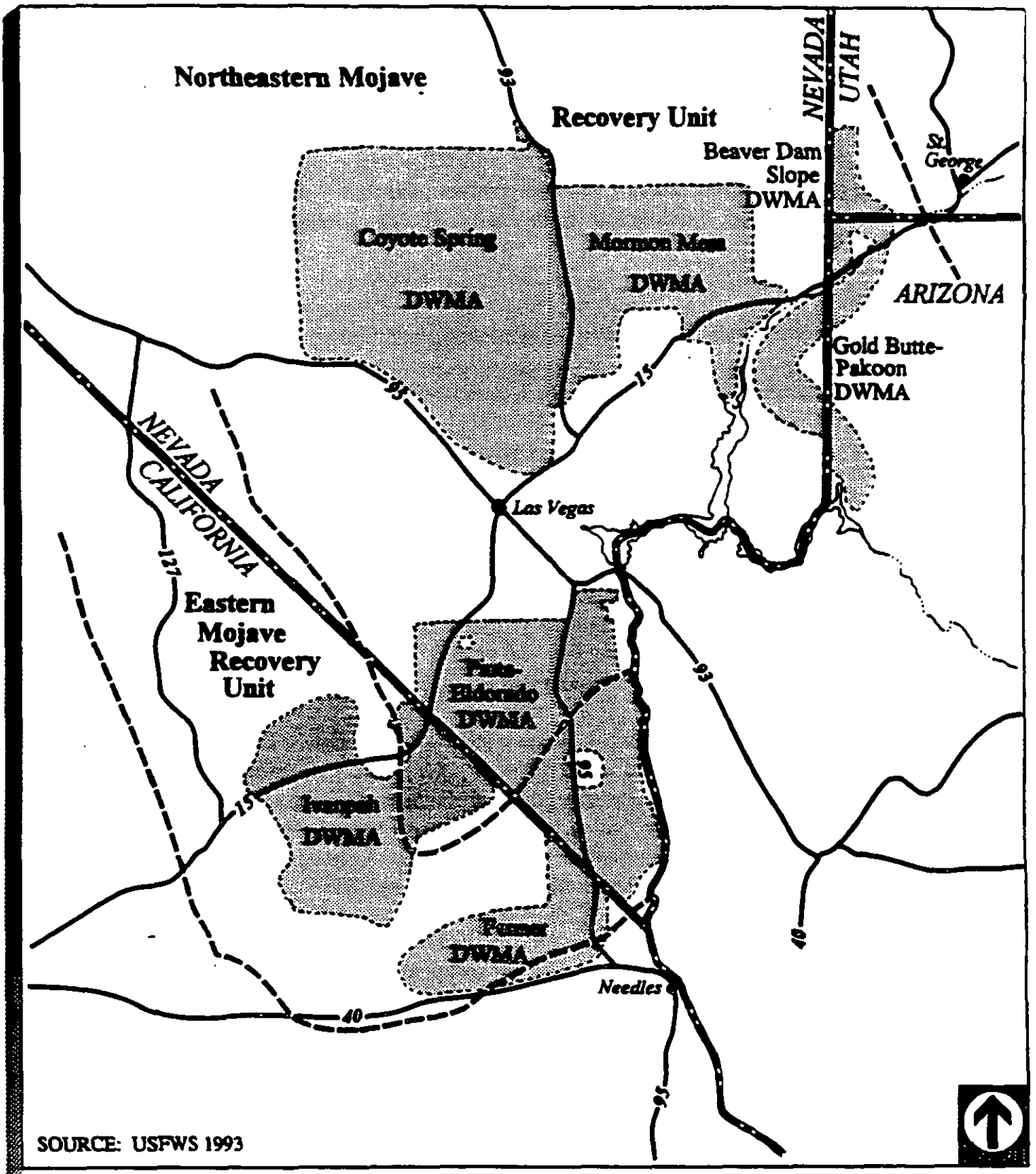
c. Estimates of the time required and the cost to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

Recovery teams are appointed to prepare the plans, and the development and implementation of the plans must be reported to the U.S. Senate Committee on Environment and Public Works every two years. Draft plans also are subject to public review and comment prior to final approval.

A desert tortoise recovery team, consisting mostly of academic scientists with a variety of expertise, was formed to develop recovery strategies and recommendations. During development of the Draft Recovery Plan, the Recovery Team solicited input from the desert tortoise Management Oversight Group, an interagency committee established to coordinate desert tortoise activities among agencies, establish funding priorities for research, and set forth rangewide management policies (USFWS 1993:1).

The Draft Recovery Plan proposes six distinct population segments or recovery units within the range of the Mojave population of the desert tortoise: northern Colorado, eastern Colorado, upper Virgin River, eastern Mojave, northeastern Mojave, and western Mojave. Clark County includes portions of the eastern Mojave and northeastern Mojave recovery units (Figure 6).

Each recovery unit includes one or more DWMAs. In the eastern Mojave are the Fenner, Ivanpah, and Piute-Eldorado DWMAs and in the northeastern Mojave recovery unit are the Beaver Dam Slope, Coyote Spring, Gold Butte-Pakoon, Piute-Eldorado, and Mormon Mesa DWMAs. The DWMAs that fall primarily within Clark County are Piute-Eldorado, Coyote Spring, Gold Butte, and Mormon Mesa (see Figure 6).



Recovery Unit Boundary

FIGURE 6

Proposed DWMAs in the Eastern and Northeastern Mojave Recovery Units

The population within a recovery unit may be considered for delisting when the following criteria are met:

(1) the population within a recovery unit must remain at target density or trend towards target density for at least 12 years.

(2) the habitat within a recovery unit must be able to sustain or be managed to sustain a long-term viable tortoise population;

(3) regulatory mechanisms or land management practices that provide long-term protection for desert tortoises must be implemented within the recovery unit;

(4) the population in the recovery unit is not likely to need protection under the ESA in the foreseeable future (USFWS 1993:v).

It is the goal of the Clark County Desert Conservation Plan to accomplish the four targets stated above such that tortoise populations in the recovery units recommended in Clark County can be delisted and not require the protection of the ESA in the foreseeable future and that outlying public lands containing desert tortoise habitat will not be encumbered by ESA regulations and restrictions.

Criteria for approval of HCPs as stated in the federal ESA and draft guidelines prepared by USFWS (1990b) for HCPs ensure that approved HCPs are consistent with recovery goals. Specifically, the ESA indicates that an approved HCP must demonstrate that the permitted acts "will not appreciably reduce the likelihood of the survival and recovery of the species in the wild." This statement is further clarified in the draft HCP guidelines which state that an HCP is not a recovery plan and that:

> - . . . the activities proposed within a conservation plan must mitigate and minimize the proposed incidental take to the maximum extent practicable, not necessarily recover the species. Therefore, even though some species do not have an approved or current recovery plan, an approved habitat conservation plan is still possible.

4) Section 7 of the Endangered Species Act

Section 7 of the ESA requires all federal agencies to consult with USFWS regarding any federal action that may affect a federally listed species. This requirement applies to all federal land management decisions and actions. Such consultations require preparation of a biological evaluation or assessment by the federal action agency.

When the USFWS prepares a biological opinion for a federal action affecting a listed species, they are required to consider whether designated Critical Habitat is affected or whether the project is consistent with the goals established by a recovery plan. The BLM will consult with the USFWS before they adopt the Stateline Resource Area Resource Management Plan (RMP) and Caliente Management Framework Plan Amendment; the National Park Service (NPS) will consult with the USFWS before they adopt a management plan for the Lake Mead National Recreation Area; the USFWS will manage the Desert National Wildlife Range consistent with recovery plan goals; and the U.S. Department of Defense must consult with the USFWS for operation of the Nellis Air Force Range. A Memorandum of Understanding that exists between the Department of Defense and USFWS that monitors actions in desert tortoise habitat on the Air Force Range is currently updated to reflect goals stated in the Draft Desert Tortoise Recovery Plan. The USFWS has agreed that the terms of Section 7 consultations conducted subsequent to this Desert Conservation Plan will generally be consistent with the minimization and mitigation requirements of this plan.

5) Section 10(a) of the Endangered Species Act

A Section 10(a) permit allows incidental take in connection with otherwise lawful activities. It can be issued for an area in which several projects will occur, for activities connected to a single project, or for takings as small as a single specimen. To qualify for the permit, the applicant must present an HCP that shows how the impacts of take on the species will be minimized, what alternatives to take were considered, how the impacts on the species will be mitigated, and how implementation of the program will be funded. These requirements apply to all permit applications, regardless of the magnitude of the proposed take, the scale of the project, or the length of the proposed permit.

a) Section 10(a) Permit Application and Approval Process

An application for a Section 10(a) incidental take permit must be submitted on an official form (Form 3-200) and be accompanied by the following attachments:

1. A complete description of the activity for which the permit is being sought.

2. The common and scientific names of the species to be covered by the permit.

3. A habitat conservation plan that specifies:

    a. The impact that will likely result from the proposed taking of the species;

    b. Steps the applicant will take to monitor, minimize, and mitigate such impacts;

c. The level and source of funding available to implement such steps;

d. Procedures that will be used to deal with unforeseen circumstances;

e. The names of the responsible party or parties;

f. Alternatives to the taking and the reasons why they were not pursued; and

g. Other measures required by USFWS as necessary or appropriate.

The application is submitted to the USFWS Director, who, after a public comment period, must issue the permit if it is found that:

1. The take will be incidental;

2. The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of the take;

3. The applicant will ensure that adequate funding for the plan will be provided;

4. The take will not appreciably reduce the likelihood of the survival and recovery of the species in the wild; and

5. Other measures required by USFWS will be met.

b) Habitat Conservation Plan Guidelines

Draft guidelines issued by USFWS in 1990 identify three critical subtasks which must be completed to determine the probable impacts which would result from the proposed incidental take. These subtasks include the following:

1. Delineation of plan boundaries, which, as stated in the guidelines, "typically should encompass all areas to be affected during the length of the permit by activities that may result in the incidental take of a listed wildlife species."

2. Collection and synthesis of existing information on the distribution, occurrence, and ecology of federally listed species and other species of concern within the plan boundaries.

3. Detailed description of the activities to be covered by the Section 10(a) permit, including activities that have already been proposed and those that are "reasonably certain" to occur.

Regarding mitigation measures in the HCP, the draft guidelines note that they can take many forms:

1. Preservation (via acquisition or conservation easement) of existing habitat.

2. Enhancement or restoration of degraded or former habitat.

3. Creation of new habitat.

4. Establishment of buffer areas around existing habitat.

5. Enactment of local ordinances or alteration of local zoning to reduce or eliminate some future impacts.

6. Habitat management plans.

7. Restrictions on vehicular access or on pesticides and herbicides.

8. Education of the local public.

Regarding funding, the guidelines indicate that the applicant must specify the funding that will be made available for the proposed mitigation measures and the funding must be sufficient over the life of the permit.

Regarding "additional measures," the guidelines note that the plan must demonstrate how monitoring and mitigation will be implemented and what steps will be taken to ensure that incidental take does not exceed what the plan specifies.

This HCP is based on current existing information on the ecology, distribution, and occurrence of the desert tortoise (Appendix A) and contains all the information required as part of a Section 10(a) permit application. An implementation agreement will be used to provide legal assurances regarding plan implementation.

C. Other Legal Requirements

In preparing this Conservation Plan, other legal requirements that directly or indirectly apply have been taken into account. These include the National Environmental Policy Act (NEPA), Federal Land Policy and Management Act (FLPMA), Nevada Revised Statutes, and local plans and ordinances.

1) National Environmental Policy Act

The National Environmental Policy Act of 1969 requires federal agencies to evaluate the effects of their proposed actions on the human environment in a written statement that addresses:

a. The environmental impact of the proposed action;

b. Any adverse environmental effects that cannot be avoided should the proposed action be implemented;

c. Alternatives to the proposed action;

d. The relationship between short-term uses of the human environment versus the maintenance and enhancement of long-term productivity; and

e. Any irreversible and irretrievable commitments of resources that would be involved if the proposed action is implemented.

Compliance with NEPA generally begins with an internal screening process. If a preliminary review determines that the proposed action does not have a significant effect on the quality of the human environment (individually or cumulatively) and, therefore, neither an environmental assessment (EA) nor an environmental impact statement (EIS) is generally required (40 CFR 1508.4), then a categorical exclusion may be determined and no further environmental documentation is required. Some actions which are covered in an existing EA or EIS prepared by a federal agency may not require analysis in a completely new environmental document. Actions which are neither categorically excluded, covered in an existing environmental document, nor normally subject to the EIS requirements need be analyzed in an EA to determine if an EIS is warranted or required.

An EA is a concise public document that briefly discusses the need for and alternatives to an action and provides sufficient evidence and analysis to support a determination of no significant impacts or a determination to prepare an EIS.

a. If the EA confirms that the impacts of the action are not significant, then a finding of no significant impact (FONSI) is issued and the NEPA review process is complete.

b. If the EA reveals a significant impact, the action cannot be approved unless it is either analyzed in an EIS or modified to avoid significant impacts.

An EIS is a detailed document that requires extensive public involvement, facilitates interagency coordination, and provides the basis for permit approvals and other legal clearances that may be required for the proposed action. There are several mandatory steps in the EIS process, including public scoping meetings, publication of a notice of intent in the *Federal Register*, preparation and public circulation of draft and final versions of the document, formal public hearings, and inclusion of public comments and the responses to those comments in the final EIS.

With respect to HCPs in general, compliance with NEPA is not a direct obligation or requirement of the applicant for the Section 10(a) permit; however, USFWS must comply with NEPA in making its decision on the application. Consequently, the appropriate environmental documentation must be prepared before a Section 10(a) permit can be issued.

For the Short-Term HCP, an EA accompanied the Section 10(a) permit application. In addition, the Short-Term HCP was prepared in a way that incorporated the public involvement goals and provided the documentation required by NEPA. For the Clark County Desert Conservation Plan, an EIS is being prepared.

2) Federal Land Policy and Management Act

The Federal Land Policy and Management Act of 1976 directs the Secretary of the Interior to develop, maintain, and, where appropriate, revise plans for the use of public lands. Furthermore, the Code of Federal Regulations (CFR) requires all resource management authorizations and actions to conform to an approved land use plan. Where a proposed action does not conform but warrants further consideration, the land use plan may be amended. At a minimum, plan amendments require an EA under NEPA and must comply with the public involvement, interagency coordination, and consistency requirements of federal planning regulations.

FLPMA also requires the Secretary to report to Congress any management decision or action that excludes one or more principal land uses for two or more years on 100,000 acres or more of public lands. If Congress adopts a concurrent resolution of nonapproval within 90 days, the Secretary is required to promptly terminate the management decision

or action. In addition, any permanent exclusion of principal uses of public lands on 100,000 acres or more must be approved in a land use plan.

3) Nevada Revised Statutes

In 1969, revision of a Nevada Revised Statute (NRS) expanded the state's requirement to classify wildlife; reptile classification became either protected or unprotected. Currently, protected species may be further classified as sensitive, threatened, or endangered. NRS also provides for creation of the Nevada Board of Wildlife Commissioners and county advisory boards. Policies and regulations necessary to the preservation, protection, management, and restoration of wildlife and habitat are established by the Nevada Board of Wildlife Commissioners through adoption of rules and regulations as set forth in the Nevada Administrative Code (NAC).

The desert tortoise has been classified as protected since 1969 (NRS 501.110) and is further classified as threatened (NAC 503.080) with protective regulations primarily afforded in NACs 503.090 and 503.093.

4) Local Ordinances and Plans

The County and each of the cities will approve this Desert Conservation Plan prior to its submittal to the USFWS. In addition, Clark County and the five cities applying for the Section 10(a) permit will adopt ordinances that assess a $550-per-acre fee on all surface disturbance in the permit area.

D. Short-Term HCP and Other Plans

Land uses within Clark County are governed by the plans and policies established by federal, state, and local agencies for the areas within their jurisdiction. Key plans and policies that are relevant to this Conservation Plan include:

- The existing Short-Term HCP for the desert tortoise in Las Vegas Valley being implemented by Clark County, Nevada.
- The BLM Clark County Management Framework Plan (MFP).
- BLM's Stateline RMP/EIS.
- BLM's habitat management plans.
- BLM's Rangewide Plan for Desert Tortoise Habitat Management on Public Lands.
- General plans and zoning ordinances developed by local governments.

1) Short-Term HCP

The Short-Term Habitat Conservation Plan for the Desert Tortoise in Las Vegas Valley, Clark County, Nevada, was approved on July 24, 1991. A Section 10(a) permit for incidental take amounting to no more than 3,710 tortoises on approximately 22,350 acres in the Las Vegas Valley is currently in effect until July 31, 1994, or until completion of a long-term HCP. Any incidental take in the Las Vegas Valley until that time will be minimized, monitored, and mitigated under the terms of that permit, the HCP, and the implementation agreement.

The Short-Term HCP focuses on initial establishment of DWMAs through the conservation and management of incrementally delineated blocks (100,000 acres) of habitat. Conservation and management of the blocks of habitat, together with other actions, serve as mitigation for incidental take within the Las Vegas Valley occurring over a three-year period. Minimization and monitoring of the impacts of take occur through requirements imposed on projects covered by the Section 10(a) permit. It is intended that habitat conserved under the short-term permit will be protected and managed in perpetuity.

2) Bureau of Land Management Land Use Plans

a) BLM's Clark County Management Framework Plan

Two existing land use plans, the Clark County MFP (BLM 1984) and the Esmeralda-Southern Nye RMP/EIS-Planning Area B (BLM 1986), provide current management direction for the Stateline Resource Area. The MFP outlines major land use decisions and guides the management of about 3.1 million acres of public lands in the county. In general, the plan classifies BLM holdings as suitable for disposal or as lands to be retained for multiple use:

1. Lands classified for disposal (such as those in the Las Vegas Valley subunit) can be transferred to states, counties, municipalities, and private interests.

2. Lands to be retained are managed by BLM for fish and wildlife development, outdoor recreation, mineral production, watershed protection, wilderness preservation, domestic livestock grazing, and preservation of public values.

b) BLM's Stateline Resource Management Plan/EIS

In May, 1992, BLM issued a draft Stateline Resource Area RMP for the management of 3.7 million acres of public lands administered by the BLM in Clark and Southern Nye counties. When completed, the Stateline RMP will replace the Clark County MFP and the Esmeralda-Southern Nye RMP. Both the Esmeralda-Southern Nye RMP/EIS-Planning Area B (1986) and the Clark County MFP required amendment or revision for several reasons: (1) a regularly scheduled five-year evaluation of the Clark County MFP indicated that the plan was not adequately providing for the rapidly changing public land use demands in Clark County; (2) neither land use plan anticipated the listing of the desert tortoise as a threatened species and did not, therefore, provide for the recovery of the desert tortoise; and (3) public land disposals and exchanges, such as Aerojet and Apex, being accomplished by legislative action had demonstrated the inadequacies of the existing land use plan.

Plan amendments normally focus on the resolution of a single issue, while a plan revision is usually developed when multiple issues need to be resolved. Rather than amend the Clark County MFP and Esmeralda-Southern Nye RMP/EIS-Planning Area B on a single-issue basis, the decision was made to prepare the Stateline Resource Area RMP/EIS, addressing the area covered by both of the existing plans. Generally, either action will require an EIS. Decisions in the Clark County MFP and Esmeralda-Southern Nye County RMP/EIS determined to constitute valid management would be carried forward into the Stateline Resource Area RMP/EIS.

Over three million acres of desert tortoise habitat occur within the Stateline Resource Area. To comply with the ESA, the BLM must consult with the USFWS on all federal actions (including the RMP/EIS) and take positive actions to aid in the recovery of all listed species. Table 1 compares the provisions of Alternatives A, B, C, D, and the Supplemental Alternative as set forth in the draft Stateline Resource Area RMP/EIS with respect to grazing, the number of acres proposed to be contained within Areas of Critical Environmental Concern (ACECs), the number of acres proposed to be disposed of by the BLM, the number of acres proposed to be withdrawn for the Desert Tortoise Conservation Center, wild horse and burro policy, and mining.

Publication of the April 1993 Draft Recovery Plan for the Desert Tortoise [see Chapter 1.B.2)c) of this Conservation Plan] and the designation of Critical Habitat for the desert tortoise [see Chapter 1.B.2)d) of this Conservation Plan] prompted the BLM to prepare a supplement to the draft Stateline RMP/EIS. The supplement outlines the boundaries and management of the proposed tortoise ACECs so that they are consistent with the recommended DWMAs of the Draft Recovery Plan and proposed Critical Habitat. The supplement to the draft Stateline RMP/EIS was published in May 1994. Approval of the final RMP/EIS is expected in early 1995.

c) Habitat Management Plans

The designation of DWMA/ACECs and the maintenance of their integrity require management actions and changes in land uses not currently provided for by the two existing land use plans. Decisions about specific range, wildlife, and watershed improvements are not made in the RMP/EIS, but rather in subsequent activity-level plans (i.e., habitat management plans, allotment management plans, etc.) designed to implement the Stateline RMP/EIS decisions. In June 1992, a Piute-Eldorado Habitat Management Plan (HMP) was prepared by the BLM with cooperation of the NPS and NDOW. However, the HMP has not yet been finalized and approved by those agencies. This BLM planning document outlines management prescriptions for high-density tortoise populations within three tortoise management areas. They include Piute Valley, Cottonwood Valley, and Eldorado Valley. The three habitat management areas of this HMP were established through the Clark County Short-Term HCP. The BLM and the NPS (on NPS lands) are responsible for identifying and implementing land use controls through the Piute-Eldorado HMP and the Stateline Resource Area RMP. The establishment of other DWMAs/ACECs in the county may require the development of one or more activity plans after the approval of the final RMP.

d) BLM's Rangewide Plan for Desert Tortoise Habitat Management on Public Lands

In November, 1988, BLM issued guidelines for the management of desert tortoise habitat on public lands. The rangewide plan establishes three categories of tortoise habitat based

TABLE 1
DIFFERENCES BETWEEN ALTERNATIVES A THROUGH SUPPLEMENT

	Alternative A	Alternative B	Alternative C (Tortoise Alternative)	Alternative D (Preferred Alternative)	Supplemental (Recovery Plan Alternative)
Grazing	Section 7	Section 7	No grazing in ACECs	Section 7	No grazing in ACECs
ACECs (# of ac.)	970,160	1,346,200	1,356,680	970,160	797,938
Disposal (# of ac.)	155,258	540,171	98,943	540,171	111,563
DTCC withdraw	634	634	11,671	634	11,671
Wild horses and burros	Ecological balance	Ecological balance	Ecological balance	Ecological balance	Zero population in ACECs
Mining	ACECs closed to mineral sales only	Cat. I: open to locat. only; Cat. II: closed sales only	ACECs closed to all minerals	ACECs open to all minerals	ACECs open to fluids and locat. only

NOTE: Does not include legislative sales (i.e., Apex and Eldorado).

on four criteria: (1) importance of the habitat to maintaining viable populations, (2) potential for resolving of conflicts, (3) tortoise density, and (4) population status. It also commits BLM to maintaining viable tortoise populations in Category I and II habitats through the implementation of specific management actions. Management actions are grouped under 14 objectives and include ensuring that off-highway vehicle activities and livestock grazing on public lands are consistent with the goals established for each category of habitat.

3) Local Land Use Plans

a) Clark County Comprehensive Plan

The Clark County Comprehensive Plan describes land uses throughout the county, provides for regional services and facilities, and governs development within unincorporated areas. The land use element of the comprehensive plan includes numerous planning documents which provide guidance for land uses within communities throughout the county. Land use guides have been prepared for the unincorporated towns/areas in the Las Vegas Valley (e.g., Lone Mountain, Sunrise Manor, Whitney, Winchester, Paradise, Enterprise, and Spring Valley) and the outlying areas of the county (e.g., Laughlin, Virgin Valley, Indian Springs, Moapa Valley, and Mt. Charleston). The County is in the process of developing three new land use guides which will cover all rural areas outside the Las Vegas Valley. These include guides for the northeast, northwest, and south portions of the county. All planning documents are generally updated every five years. Other adopted plans related to habitat conservation and management include:

Park and Open Space Plan covers the acquisition, expansion, improvement, operation, and maintenance of parks and facilities in unincorporated areas;

208 Water Quality Management Plan addresses municipal wastewater treatment, groundwater management, stormwater programs, the Las Vegas Wash, agriculture diffuse sources, and water quality standards;

Clark County Wetlands Park Master Plan contains a conceptual guide for the future development of the Clark County Wetlands Park and identifies the recreation potential for the Las Vegas Wash; and

Comprehensive Stormwater Management Plan (Phases 1 and 2) includes a valley-wide drainage inventory and recommends basic flood parameters.

b) Boulder City Comprehensive Plan

Boulder City's Comprehensive Plan includes individual plans and policies to conserve physical resources, coordinate future development, promote economic development, accommodate housing and transportation needs, and provide community services and facilities. Resource conservation and land use policies call for the protection of critical areas and maintenance of natural habitats, consistent with the public needs, health, and safety.

Boulder City has filed an application with the Secretary of the Interior to purchase the Eldorado Valley Transfer Area (EVTA) from BLM. The EVTA consists of 107,500 acres in the Eldorado Valley bordered on the east by the Eldorado Mountains and on the west by the McCullough Range. To the south lies the Highland Range, while the Black Hills and River Mountains lie to the north. If this land sale takes place, a Section 7 consultation with the USFWS will be required to ensure the survival of the tortoise. If a consultation does occur, the USFWS will assess whether or not the action would jeopardize the continued existence of the desert tortoise or destroy or adversely modify its critical habitat.

c) City of Henderson Comprehensive Plan

The City of Henderson's Comprehensive Plan establishes goals and policies regarding city planning and management, land use, public facilities and services, transportation, residential neighborhood design, and environmental quality. Environmental quality policies include denial of permits for uses not in compliance with federal, state, and local standards and cooperation with all environmental enforcement agencies.

d) City of Las Vegas General Plan

The City of Las Vegas General Plan includes long-, mid-, and short-range goals. The long-range plan sets general objectives and policies for the growth and management of the city to the year 2000. The mid-range plan defines more specific policies and programs for economic development, land use, housing, public services and facilities, transportation, conservation, environmental hazards, parks and recreation, historic preservation, and the visual environment. Mid-range conservation policies and programs call for preservation of significant environmental resources. The short-range plan establishes three types of residential planning districts (urban, suburban, and rural) and sets planning standards and dwelling unit densities for each.

e) City of Mesquite General Plan

The city of Mesquite is the county's newest incorporated city. Past development of the area was covered by the County's community plans.

f) City of North Las Vegas Master Plan

The City of North Las Vegas Master Plan states goals and policies for land use, transportation, municipal facilities, public utilities, housing, economic development, and conservation. Conservation objectives call for the preservation of the natural environment in and around the city.

In November of 1990, a Section 7 Biological Opinion (File No. 1-5-90-F-21) was issued by the USFWS on the proposed North Las Vegas land sale of approximately 7,500 acres. This opinion found that the action of the land sale would not jeopardize the existence of the desert tortoise.

Chapter Two
The Conservation Plan Area

A. Introduction

The conservation plan area includes all of Clark County and Nevada Department of Transportation rights-of-way and material sites below 5,000 feet in elevation, south of the 38th parallel in Clark, Nye, Lincoln, Mineral, and Esmeralda counties. Chapter 2 describes the setting and boundaries of Clark County, land ownership patterns and use, population and growth trends, and its biological resources.

Clark County is located in the southernmost tip of Nevada, as shown in Figure 7. It is bordered on the north by Lincoln County, Nevada; on the east by Mojave County, Arizona; on the southwest by San Bernardino and Inyo counties, California; and on the west by Nye County, Nevada. It covers approximately 7,880 square miles, or about seven percent of the state's total area. It is Nevada's most populated county, with an estimated 1993 population of 919,388, or about 67 percent of the state total (Clark County Department of Comprehensive Planning 1993). The general location of NDOT rights-of-way included in this plan is shown in Figure 8.

The majority of Clark County's population (96 percent) is concentrated in Las Vegas Valley, as is the region's urban development. The Las Vegas Valley is variously defined depending on whether urbanization or natural features are used as boundaries (e.g., the Las Vegas Valley hydrographic unit plus Boulder City covers about 1,571 square miles, or about 20 percent of Clark County). Outside the valley, communities are referred to as "rural."

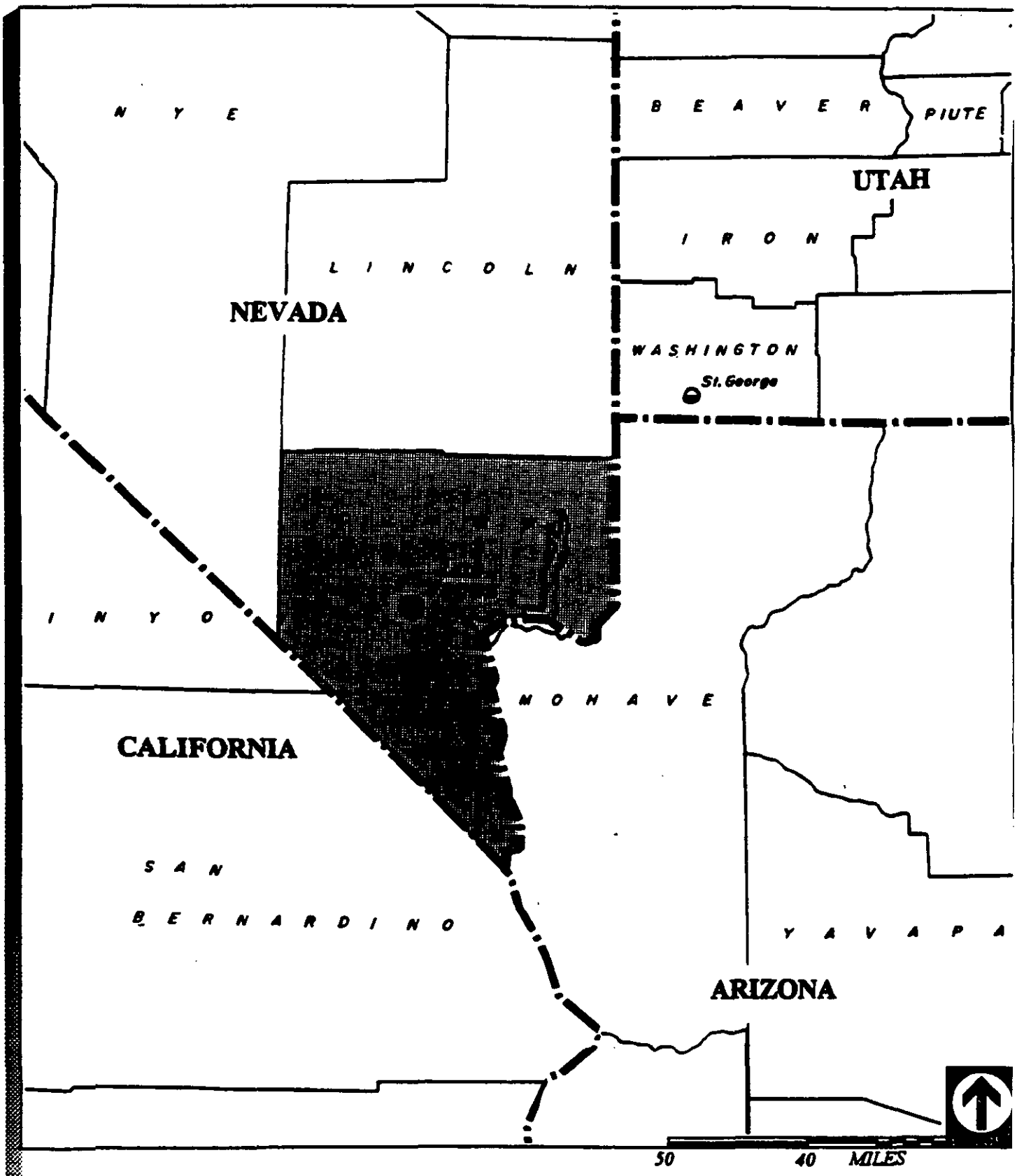
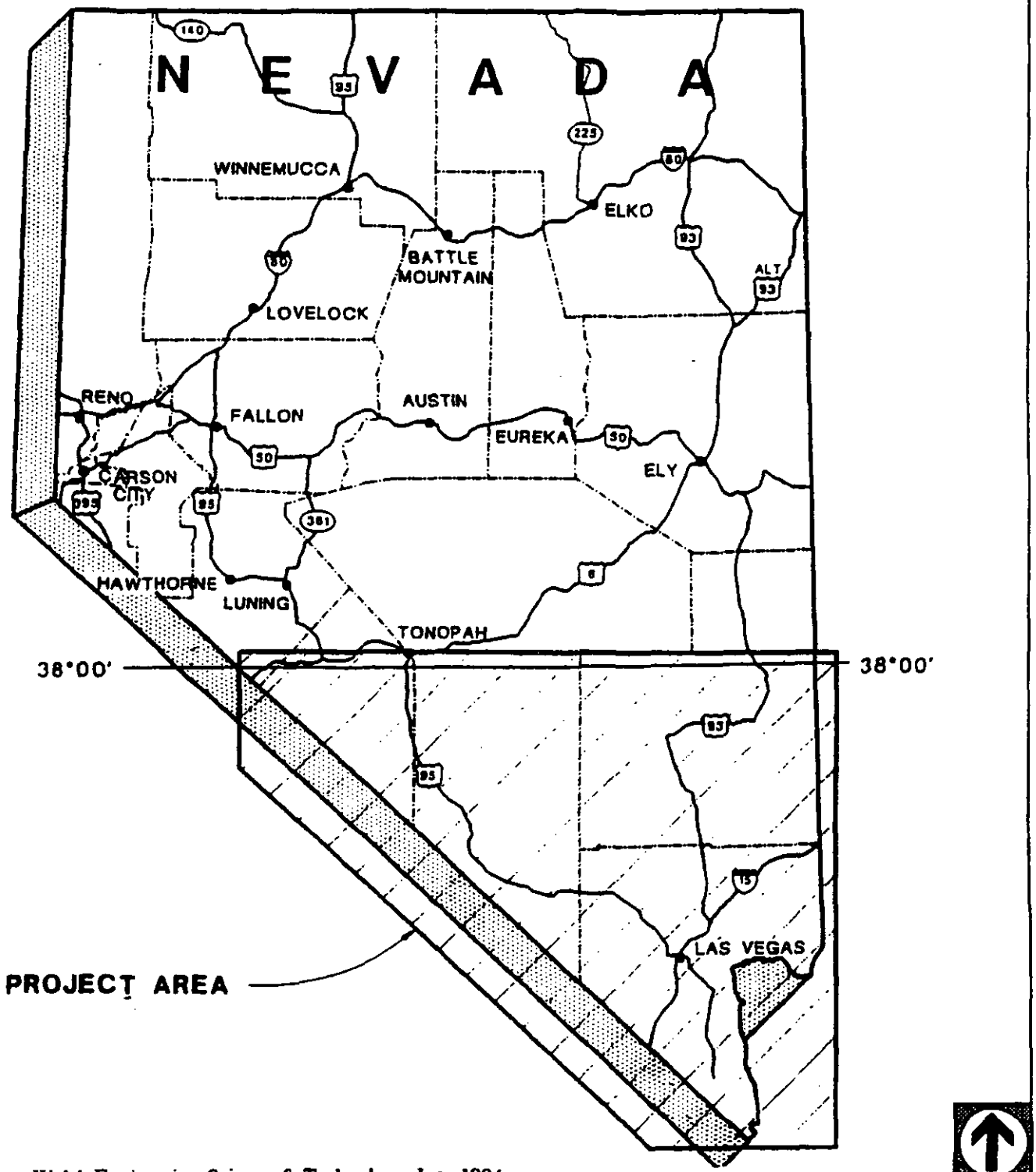


FIGURE 7

Clark County in Regional Perspective



Source: Welsh Engineering Science & Technology, Inc. 1994

FIGURE 8

General Location of NDOT Rights-of-Way and Materials Sites

B. Land Ownership and Use

Land uses in Clark County have been dictated largely by patterns of land ownership and four decades of rapid population growth. Key issues to be addressed in this Conservation Plan include existing uses and activities on lands owned or managed by public agencies as well as proposed land uses within Clark County.

1) Land Ownership

About 92 percent of the land in Clark County is owned and managed by eight federal agencies, five of which are agencies within the Department of the Interior. The eight agencies are:

a. BLM, which administers about 3.1 million acres (including the Red Rock Canyon National Conservation Area), or about 59 percent of the land in the county;

b. USFWS, which manages 506,363 acres (about 10 percent of the county's area), mainly in the Desert National Wildlife Range, and jointly manages portions of the Nellis Bombing Range and Desert National Wildlife Range in conjunction with the Department of Defense;

c. NPS, which administers the Lake Mead National Recreation Area, nearly 500,000 acres of which are in Nevada;

d. U.S. Department of Defense, which manages about 7 percent of the county or about 378,111 acres, including Nellis Air Force Base;

e. U.S. Bureau of Indian Affairs, a part of the Department of the Interior, which is authorized to act as trustee for the Moapa Indian Reservation (about 72,000 acres), Mojave Indian Reservation (about 3,840 acres), and Piute Indian Reservation (3,840 acres);

f. U.S. Forest Service, an agency of the Department of Agriculture, which manages approximately 272,885 acres in the Spring Mountain Range;

g. U.S. Bureau of Reclamation, which maintains 50,690 acres (including Hoover Dam and Lake Mead) and whose primary mission is water supply and power; and

h. Federal Aviation Administration, which manages 140 acres in connection with its responsibilities for airport development and regulation.

Lands held by the State of Nevada, local government, and private parties comprise only about eight percent of the county's area, or about 412,000 acres. Major state holdings include Valley of Fire, Floyd Lamb, and Spring Mountain Ranch state parks. Local government holdings consist primarily of parks, office complexes, and storage and maintenance facilities. Sixty percent of all state, local government, and private holdings are located in Las Vegas Valley.

Within the urban core of Las Vegas Valley, ownership patterns are more complex than in outlying areas, but federal ownership and management still predominates (Table 2). Combined, the holdings of four federal agencies account for 55 percent of the land.

a. BLM, the valley's largest landholder, manages 277,657 acres (including Red Rock Canyon National Conservation Area) or about 50 percent of the area.

b. The Department of Defense manages 13,960 acres at Nellis Air Force Base and the Sheep Mountain Gunnery Range.

c. The Bureau of Reclamation manages 9,120 acres on the east end of the valley.

d. NPS manages 5,120 acres in the east end of Las Vegas Wash.

BLM's Las Vegas Valley Subunit contains a total of 398,592 acres, including the majority of the county's urbanized land. Land ownership patterns within the subunit vary from large blocks of federal land on the periphery to a checkerboard of interspersed federal and private holdings around existing urban development.

2) Existing and Proposed Land Uses

Existing and proposed land uses of primary concern with respect to the tortoise include agriculture, flood control, livestock grazing, mineral extraction, off-road vehicle activities, parks and recreation, residential and commercial development, solid waste facilities, transportation, utilities, and water and sewage facilities.

a) Agriculture

Both farming and ranching occur within Clark County (see Livestock Grazing below). Irrigated agriculture occurs on a small scale within the Las Vegas Valley and in the Moapa Valley and Mesquite area.

TABLE 2
LAND OWNERSHIP IN CLARK COUNTY AND LAS VEGAS VALLEY

Owner	Clark County		Las Vegas Valley	
	Acres	Percent	Acres	Percent
Bureau of Land Management	3,097,131	59	277,657	50
U.S. Fish & Wildlife Service	506,363	10	0	0
National Park Service	498,814	10	5,120	1
U.S. Department of Defense*	378,111	7	13,960	2
Bureau of Indian Affairs	75,112	1	10	0
U.S. Forest Service	272,885	5	0	0
Bureau of Reclamation	50,690	0	9,120	2
Bureau of Aeronautics	140	0	†	0
Non-federal‡	412,048	8	247,103	45
TOTAL	5,291,294	100	552,970	100

NOTE: Estimates for Las Vegas Valley are taken from the Clark County Comprehensive Plan for an area slightly smaller than the boundaries used for the valley in this HCP.

*Includes land jointly managed with USFWS.
†Bureau of Aeronautics lands not included in analysis of valley ownership.
‡Includes lands owned by state and local governments and private parties.

b) Flood Control

The Clark County Regional Flood Control District is developing a comprehensive, integrated flood control system for Las Vegas Valley and nearby areas. This system will include 21 detention basins, 1 debris basin, and over 100 miles of channels, pipelines, dikes, and levees. Many of the planned facilities are located on BLM land and, because of local flooding problems, are deemed essential to the protection of existing as well as new development.

c) Livestock Grazing

The draft Stateline Resource Area RMP, as set forth in each of the alternatives it will consider, provides various cattle grazing prescriptions for areas within the county, as set forth on Table 1. Grazing currently is authorized on approximately 2.2 million acres of federal lands managed by the BLM, NPS, and Forest Service.

Livestock grazing on allotments which contain desert tortoise habitat, outside ACECs, will be constrained by Section 7 stipulations. Stipulations will be developed as needed for each allotment. Intensive monitoring and frequent evaluations will be conducted to determine the need for change, if any, in management of the allotment.

d) Wild Horses and Burros

Grazing by wild horses and burros occurs in many areas within the county, including land managed by the BLM, NPS, and Forest Service. The draft Stateline Resource Area RMP, as set forth in each of the alternatives it will consider, provides various wild horse and burro prescriptions as set forth on Table 1.

e) Mineral Extraction

Mineral resources in Clark County have been extracted since 1855. Subsequently, gold and silver mines were developed; today, however, the extraction of gypsum, limestone, sand, and gravel predominates. Mineral extraction on public lands occurs under patented claims, unpatented leases, permits, and sales.

When individuals holding valid mining claims propose to disturb any land not previously disturbed, the claimant must file a mining notice or a mining plan of operation with the BLM. If the plan of operation is liable to affect a federally listed species, a Section 7 consultation is also required. Within Piute Valley, Eldorado Valley, or Cottonwood Cove, where road closures have or shortly will restrict access to designated roads and trails, an individual proposing any mining activity not already approved must submit a mining plan of operation.

f) OHV Activities

In recent years, as many as 50 competitive OHV events have been held in Clark County annually, with over 5,000 participants and over 100,000 spectators. In addition to traditional OHV events, several other events occur in northern Clark County, crossing up into southern Lincoln County. Other event areas include the California Wash and Nellis Dunes.

Since the listing of the tortoise, OHV events in Clark County have been constrained by the requirement to perform Section 7 consultations for events on federal lands within tortoise habitat. Under the Short-Term HCP, the BLM has eliminated all competitive and commercial OHV use within the Piute-Eldorado DWMA except for the northern half of Eldorado Valley as prescribed in the Short-Term HCP. Nine events (four four-wheeled vehicle and five motorcycle/all-terrain vehicle) have been allowed in this area on an annual basis.

g) Parks and Recreation

The Clark County Comprehensive Plan differentiates between regional and urban parks and recreation facilities.

Regional sites are those composed primarily of federal and state agency lands and serve the dual function of protecting resources and providing recreation opportunities. Such sites include Lake Mead National Recreation Area, Red Rock Canyon National Conservation Area, Spring Mountain National Recreation Area, Valley of Fire State Park, Floyd Lamb State Park, Toiyabe National Forest, Desert National Wildlife Range, Spring Mountain Ranch State Park, and Overton Wildlife Management Area.

Urban sites are those within the jurisdiction of the local governments and allow for playing fields, tennis courts, swimming pools, stables, golf courses, and arenas.

h) Residential/Commercial/Industrial Development

Historically, the urbanized core of Clark County has centered around the axis formed by Boulder Highway, Interstate 15 (I-15), and the Union Pacific Railroad. By the 1970s, however, urbanization had spread in a somewhat loosely knit, leapfrog fashion to outlying areas. This pattern continued through the 1980s and is apparent in the land use analysis prepared for Clark County in 1989 by Planning Information Corporation. The analysis covers 235,391 acres in Las Vegas Valley, including the cities of Las Vegas, Henderson, and North Las Vegas and the communities of East Las Vegas, Paradise, Sunrise Manor, Winchester, Spring Valley, Enterprise, and Lone Mountain. It indicates that urban development within the unincorporated areas covers 42,298 acres, compared with the 33,512 acres of urban development in the three cities.

i) Solid Waste

As a result of the new Environmental Protection Agency regulations for landfills (Subtitle D, October 9, 1991), Clark County has closed all but two landfill sites in the county, Apex and Laughlin. Because compliance with the new ruling will significantly increase costs presently incurred from owning and operating a landfill, existing landfills are being closed and replaced by transfer stations. A majority of the solid waste in the county will be sent to the Apex site. Boulder City owns its own landfill.

j) Transportation

Major transportation facilities in Clark County include Interstate 15; Highways 93, 95, and 466; State Routes 160, 163, 164, 168, and 169; McCarran International Airport; and the Union Pacific Railroad. In general, road construction throughout Las Vegas Valley has accelerated over the past 10 years in response to urban growth. Highway 95 and Interstate 15 were expanded over the period, using mostly public lands and, as with other local transportation projects, sand and gravel from local operations. Planned improvements include a beltway around Las Vegas from Interstate 15 to Interstate 515; eventual widening of Route 160 between Las Vegas and Pahrump; a 55.5-acre expansion of McCarran Airport; a proposed magnetic levitation (maglev) train within the Las Vegas Valley; and a proposed high-speed train from California to Nevada.

In addition, NDOT has the responsibility for maintaining approximately 1,000 miles of highway through desert tortoise habitat and for necessary improvements to these existing roads to meet the demands of increased traffic volumes in a manner consistent with public safety standards.

k) Utilities

Numerous major utility rights-of-way transect Clark County from north to south. None of these rights-of-way are within a designated corridor. However, the draft Stateline Resource Area RMP/EIS proposes several utility corridors for rights-of-way on public lands managed by BLM. BLM will encourage future utility rights-of-way on public land to be located within those corridors whenever feasible.

l) Water and Sewage

Water supplies in Clark County include the Colorado River, groundwater in Las Vegas Valley, and wastewater reuse. Water from the Colorado River is highly regulated, and the net depletion of the mainstream for all of Nevada is limited to 300,000 acre-feet per year. The Las Vegas Valley relies on the Southern Nevada Water System and groundwater from wells; current forecasts indicate that at the current rates of use, existing supplies will be able to meet local needs until the year 2013. Sewage and wastewater treatment needs are currently handled at facilities managed by the County and

individual cities. Currently, three of the wastewater treatment plants in the Las Vegas Valley are being expanded. Clark County also is planning a central activated sludge treatment plant to process sewage from the unincorporated area.

C. Growth Trends and Forecast

Over the past decade, Clark County's population has increased from 535,108 to 919,388 (1983-93 estimates). By 2000, it is expected to grow to 1,081,145; by 2010 to 1,284,337; and by 2020 to 1,450,409. This represents more than a tripling of the population in 40 years (Clark County Department of Comprehensive Planning 1993).

During the 1980s, county-wide employment increased by about 60 percent, rising from a total of 216,700 jobs in 1980 to about 376,000 in 1990 (*Las Vegas Review-Journal* et al. 1992). Employment reached 408,900 by 1992. By 2000, the number of jobs is expected to exceed 525,000.

Housing estimates indicate that more than 137,000 residential units have been added since 1980, with two-thirds of the growth occurring in the past five years. To accommodate the expected population growth over the next 10 years, another 52,000 units will be required. Based on historical trends, nearly one-half of the new units are likely to be single-family homes.

On the subregional level, population forecasts indicate that Las Vegas Valley will continue to contain more than 90 percent of the county population well into the next century. Likewise, the unincorporated area is expected to maintain slightly less than a 50 percent share of the valley's population for the next 40 years.

- Over the next 10 years, the valley as a whole is expected to gain over 215,000 residents; of that increase, about 43 percent is expected to occur in the valley's unincorporated area.

- New construction is likely to occur throughout the valley, with major increases expected in the existing master planned community, Summerlin. Other master planned communities under construction or expected to begin construction soon are Eldorado, Lake Las Vegas, MacDonald Ranch, Mountain Spa, and Peccole Ranch.

- Between 1979 and 1986, the amount of developed land in the valley increased annually by about seven percent. That trend is expected to continue.

Growth trends in the rural areas of the county have been consistent with those in the Las Vegas Valley. Nevertheless, rural populations will continue to represent less than 10 percent of the county's population. Mesquite and Laughlin will lead rural communities in population growth in the future.

D. Ecological Characteristics

The ecological characteristics of southern Nevada vary with the terrain and past development patterns. In general, the area is marked by a highly diversified natural environment and a variety of biotic communities. The topographic, hydrologic, climatic, habitat, and wildlife characteristics of adjacent areas encompassing NDOT rights-of-way within Nye, Lincoln, and Esmeralda counties are similar to those in Clark County.

1) Topography

Elevations within Clark County range from 450 feet above mean sea level along the Colorado River to 11,918 feet at Charleston Peak. Much of the county has features that are characteristic of the Great Basin, mountain ranges that extend in a north-south direction and erode laterally to long, narrow desert valleys. The mountain ranges are generally steep and composed primarily of bedrock. Wide alluvial fans or aprons extend from the base of the mountains and level out to basin lowlands. The basin lowlands have been continually filling since the mountains were originally formed and have a surface generally composed of fine sand, silt, and clay.

The Las Vegas Valley extends in a northwest-southeast direction with the Spring Mountains to the west; the Pintwater, Desert, Sheep, and Las Vegas mountains to the north; Frenchman Mountain to the east; and the Bird Spring and McCullough mountain ranges to the south. The valley drains toward the south and then easterly through Las Vegas Wash to Lake Mead and the Colorado River. Valley elevations range from 4,500 feet at the upper boundaries of the alluvial fan to 1,800 feet in the basin lowland.

2) Hydrology

Most of Clark County is within the Colorado River Basin but a portion falls within the central hydrographic region. The Las Vegas Valley Basin is the major watershed and encompasses the urbanized portions of the valley.

Subsurface hydrology in the valley is characterized by laterally moving groundwater and artesian aquifers. Recharge in Las Vegas Valley results from precipitation in the Spring Mountains and Sheep Range, urban irrigation, treatment plant effluent, and some upward flow from deep artesian aquifers.

Surface hydrology is marked by complex flow patterns in the alluvial fans of the valley, with areas of concentrated but frequently shifting flows. The dynamic drainage pattern, topography, and soils of the alluvial fan generally are more conducive to sheeting runoff

than to channelized flow. Consequently, pronounced gullies and ravines rarely develop, and flash floods are a recurrent problem.

Las Vegas Wash is the only perennial stream in the valley and one of few in the entire county. The other primary surface waters include Lake Las Vegas, Virgin River, Muddy River, Muddy Springs, Colorado River, and Lake Mead.

3) Climate

Air masses moving across southern Nevada are usually low in moisture. This arid condition is characterized by low precipitation, low humidity, and cloudless skies.

Summer climate is marked by hot days and mild nights, with an average daily temperature of nearly 90 degrees Fahrenheit. Winter temperatures drop below freezing about 12 days per year, with average daily temperatures of 46 degrees Fahrenheit during the coldest period. Spring and autumn are generally moderate, with average daily temperatures of about 80 degrees Fahrenheit.

The growing season (or frost-free period) varies but averages 304 days. Generally, the first killing frost occurs late in November, and the last occurs early in March. Mean annual precipitation is 5.4 inches, occurring primarily during the summer and winter months. The number of days with measurable precipitation averages 12 per year.

Within Las Vegas Valley, average daily temperatures range from 75 to 104 degrees Fahrenheit in summer and from 33 to 56 degrees Fahrenheit in winter. Due to the rain shadow effect of the Sierra Nevada Range and Spring Mountains to the west, moisture associated with storms originating in the Pacific Ocean rarely reach the valley. Humidity is normally low, averaging 30 percent, but moist tropical air from the southwest invades the area from mid to late summer. Thunderstorms and flash flooding frequently occur during this period. Inversions or periods of stagnant air masses occur during winter months and prevail for several days to a week.

4) Habitats

Clark County contains a diversity of habitat types, including creosote bush scrub, blackbrush scrub, mountain shrub, chenopod scrub and alkali sink, riparian, pinyon-juniper woodland, fir-pine forest, bristlecone pine forest, pseudo-alpine, desert springs and marshes, lakes, and rock outcrops. Several of these habitat types occur in the Las Vegas Valley, including creosote bush scrub, chenopod scrub, riparian, and desert springs and marshes. The lower Las Vegas Wash is considered to be a unique wetland habitat in an otherwise arid environment.

Creosote bush scrub occurs at elevations below 4,200 feet in flat to sloping terrain. Shrubs which dominate this community include creosote bush (*Larrea tridentata*) and bursage (*Ambrosia dumosa*), except on saline soils where saltbush (*Atriplex* spp.) replaces bursage as the co-dominant. Vertical structural diversity is provided by the occasional to common presence of Joshua tree and Mojave yucca (*Yucca brevifolia* and *Y. schidigera,* respectively). The herbaceous understory of this plant community is dominated by low annual grasses and forbs. Vegetative ground cover is sparse, ranging from 1 to 5 percent, with canopy cover ranging from 5 to 18 percent. Where windblown sand deposits occur, the density and diversity of the herbaceous plant cover is increased.

The blackbrush community occurs largely at elevations between 4,200 and 6,000 feet where there is a near-surface hardpan. It is ecotonal between creosote bush scrub and the higher elevational big sagebrush scrub or pinyon-juniper woodland communities. Blackbrush scrub is dominated by a moderately dense cover of blackbrush (*Coleogyne ramosissima*); however, scattered Joshua trees can be common. Herbaceous grasses and forbs are similar to those found in the creosote bush scrub community.

The mountain shrub community is a narrow, transitional zone which occurs between creosote bush and blackbrush scrub communities. Except for the presence of yucca, it is dominated by a diverse, low shrub and perennial grass community that includes menodora (*Menodora spinescens*), goldenbush (*Haplopappus* spp.), hopsage (*Grayia spinosa*), three-awn (*Aristida* spp.), needlegrass (*Stipa* spp.), red brome (*Bromus rubens*), fluff-grass (*Erioneuron pulchellum*), and gramma grass (*Bouteloua* spp.).

Chenopod scrub and alkali sink communities are found on poorly drained, saline soils in basins and valleys. Dominant shrubs include shad-scale (*Atriplex confertifolia*), desert holly (*A. hymenelytra*), four-winged saltbush (*A. canescens*), and Torrey saltbush (*A. torreyi*). Along the edges of playas, salt-tolerant herbaceous species such as sea-blite (*Suaeda* spp.) and iodinebush (*Allenrolfea occidentalis*) are abundant. Playas are generally devoid of plant life.

The desert riparian community is found along washes where vegetation is fairly dense along wash edges and islands. Common species include bladder sage (*Salazaria mexicana*), cheesebush (*Hymenoclea salsola*), and rabbitbrush (*Chrysothamnus nauseosus*). Tree species include desert willow (*Chilopsis linearis*) and catclaw acacia (*Acacia greggii*). In the largest washes, where subsurface water is present, scattered cottonwoods (*Populus fremontii*) are present.

The streamside riparian woodland community is found along the Colorado River and its tributaries, the Moapa and Virgin rivers, and the permanent water flow areas of the Meadow Valley and Las Vegas washes. Trees typically found along the river banks include willow (*Salix* spp.), cottonwood, and salt-cedar (*Tamarix gallica*). Dense

thickets are often formed by shrub species such as arrowweed (*Pluchea sericea*), mule fat (*Baccharis glutinosa*), willow, and salt-cedar. Marsh areas consist of sedges (*Carex* spp.), rushes (*Juncus* spp.), cattails (*Typha* spp.), and various grasses. Mesquite bosque is a subset of this community which is dominated by dense thickets of mesquite (*Prosopis juliflora*), which grows in sandy, well-drained soils where subsurface moisture is present.

The desert spring and marsh community is widely scattered throughout Clark County. Commonly, several localized springs form an associated group in larger valleys and small marshes form on the periphery. Aquatic species, including species of *Chara, Najas, Potomogeton,* and *Ruppia* are often found in these springs. Marsh species include sedge (*Carex* spp. and *Scirpus* spp.), rush, and narrow-leaved cattail (*Typha angustifolia*). Trees which grow near these spring/marsh habitat include willow, cottonwood, salt-cedar, and mesquite.

The pinyon-juniper woodland community generally occurs at elevations between 6,000 and 7,300 feet in the Spring, Sheep, McCullough, Newberrys, and Virgin mountain ranges. This community is dominated by juniper (*Juniperus osteosperma*) and pinyon pine (*Pinus monophylla*). Commonly associated species include big sagebrush (*Artemisia tridentata*), scrub oak (*Quercus turbinella*), and mountain mahogany (*Cercocarpus* spp.)

The fir-pine forest community generally occurs at elevations between 7,500 and 9,000 feet and is restricted to the Spring and Sheep mountain ranges and the highest elevations of the Virgin Mountains. This community is dominated by white fir (*Abies concolor*) and yellow pine (*Pinus ponderosa*); quaking aspen (*Populus tremuloides*) can be found in isolated mesic areas. Many other shrubs, small trees, and herbaceous plants also occur within fir-pine forest.

The bristlecone pine forest community extends from approximately 9,000 feet along the uppermost ridges of the Spring Range to timberline at 11,500 feet. At lower elevations, limber pine (*Pinus flexilus*) is mixed with scattered white fir and bristlecone pine (*Pinus aristata*). At higher elevations, white fir and bristlecone pine are more abundant and dwarf juniper (*Juniperus communis*) is found throughout. This community generally lacks a shrub or herbaceous understory.

The pseudo-alpine community is found above the timberline on Charleston, Hayford, and Sheep peaks. These areas are exposed to winds and lack a well-developed alpine flora and fauna. Only small wind-stunted woody plants and herbs are found in this community.

Rock outcrops occur in all of the communities discussed previously. Plant species include representatives of each community as well as a distinct flora dependent on the elevation where found.

5) Wildlife

Based on studies included in the Clark County Comprehensive Plan, Clark County contains at least 775 species of plants, 41 species of fish, 9 species of amphibians, 54 species of reptiles, 392 species of birds, and 142 species of mammals. Creosote bush and blackbrush scrub communities contain about 430 species of wildlife and vegetation, including 30 of the 54 species of reptiles. Mountain communities contain the greatest number of plants (414) and the greatest total number of species (579). In addition to providing habitat for all fish species, water-related communities (desert spring and marsh, stream riparian, and lake) also have the greatest number of bird species (245). Creosote bush scrub, blackbrush scrub, and riparian communities are the most heavily used by the majority of terrestrial bird species.

Chapter Three
Clark County's Desert Conservation Plan

A. Introduction

Within several months after the desert tortoise was emergency listed in August of 1989, Clark County, in consultation with the USFWS, decided to develop a habitat conservation plan for the desert tortoise in two phases. The first phase, as incorporated in the Short-Term HCP, was developed to provide immediate conservation and preservation measures for the desert tortoise and to alleviate the economic hardships which occurred after the listing of the species by allowing take within the rapidly developing urban areas of the Las Vegas Valley. It also was designed to provide a three-year time frame during which the second phase, a long-term habitat conservation plan, might be developed.

The Short-Term HCP focused its mitigation efforts on the establishment of Desert Wildlife Management Areas (referred to in the short-term plan as Tortoise Management Areas [TMAs]) through the conservation and management of incrementally delineated blocks (100,000 acres or more) of habitat. Conservation and management of these blocks of habitat, which together now total more than 400,000 contiguous acres, was accomplished by the acquisition of grazing privileges with funds provided by the HCP, the imposition of management prescriptions and actions taken by the federal resource managers assisted by funding from the HCP, and the establishment of a perpetual endowment fund to continue to assist in the funding of conservation measures, all as more specifically set forth in the compliance report prepared by Clark County and submitted to the USFWS in February 1994 which evaluates the provisions of the Short-Term HCP.

The Short-Term HCP also provided for minimization and monitoring of the impacts of take which occurred as a result of the issuance of the short-term Section 10(a) permit within the Las Vegas Valley. Those minimization and monitoring efforts were accomplished through requirements imposed on projects within the Las Vegas Valley where permitted take occurred, the preparation and maintenance of records which kept

track of the number of desert tortoises taken and the number of acres of habitat disturbed, and the development of a public information program.

The Clark County Short-Term Desert Tortoise HCP was approved and the USFWS issued its Section 10(a) incidental take permit (PRT 756260) on July 24, 1991, for a three-year term, during which time the participants in the planning process have developed this Desert Conservation Plan.

However, the development of the long-term plan has taken longer than expected for several reasons:

1. The USFWS established the Desert Tortoise Recovery Team, which was convened to make recommendations regarding measures that, in the opinion of its members, would lead to the survival and recovery of the species in the wild. The Draft Desert Tortoise Recovery Plan was published in 1993. The Steering Committee delayed its proceedings pending the publication of the report in order to assure that its plan was consistent with the recommendations of the Recovery Plan. The final Recovery Plan is due to be released by the USFWS sometime during 1994. In the event of significant modifications to the Draft Recovery Plan which would modify the conservation values of mitigation measures provided for herein, it would be the intention of the permittees to consider the modification of this plan to conform with the final Recovery Plan.

2. The USFWS was ordered by a federal circuit court to designate Critical Habitat not only in Nevada but also throughout the range of the desert tortoise. The final designation of Critical Habitat, which is that part of the environment the preservation and conservation of which the USFWS considers essential to the continued long-term survival and recovery of the species, was published in early 1994. The Steering Committee decided that its long-term plan could not be completed until Critical Habitat had been designated in order to determine where its proposed mitigation measures should be implemented.

3. The long-term implementation of many of the management actions and prescriptions included in the Short-Term HCP, as well as many of those recommended by the Recovery Team, is dependent upon final approval of the BLM's Resource Management Plan for the area. Final approval of the RMP and its attendant EIS is not expected until early in 1995. The Steering Committee believed that it would be difficult for the USFWS to evaluate the terms of the Desert Conservation Plan without knowing how the BLM intends to manage the area and implement conservation measures.

While this Desert Conservation Plan has been submitted prior to the conclusion of the three-year term of the Short-Term HCP, the review and approval process, including the preparation of an Environmental Impact Statement, makes it impossible for the USFWS to issue the requested long-term Section 10(a) permit prior to the expiration of the short-term permit. Therefore, Clark County and the other permittees under the short-term permit have submitted an application to the USFWS to extend the term of the short-term permit for one year and to amend the permit to increase the number of acres of tortoise habitat which can be disturbed, in order to give it the time necessary to coordinate the terms of this Desert Conservation Plan with the Recovery Plan, the Critical Habitat designation, and the RMP. In consideration of the extension and the additional habitat allowed to be disturbed, additional mitigation in the form of additions to the endowment fund, additional funding for research and public information and education, and inclusion of additional acreage to be managed consistent with the management and conservation measures outlined in the short-term plan has been offered.

As the Short-Term HCP was being administered, the Steering Committee came to recognize that implementation of its plan was almost entirely dependent upon actions and policies of the federal land managers, which were not within its control. In addition, the short-term plan had been criticized by some because its mitigation measures were accomplished almost entirely upon federal lands by the federal land managers who, according to the critics, should have been implementing those policies and management actions in the first place.

While not necessarily agreeing with the critics, the Steering Committee acknowledged that its plan was very dependent upon the actions of the federal land managers and the policies adopted from time to time by those agencies and that its Section 10(a) permit might be jeopardized should, for any reason, the federal land managers, either voluntarily or by court order, modify their land management policies. For example, pursuant to the Short-Term HCP, OHV activities within the DWMA are limited to designated roads and trails. While the BLM has designated the roads and trails upon which this activity may occur, closure of the remaining roads and trails was accomplished on an emergency and interim basis. Permanent closure of nondesignated roads and trails is dependent upon adoption of a final RMP which so provides. While it may be likely that the terms of the approved RMP will be consistent with its interim emergency action, there is no assurance that the RMP will include such a provision. Furthermore, even if the final RMP does so provide, the decision of the BLM is subject to appeal to the Interior Board of Land Appeals and possible challenge in the courts. The process could take years to finally resolve and conceivably could result in a final decision which could adversely impact the permit sought by Clark County.

Consequently, the Steering Committee for the development of the Desert Conservation Plan decided to modify its approach from that taken in the Short-Term HCP in order to

be less dependent on the policies and actions of other entities, while at the same time taking advantage of the work done by the Desert Tortoise Recovery Team and the designation of Critical Habitat. Thus, mitigation measures funded by this Desert Conservation Plan:

1. Will be taken from those suggested by the Desert Tortoise Recovery Plan for the long-term survival and recovery of that species;

2. Will be implemented within areas designated as Critical Habitat; and

3. Will provide long-term conservation and preservation measures which are implementable almost without regard to policies and actions by the land managers. While the Steering Committee recognizes that the long-term survival and recovery of the species will hinge in large part upon management and protection of Critical Habitat by the federal land managers, the projects and activities funded by the Desert Conservation Plan, by themselves, should reduce adverse effects upon the species independent of actions taken by the land managers.

This Desert Conservation Plan is intended to entirely supersede the Short-Term HCP and its extension. The plan retains some of the minimization and mitigation measures of the Short-Term HCP and the extension while deleting, expanding, and adding other measures.

This section of the HCP presents the details of the Clark County Desert Conservation Plan in a sequence that corresponds to its use as part of Clark County's application for an incidental take permit from USFWS. Section 3.B identifies the proposed scope of the federal permit and the loss of tortoise habitat that will occur. Section 3.C proposes the measures to minimize and monitor the impacts of take, Section 3.D presents the measures by which the impacts of take will be mitigated to the maximum extent practicable, and Section 3.E details how the plan will be financed. Section 3.F sets forth how the plan will be implemented and monitored. Section 3.G discusses the alternatives to the proposed take and alternative conservation strategies that were considered during the preparation of this Desert Conservation Plan.

B. Scope of the 10(a) Permit

1) Permit Period and Area

Clark County and the Cities of Las Vegas, North Las Vegas, Henderson, Mesquite, and Boulder City, are seeking a Section 10(a) permit for the incidental take of desert tortoise in connection with the development of nonfederal lands within Clark County for a 30-year period. In addition, NDOT has joined as an applicant for the permit to allow the incidental take of desert tortoises within desert tortoise habitat, south of the 38th parallel and below 5,000 feet in elevation, in connection with:

a. The construction and maintenance of roads, highways, and material sites outside of DWMAs; and

b. The maintenance of roads, highways, and material sites within DWMAs.

Because some federal lands within Clark County will be transferred to nonfederal owners during the permit period, a projected level of such transfers from federal to nonfederal ownership has been included in the potential estimated loss of tortoise habitat in the permit area as well. The permit is intended to apply to such lands as they are transferred out of federal ownership, with the exception of such lands which are within established DWMAs. Thus, the permit will apply to all nonfederal lands which currently exist, and all nonfederal lands which result from sales or transfers from the federal government after the issuance of the Section 10(a) permit if they are located outside of established DWMAs.

a) Nonfederal Lands

The area covered by the Section 10(a) permit will include the nonfederal lands in Clark County (412,000 acres) shown on Figure 9 in this Clark County Desert Conservation Plan. In general, this area includes nonfederal lands within the cities of Las Vegas, North Las Vegas, Henderson, Mesquite, and Boulder City; the unincorporated towns of Sunrise Manor, Whitney, Winchester, Paradise, Laughlin, Moapa Valley, Moapa, Glendale, Indian Springs, Bunkerville, Mount Charleston, Searchlight, and Spring Valley; and portions of the unincorporated areas of Lone Mountain, Goodsprings, Mountain Springs, Red Rock, Sandy Valley, Apex, Aerojet, Enterprise, and portions of the Pahrump Valley.

b) Federal Disposal Lands

In addition to the nonfederal lands identified above, the alternatives set forth in the draft Stateline Resource Area RMP provide that the BLM will sell or otherwise transfer up to

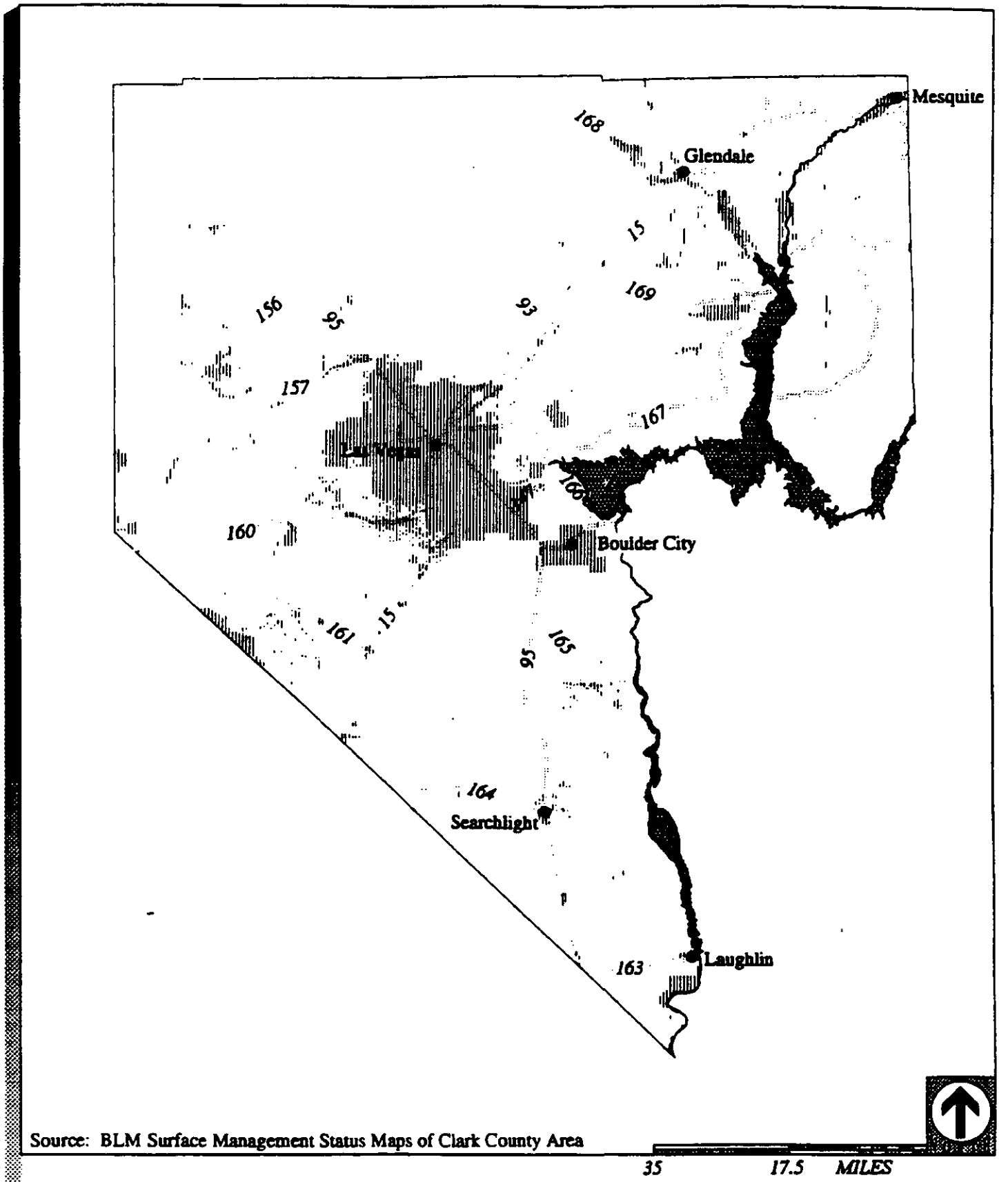


FIGURE 9

Nonfederal Lands in Clark County

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540,171 acres of lands currently managed by it, as set forth on Table 1 and shown on Figure 10. For purposes of this plan, we are assuming that approximately 198,000 acres will be sold or otherwise transferred.

The permit sought hereunder is intended to apply to all such federal lands sold or otherwise transferred during the term of the permit with the exception of lands sold or transferred within established DWMAs.

c) Lands Subject to Development

Of the approximate 610,000 acres within the permit area subject to future development, at least 170,000 acres contain existing urban development (Planning Information Corporation 1990, updated to 1993). Furthermore, this plan projects that approximately 85,000 acres of the 107,500-acre EVTA will be subject to a conservation easement that will restrict activities on the land to those which are not detrimental to the survival and recovery of the desert tortoise as outlined in the Draft Desert Tortoise Recovery Plan. Thus, the total acres of federal and nonfederal lands within the permit area actually available for future development is 355,000 (Table 3).

TABLE 3
LAND IN CLARK COUNTY SUBJECT TO FUTURE DEVELOPMENT

Land	Federal Disposal (acres)	Nonfederal (acres)	Total (acres)
Subject to development	198,000	412,000	610,000
Less existing development or conservation easement	85,000	170,000	255,000
Total Acres	113,000	242,000	355,000

d) NDOT Rights-of-Way

Some of NDOT's regular maintenance activities may impact desert tortoises. These routine maintenance activities will not disturb areas outside of NDOT's right-of-way.

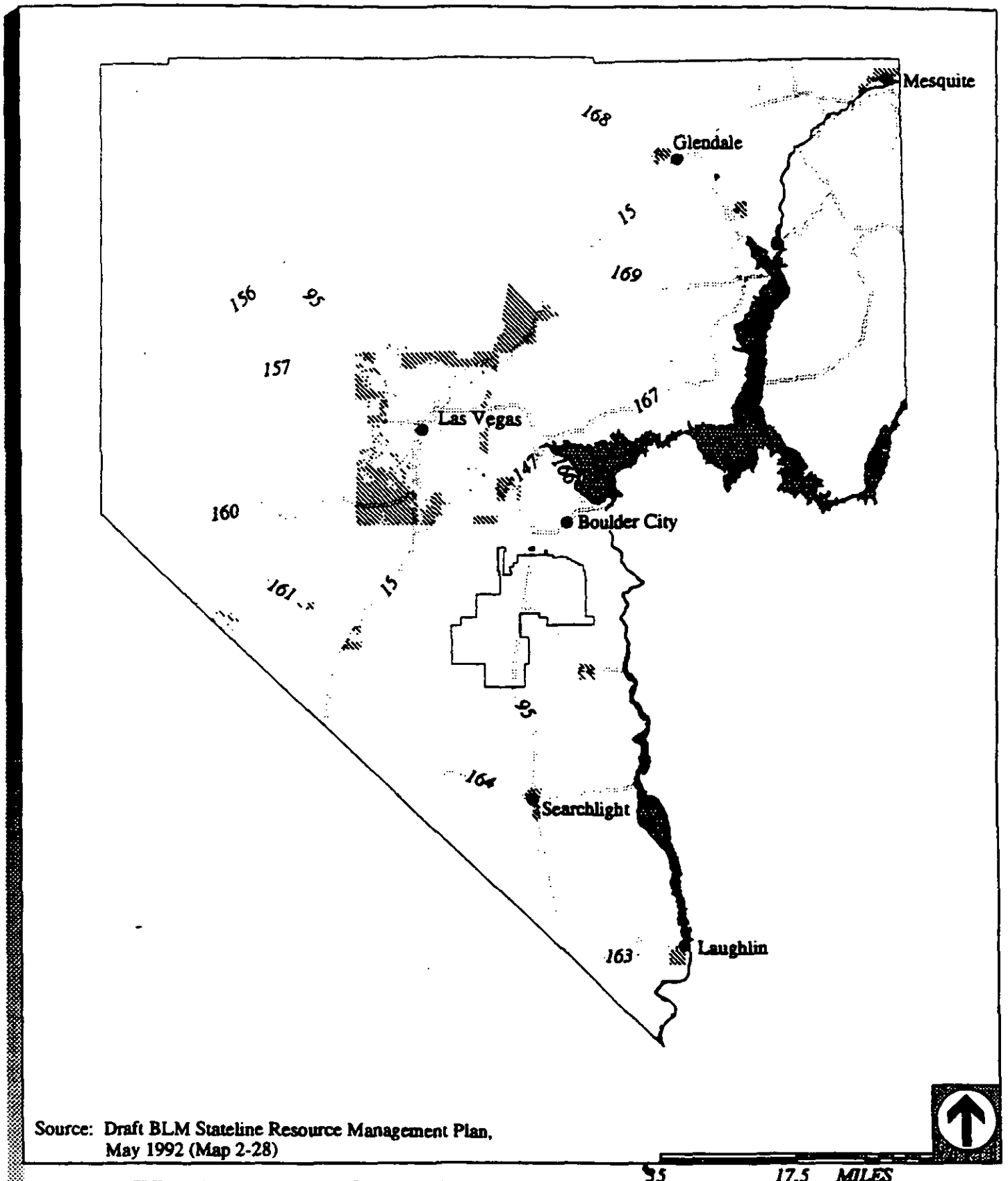

FIGURE 10

Disposal Lands in Clark County

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Therefore NDOT's maintenance activities will not impact the desert tortoise unless a desert tortoise is found within NDOT's right-of-way.

Loss of tortoise habitat will occur as a result of road widening activities, new highway construction, and materials extraction. NDOT long-range plans anticipate limited amounts of road widening within the plan area. Disturbance associated with road widening activities will generally be within 50 feet of existing roadways.

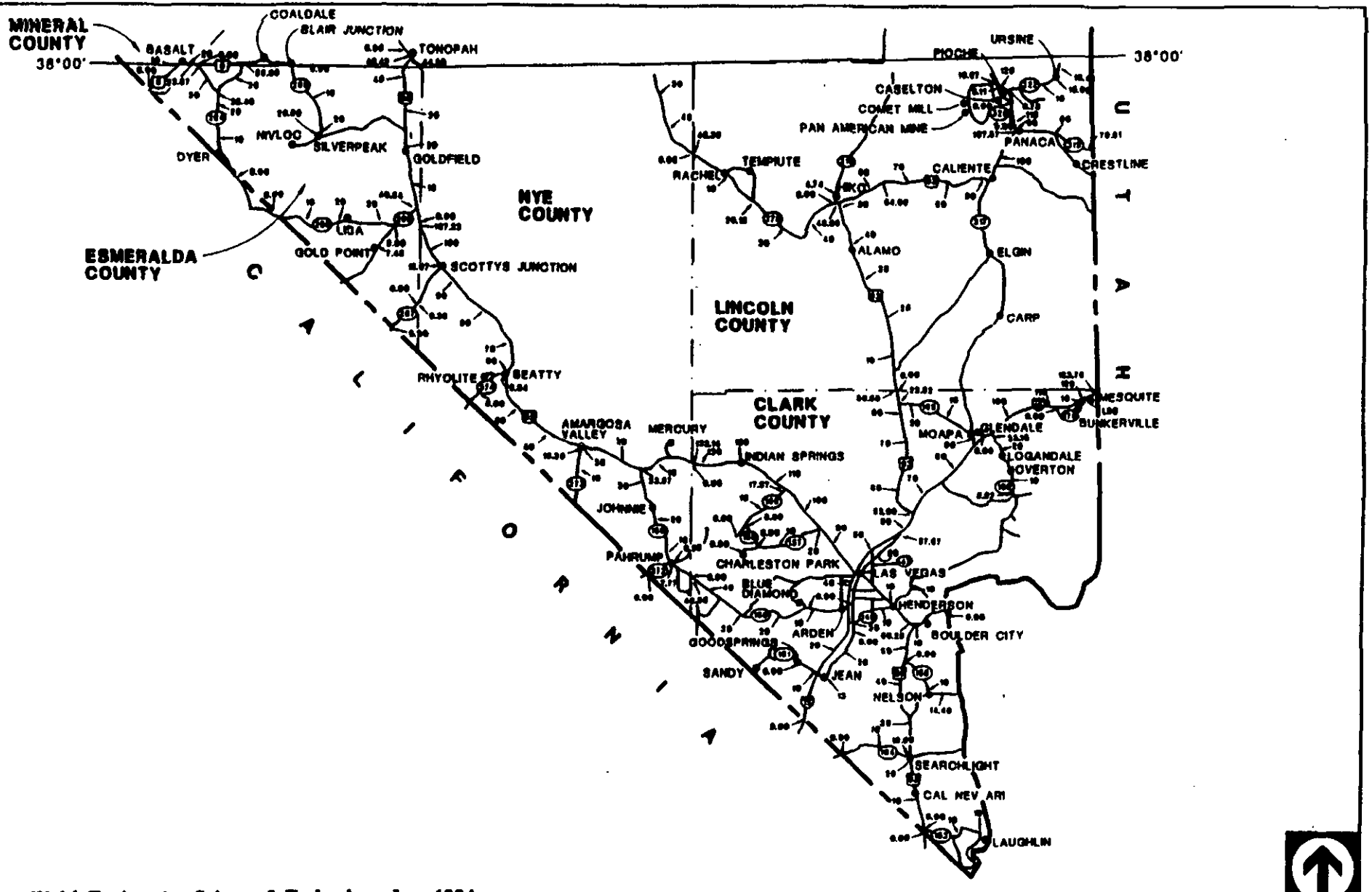
For the purpose of this conservation plan, NDOT rights-of-way are broadly defined to include lands purchased or withdrawn from public lands for the use of highways, transportation facilities, material sites and their access roads. NDOT rights-of-way also include those areas of highway facilities that extend beyond the purchased or withdrawn property. This includes drainage or V-ditches constructed and regularly maintained by NDOT.

The area covered by this plan includes approximately 1,000 miles of roadway through desert tortoise habitat in Clark, Nye, Lincoln, Mineral, and Esmeralda counties that are presently maintained by NDOT (Figure 11). Desert tortoise habitat is defined as areas below 5,000 feet in elevation and south of the 38th parallel. Incidental take will be allowed in connection with the maintenance of roads, highways, and material sites within DWMAs.

2) Estimated Loss of Tortoise Habitat

Although the entire 10(a) permit area includes an estimated 355,000 acres with potential for development, not all of the land will be developed during the 30-year permit period. The County Desert Conservation Plan assumes that the amount of land likely to be developed in the permit area between 1994 and 2023 is 111,000 acres. This number is based on population projections by the Clark County Department of Comprehensive Planning discussed in Chapter 2.C. of this conservation plan. Table 4 presents a model of projected land disturbance in Clark County based on the County's population projections. Within the region, population forecasts continue to indicate that the Las Vegas Valley will contain more than 90 percent of the county population.

In order to avoid expensive surveys which will not provide benefits to the population in the wild, this plan will assume that all of the 111,000 acres is desert tortoise habitat, even though it is known that significantly less than all of that land is in fact now occupied by desert tortoise. For example, during the three-year term of the Short-Term HCP, about 17,000 acres were surveyed for desert tortoises, but less that 1,200 of those acres were found to be occupied at the time the surveys were conducted.



Source: Welsh Engineering Science & Technology, Inc. 1994

FIGURE 11

NDOT Rights-of-Way in Plan Area

TABLE 4
PROJECTED LAND DISTURBANCE IN CLARK COUNTY BASED ON MODELED POPULATION GROWTH

	Year	Modeled Projected Population	Annual Population Change	Annual Acres Developed	Cumulative Acres Developed	County Population Projection	Difference Modeled vs County
	1993	892,191	-	-	-	919,388	
1	1994	922,514	30,323	5,810	5,810		
2	1995	952,061	29,547	5,661	11,471		
3	1996	980,834	28,773	5,513	16,984		
4	1997	1,008,833	27,999	5,365	22,349		
5	1998	1,036,060	27,226	5,217	27,565		
6	1999	1,062,514	26,454	5,069	32,634		
7	2000	1,088,197	25,683	4,921	37,555	1,081,145	7,052
8	2001	1,113,110	24,913	4,773	42,328		
9	2002	1,137,253	24,143	4,626	46,954		
10	2003	1,160,627	23,374	4,478	51,432		
11	2004	1,183,232	22,606	4,331	55,763		
12	2005	1,205,070	21,838	4,184	59,948		
13	2006	1,226,142	21,071	4,037	63,985		
14	2007	1,246,447	20,305	3,891	67,875		
15	2008	1,265,987	19,540	3,744	71,619		
16	2009	1,284,763	18,776	3,597	75,217		
17	2010	1,302,776	18,012	3,451	78,668	1,284,337	18,439
18	2011	1,320,025	17,249	3,305	81,973		
19	2012	1,336,512	16,487	3,159	85,132		
20	2013	1,352,238	15,726	3,013	88,145		
21	2014	1,367,203	14,965	2,867	91,012		
22	2015	1,381,409	14,205	2,722	93,734		
23	2016	1,394,855	13,446	2,576	96,310		
24	2017	1,407,543	12,688	2,431	98,741		
25	2018	1,419,473	11,930	2,286	101,027		
26	2019	1,430,647	11,173	2,141	103,168		
27	2020	1,441,064	10,417	1,996	105,164	1,450,409	(9,345)
28	2021	1,450,726	9,662	1,851	107,015		
29	2022	1,459,633	8,907	1,707	108,722		
30	2023	1,467,787	8,154	1,562	110,284		

It should be noted that it is estimated that more than 3.5 million acres of tortoise habitat occur within Clark County. Thus, even if all 111,000 acres were actually tortoise habitat, its development would result in less than a four percent loss.

a) Habitat Conditions in the Las Vegas Valley

Desert tortoise habitat in the Las Vegas Valley has been severely affected by existing development and human activities (Clement Associates 1990; Karl 1983). Specifically, habitat has been fragmented by the proliferation of roads and scattered urban land uses and degraded by dumping, irresponsible off-road vehicle use, vandalism, and vehicle traffic. Incidence of URTD in Las Vegas Valley is extensive (RECON 1991). For these reasons, the minimum viable population analysis (Gilpin 1990) presented in Appendix B of the Short-Term Desert Tortoise HCP notes that habitat in the Las Vegas Valley will probably not support a viable tortoise population in the long term.

In general, lands within the Valley can be described as (1) lands which, because of soil conditions and vegetation, are not suitable habitat; (2) lands which may have been suitable habitat but from which desert tortoises have been extirpated as a result of surrounding development (i.e., urban in-fill areas); (3) lands which have been shown to be low quality habitat due to soils and vegetation and which historically have supported only low tortoise densities (i.e., the north and east sides of the Las Vegas Valley); and (4) lands which have been of historically high quality and supported moderate to high density tortoise populations but which have been degraded due to adjacent urbanization and associated human activities (i.e., south and west sides of Las Vegas Valley). We know, based upon our experience with the short-term plan, that desert tortoises are seldom, if ever, found on the first two categories of land and that few desert tortoises are found on the third category of land. Within the fourth category, desert tortoises may still be found in moderate to high densities, but over the long run, it is unlikely that such densities can be sustained, even if the land is not developed, because of the effects of development of surrounding lands (Gilpin 1990).

The desert tortoise, if it survives to adulthood, can be expected to live many years, even if faced with significant environmental hazards; however, juvenile tortoises experience extremely high mortality rates, even in the wild and without the additional environmental hazards associated with urban development (Wilbur and Morin 1988; Turner et al. 1987; USFWS 1993). Thus, while some populations of adults within the Valley might be expected to survive for many decades into the future, the low level of recruitment of the juvenile population into adulthood as a result of surrounding development portends a steadily declining population and eventual extirpation. Because development within the Valley will continue whether or not the Section 10(a) permit is issued, most biologists believe that attempts to protect the tortoise in and around urban areas would be fruitless over the long term and that the population in the wild would be better served by raising

money from development of the existing urban areas to be spent on conservation measures within areas that are some distance from Las Vegas and the Las Vegas Valley.

b) Habitat Within NDOT Rights-of-Way

As indicated above, more than 1,000 miles of existing highways transect the range of the desert tortoise in southern Nevada. NDOT anticipates implementation of 26 road widening projects affecting approximately 234 miles of rights-of-way during the next 10 years (the term of their most recent long-term plan dated 1993). These projects would result in approximately 494 acres of disturbance adjacent to existing roadways in Clark, Lincoln, and Nye counties.

In addition, to support both maintenance and construction activities in the plan area, NDOT will require the development of long-term gravel sources. They anticipate the need for approximately three new materials sites per year for the next three to five years and one per year thereafter. The area of disturbance affected by material site operations is approximately 60 acres. Therefore, a maximum of approximately 2,400 acres of land may be developed as materials sites over the 30-year term of the permit.

Data on traffic volumes, desert tortoise densities on specific segments of NDOT rights-of-way in the counties of Clark and Lincoln and the northwest and northeast portions of the plan area are presented in detail in Appendix B.

c) Habitat Corridor

During the development of the Short-Term HCP, several tortoise biologists expressed the concern that the boundary established for the Section 10(a) permit would foreclose the option of a habitat corridor on the west side of the Las Vegas Valley connecting tortoise populations located north and south of Las Vegas. However, it was the opinion of the technical advisory committee (TAC), biologists who were consultants to the Short-Term HCP, and conservation biologists Dr. Peter Brussard and Dr. Michael Gilpin that the areas north and south of Las Vegas had already been decoupled by the intervening urbanization surrounding Las Vegas. Also, included in this determination were the following:

1. The areas north and west of Las Vegas Valley are ineffective as corridors because of urban impacts associated with the growth of Las Vegas.

2 Genetic exchange can be accomplished mechanically.

3. Gene flow that occurs now through the area is likely negligible.

4. Other corridors may exist around the Las Vegas Valley.

3) Effects Upon Growth

Concern has been expressed that the issuance of a Section 10(a) incidental take permit for desert tortoises will cause Las Vegas to continue its growth which will have an adverse impact on species other than the desert tortoise.

While the issuance of a Section 10(a) permit pursuant to the terms of this plan may facilitate patterns of development which might not be possible without the permit, the issuance of the permit will not cause that development to occur. Likewise, if the requested permit is not issued, the only development which will be curtailed will be that upon occupied habitat. Development upon lands not occupied by desert tortoises would undoubtedly continue. While experience with the Short-Term HCP is not necessarily predictive of what might be experienced during the long-term plan, over 90 percent of all sites developed during the short-term permit were not occupied by desert tortoises at the time surveys were conducted and their development could have proceeded even in the absence of the permit. Indeed, it is clear that without implementation of the Desert Conservation Plan and the issuance of the permit it seeks, two significant results are likely:

a. Development patterns would be modified; that is, lands occupied by the desert tortoise would not be developed and those which are unoccupied would be developed. Thus, hopscotch and intermittent development could be expected and fragmentation and isolation of remaining populations would continue. Furthermore, adverse effects of development on species not sharing habitat with the desert tortoise could be reasonably expected to increase.

b. No money would be available to provide additional protection to the desert tortoise populations in the wild, nor would money be available to provide multiple species planning and protection.

4) Other Biological Resources

a) Other Species of Concern

Not including the desert tortoise, 91 sensitive plants and animals either occur or potentially occur in Clark County (Table 5). Included in this list are 13 federally endangered and 1 federally proposed endangered species; 4 federal Category 1 candidate species; 61 federal Category 2 candidate species; 1 federal Category 3A candidate species; 1 federal Category 3B candidate species; 1 federal Category 3C candidate species; 1 species protected under the federal Bald Eagle Protection Act; and 8 species with no federal status that are protected or considered sensitive by the state of Nevada or the Northern Nevada Native Plant Society (see Table 5 for definitions of Category 1, 2,

TABLE 5
SENSITIVE SPECIES POTENTIALLY FOUND IN CLARK COUNTY

Birds

American peregrine falcon (*Falco peregrinus*) -- FE/SP
Bald eagle (*Haliaeetus leucocephalus*) -- FE/BEPA
Black tern (*Chlidonias niger*) -- C2
Brown pelican (*Pelecanus occidentalis*) -- FE
Ferruginous hawk (*Buteo regalis*) -- C2
Golden eagle (*Aquila chrysaetos*) -- BEPA
Least tern (*Sterna antillarum*) -- FE/SP
Loggerhead shrike (*Lanius ludovicianus*) -- C2
Mississippi kite (*Ictinia* mississippiensis) -- SP
Northern goshawk (*Accipiter gentilis*) -- C2
Phainopepla (*Phainopepla nitens*) -- SP
Southwestern willow flycatcher (*Empidonax trailii extimus*) -- FPE
Western least bittern (*Ixobrychus exilis hesperis*) -- C2
Western snowy plover (interior population) (*Charadrius alexandrinus nivosus*) -- C2
White-faced ibis (*Plegadis chihi*) -- C2
Wood stork (*Mycteria americana*) -- FE/SP
Yuma clapper rail (*Rallus longirostris yumanensis*) -- FE

Mammals

California leaf-nosed bat (*Macrotus californicus*) -- C2
Desert bighorn sheep (*Ovis canadensis nelsonii*) -- Game Animal, SR
Greater western mastiff bat (*Eumops perotis californicus*) -- C2
Hidden Forest Uinta chipmunk (*Eutamias umbrinus nevadensis*) -- C2
Pacific western big-eared bat (*Plecotus townsendi townsendi*) -- C2
Palmer's chipmunk (*Eutamias palmeri*) -- C2
Southwestern cave myotis (*Myotis velifer brevis*) -- C2
Southwestern otter (*Lutra canadensis sonorae*) -- C2
Spotted bat (*Euderma maculata*) -- C2/SP

Reptiles

Banded Gila monster (*Heloderma suspectum cinctum*) -- SP
Chuckwalla (*Sauromalus obesus*) -- C2

Amphibians

Arizona southwestern toad (*Bufo microscaphus microscaphus*) -- C2
Relict (and Vegas Valley) leopard frog [*Rana onca* (*Rana fisheri*)] -- C3A

TABLE 5
SENSITIVE SPECIES POTENTIALLY FOUND IN CLARK COUNTY
(continued)

Fish

Bonytail chub (*Gila elegans*) -- FE/SP
Colorado squawfish (*Ptychochoelius lucius*) -- FE/SP
Moapa dace (*Moapa coriacea*) -- FE/SP
Moapa roundtail chub (*Gila robusta* ssp.) -- C2
Moapa speckled dace (*Rhinichthys osculus moapae*) -- C2/SP
Moapa White River springfish (*Crenichthys baileyi moapae*) -- C2
Pahrump killifish (*Empetrichthys latos*) -- FE/SP
Razorback sucker (*Xyrauchen texanus*) -- FE
Virgin River roundtail chub (*Gila robusta seminuda*) -- FE/SP
Virgin spinedace (*Lepidomeda mollispinis mollispinis*) -- C2
Woundfin minnow (*Plagopterus argentissimus*) -- FE/SP

Invertebrates

Carol's silverspot butterfly (*Speyeria zerene carolae*) -- C2
Grated tryonia (*Tryonia clathrata*) -- C2
MacNeill sooty-wing skipper (*Hesperopsis gracielae*) -- C2
Moapa pebblesnail (*Fluminicola avernalis*) -- C2
Moapa Warm Springs riffle beetle (*Stenelmis caldia moapa*) -- C2
Morand's checkerspot (*Euphydryas anicia morandi*) -- C2
Spring Mountain blue (*Plebejus shasta charlestonensis*) -- C2

Plants

Alkali mariposa-lily (*Calochortus striatus*) -- C2/W
Barrel cactus (*Ferocactus acanthodes* var. *lecontei*) -- CY/W
Blue diamond cholla (*Opuntia whipplei* var. *multigeniculata*) -- C1/CY/T
California bearpoppy (*Arctomecon californica*) -- C2/CE/T
Charleston draba (*Draba paucifructa*) -- C2/T
Charleston ground daisy (*Townsendia jonesii* var. *tumulosa*) -- C2/W
Charleston kittentails (*Synthyris ranunculina*) -- C1/E
Charleston pussytoes (*Antennaria soliceps*) -- C2/T
Charleston tansy (*Sphaeromeria compacta*) -- C1/T
Charleston violet (*Viola purpurea* var. *charlestonsis*) -- W
Clokey catchfly (*Silene clokeyi*) -- C2/T
Clokey's eggvetch (*Astragalus oophorus* var. *clokeyanus*) -- C1/T
Clokey forsellesia (*Foresellesia clokeyi*) -- C2/W

TABLE 5
SENSITIVE SPECIES POTENTIALLY FOUND IN CLARK COUNTY
(continued)

Plants (continued)

Clokey milkvetch (*Astragalus aequalis*) -- C2/T
Clokey Mountain sage (*Salvia dorrii* var. *clokeyi*) -- C2/W
Clokey pincushion (rosy foxtail cactus) (*Coryphantha vivipara* ssp. *rosea*) -- CY
Curvepod milkvetch (*Astragalus mohavensis* var. *hemigyrus*) -- C2/CE#/E
Death Valley beardtongue (*Penstemon fruticiformis* ssp. *amargosae*) -- C2/T
Delicate rock daisy (*Perityle megalocephala* var. *intricata*) -- W
Funeral milkvetch (*Astragalus funereus*) -- C2/W
Geyer milkvetch [*Astragalus geyeri* var. *triquetrus* (*Astragalus triquetrus*)] -- C2/CE/T
Hidden ivesia (*Ivesia cryptocaulis*) -- C2/T
Hoffman's cryptantha (*Cryptantha hoffmannii*) -- C3B
Jaeger beardtongue (*Penstemon thompsoneae* var. *jaegeri*) -- W
Jaeger's draba (*Draba jaegeri*) -- C2/T
Jaeger's ivesia (*Ivesia jaegeri*) -- C2/W
Kingston bedstraw (*Galium hilendiae* var. *kingstonense*) -- C2/T
Pahrump Valley buckwheat (*Eriogonum bifurcatum*) -- C2/T
Nevada willowherb (*Epilobium nevadense*) -- C2/W
Remote rabbitbrush (*Chrysothamnus eremobius*) -- C2/W
Rosy king sandwort (*Arenaria kingii* ssp. *rosea*) -- C2/T
Rosy twotone beardtongue (*Penstemon bicolor* ssp. *roseus*) -- C2/T
Rough angelica (*Angelica scabrida*) -- C2/T
Sanicle biscuitroot (*Cymopterus ripleyi* var. *saniculoides*) -- C2/W
Sheep fleabane (*Erigeron ovinus*) -- C2/W
Sheep Mountain milkvetch [*Astragalus amphioxys* var. *musimonum* (*Astragalus musimonum*)] -- C2/W
Smooth dwarf greasebush [*Glossopetalon pungens* var. *glabra* (*Forsellesia pungens* var. *glabra*)] -- C2/W
Spring Mountain milkvetch (*Astragalus remotus*) -- C2/W
Sticky buckwheat (*Eriogonum viscidulum*) -- C2/CE/T
Unusual catseye (*Cryptantha insolita*) -- C2*/CE
Utah spikemoss (*Selagenella utahensis*) -- C3C/W
White bearpoppy (*Arctomecon merriamii*) -- C2/W
White-margined beardtongue (*Penstemon albomarginatus*) -- C2/T
Yellow twotone beardtongue (*Penstemon bicolor* ssp. *bicolor*) -- C2/T

TABLE 5
SENSITIVE SPECIES POTENTIALLY FOUND IN CLARK COUNTY
(continued)

Status

FE = Federally listed as an endangered species; in danger of extinction in all or significant portions of their ranges.

FPE = Federally proposed for listing as endangered.

C1 = Candidate taxa for which enough substantial information exists to support a proposal for threatened or endangered listing. Also included in this category are taxa of known vulnerable status that may already have become extinct (indicated by placement of an asterisk after the number); these taxa retain a high priority for addition to the federal threatened/endangered lists if extant populations are identified.

C2 = Candidate taxa for which there is some evidence of vulnerability, but for which there are not enough current data to support a threatened or endangered listing proposal.

C2* = Candidate taxa for which there is some evidence of vulnerability, but for which there are not enough current data to support a threatened or endangered listing proposal; lacking known occurrences at this time.

C3A = Candidate taxa for which the U.S. Fish and Wildlife Service has persuasive evidence of extinction. If rediscovered, such taxa might acquire high priority for listing.

C3B = Names that, on the basis of current taxonomic understanding, do not represent distinct entities meeting the endangered species act's definition of "species." Such supposed taxa could be reevaluated in the future on the basis of new information.

C3C = Candidate taxa that have proven to be more abundant or widespread than previously believed and/or those that are not subject to any identifiable threat. If further research or changes in habitat indicate a significant decline in any of these taxa, they may be reevaluated for possible inclusion in categories 1 or 2.

BEPA = Bald Eagle Protection Act.

TABLE 5
SENSITIVE SPECIES POTENTIALLY FOUND IN CLARK COUNTY
(continued)

Status (cont.)

CE = State listed as critically endangered; taxa threatened with extinction, whose survival requires assistance because of overexploitation or disease or because their habitat is threatened with destruction, drastic modification, or severe curtailment (NRS 527.260.030).

CE# = Recommended for state listing as critically endangered pending formal listing (NRS 527).

CY = Protected by the State of Nevada as a cactus yucca or Christmas tree (NRS 527.060.020).

SP = Protected by the State of Nevada (NRS 501.331, 501.375, 501.386).

SR = State regulated (NAC 503.020).

E = Considered endangered by the Northern Nevada Native Plant Society.

T = Considered threatened by the Northern Nevada Native Plant Society.

W = Considered potentially vulnerable by the Northern Nevada Native Plant Society; in need of monitoring or further data collection to determine status.

3A, 3B, and 3C). Information on the legal status, habitat preference, occurrence, and range of these 91 species is presented in Appendix C.

Of the 91 species, 26 occupy habitat associated with desert tortoise. Of the remaining species, at least 31 are found in montane, 17 in aquatic, 14 in riparian, 5 in other, and 6 in limited or unknown habitats (total exceeds 91 because some species are found in more than one habitat type). The species not associated with desert tortoise habitat (desert floors and bajadas in the Las Vegas Valley) are not likely to be directly adversely affected by this conservation plan (e.g., many montane species are located on public lands; aquatic and riparian species are associated with wetlands, many of which are regulated by state and federal agencies).

b) Plant Communities in Clark County

A diversity of plant community types occur in Clark County, including creosote bush scrub, blackbrush scrub, montane shrub, chenopod scrub, alkali sink, Colorado River riparian communities, desert riparian (found in wash areas), pinyon-juniper woodland, fir-pine forest, bristlecone pine forest, pseudo-alpine, rock outcrops, desert springs, and freshwater lakes. A more detailed description of these habitat types is found in Chapter 2.D. of this HCP.

C. Measures to Minimize and Monitor Impacts of Take

1) Lessons Learned from Short-Term HCP Measures to Minimize and Monitor Impacts of Take

The Short-Term HCP includes a combination of permit conditions and enforcement measures which are designed to minimize and monitor the impacts of the incidental take of desert tortoises in the Las Vegas Valley. These conditions include tortoise survey and removal requirements, tortoise placement efforts, project review and monitoring, and a public information and education program. During the two years of implementing these requirements, several problems have been encountered and are discussed below.

a) Tortoise Survey and Removal

Under the Short-Term HCP, land developers are required to survey for and remove tortoises from most lands within the permit area prior to disturbance. Some urbanized areas are excluded from this survey and removal requirement; however, any tortoises found in these excluded areas are collected by the HCP. The required survey and removal is conducted at the developer's expense according to protocols developed specifically for the Short-Term HCP. Compliance with the survey and removal requirement is documented and subject to several levels of audit.

Although the actual survey and removal process has not been a problem in and of itself, it has resulted in very few desert tortoises being removed from development sites (fewer than 276 of the approximate 1,100 delivered to the transfer facility). In addition, requiring all developments, including the very smallest and those which clearly do not involve desert tortoise habitat has proven to be extremely unpopular. Finally, it has created many indirect problems such as administration of the requirement, placement of the collected tortoises, and compliance and acceptance by the public of the requirement that approximately 30 percent of the survey and removal efforts be audited by NDOW. These problems are discussed below under "Project Review and Monitoring Process" and "Tortoise Placement Efforts."

b) Project Review and Monitoring Process

Pursuant to the conditions of the Short-Term HCP, a "Compliance Form" is completed for all projects in the permit area before land disturbance occurs which documents compliance with the survey and removal requirement and details the acreage involved and the number of tortoises displaced. The form is given to the local agency with land use authority. The local agency keeps the form on file until they authorize the site

disturbance, at which time the form is sent to the County. Based on information recorded on the forms, the County compiles monthly reports on actual numbers of tortoises taken and acres of habitat lost. The forms are also utilized by NDOW to conduct the random audits currently required.

The administration of the required survey and removal program with random audits and extensive record keeping required of five jurisdictions has proven to be expensive, replete with problems and without demonstrable benefit to the recovery of the tortoise. Problems include the following: (1) there is disagreement in some jurisdictions as to exactly what "development" includes (e.g., what site disturbance requires a construction activity permit); (2) NDOW is sometimes not notified by building inspectors of projects that have been issued a stop work order due to having disturbed land without a permit prior to NDOW audit; (3) many HCP compliance reports lack proof of grading documentation when claiming that they have been "previously graded"; (4) some building departments continue to accept incomplete HCP compliance reports; and (5) there is no uniform method of describing the location of land to be developed, thus making it difficult, in some cases, for NDOW to locate the parcel to be audited.

c) Tortoise Placement Efforts

Under the Short-Term HCP and its extension, all tortoises collected from properties during the survey and removal are delivered to a single tortoise transfer facility. The land developers pay the tortoise transfer facility a flat fee to cover handling expenses at the facility. Final disposition of collected tortoises is overseen by NDOW and USFWS, who, working with the Implementation and Monitoring Committee, screen and authorize requests for tortoises for translocation programs, adoption programs, research, zoos and museums, and educational facilities. The party proposing to use the tortoises must pay for all costs associated with placing them. That party also is responsible for (1) securing advance authorization from NDOW and USFWS, (2) making all arrangements to move the tortoises from the transfer facility, and (3) marking the received tortoises for identification purposes in a way prescribed by USFWS or NDOW. If collected tortoises cannot be placed in any of the above programs, the Short-Term HCP permits euthanasia as a last resort.

Translocation

Even prior to the issuance of the short-term incidental take permit, many members of the TAC felt that a translocation project would be extremely worthwhile for several reasons. First, successful translocation of significant numbers of desert tortoises had never been attempted; second, it was believed that a translocation project was worthwhile to determine whether or not translocation could be successfully proven as an effective means to restore and repopulate areas in which, for various reasons, the populations had been significantly reduced or extirpated; finally, if translocation was not attempted, the

only alternatives available for the disposition of tortoises displaced as a result of development would be research, adoption, zoos, educational institutions, perpetual care, or euthanasia. Those TAC members viewed each of these alternatives as inferior to the possibility of relocating tortoises into suitable habitat.

On the other hand, other TAC members have expressed continuing concern regarding the prevalent occurrence of the URTD in the Las Vegas Valley, the difficulty in accurately determining whether a specific animal is diseased, and the likelihood that translocating diseased animals into the wild could further spread this fatal disease among the wild populations. In addition, concern has been expressed about translocating animals of differing genetic characteristics into the same area. These concerns, coupled with the generally accepted thesis that translocation is currently not required for the recovery of the species has made it difficult in reaching consensus regarding the scope, extent, scientific content and purpose of a translocation project.

At the request of the TAC and the Implementation and Monitoring Committee, researchers at the University of Nevada, Las Vegas and at the University of Nevada, Reno were asked to submit proposals for a translocation research project. The University of Nevada, Las Vegas declined to participate, but the University of Nevada, Reno agreed to work closely with the two committees to develop a proposal. The researchers, as well as the TAC, investigated several areas in southern Nevada as possible sites for the project. However, each of those areas was eventually deemed to be unsuitable either because of the existence of resident populations, because of jurisdictional problems with the land managers or because fencing to separate the experimental population from adjacent resident populations indicated that the project would turn out to be too expensive. Eventually, it was agreed that various islands and peninsulas in and around Lake Mead might be an appropriate relocation site.

For over a year and a half, the researchers and the committees worked on the development of a specific relocation plan utilizing the islands and peninsulas. In the end, and after considerable review, continued concerns were raised regarding the cost of the project, the high visibility of the project, the likelihood that a significant proportion of the relocated tortoises might perish (Brussard, pers. comm. 1994), and allegations of possible conflicts of interest on the part of the researchers. In the end, the committee was unable to reach consensus regarding the plan and the researchers withdrew their proposal. Nevertheless, the Steering Committee believes that the feasibility and appropriateness of translocation should be pursued.

Adoption Programs

In accordance with the Short-Term HCP permit conditions, one of the options for the disposition of healthy collected animals includes their placement in an adoption program. Both the Tortoise Group (Las Vegas) and the Tur-Toise Club (Reno) contracted with the

County to serve as intermediaries for adoption of animals to individuals in Nevada. To date, approximately half of the animals collected or hatched in captivity have been adopted. But adoption demands are limited, while the numbers of animals collected will continue at a steady rate. Furthermore, tortoises kept in permanent captivity are often stressed and eventually tend to develop URTD and die. There is also the risk that captive tortoises can escape or be released to the wild and spread the disease to an otherwise healthy population. However, adoption programs sponsored by organizations permitted to do so by the USFWS include information which should reduce the likelihood that pets will escape or be released into the wild. Another expressed concern is that promoting the adoption of a threatened or endangered species as a pet is inconsistent with the intent of the ESA to protect species. Finally, the Tortoise Group (Las Vegas) has informed the Steering Committee that it will only place for adoption those tortoises which it believes are escaped pets.

Research and Zoos

Another option authorized under the Short-Term HCP is to place tortoises with zoos, museums, or other educational institutions. To date few have been placed. The USFWS authorized the transfer of 12 tortoises to the San Diego Zoo to be used in an educational display on the current plight of the desert tortoise, research at the Desert Tortoise Conservation Center (DTCC), and efforts to save the species. USFWS also authorized transfer of one diseased tortoise to Death Valley National Monument to be freeze-dried and used in an educational exhibit. Approximately 60 animals have been used for research being conducted at the DTCC.

The lack of demand for tortoises is primarily due to the limited research value of tortoises not taken directly from the wild and the general lack of interest in this species for zoo display.

Tortoise Maintenance

Under the terms of the Short-Term HCP, tortoises collected as a result of the survey and removal process as well as the pick-up service were to be held for from three (3) to five (5) days. If, after that period of time, healthy tortoises could not be translocated, used in research, zoos, or museums, or adopted, they were to be humanely euthanized. Tortoises were prohibited from being held at the transfer facility for more than five (5) days.

As a result of the directive from the Clark County Commission discouraging euthanasia, and because the transfer facility was prohibited from keeping the tortoises for more than five (5) days, tortoises began accumulating at the Tortoise Group (Las Vegas) headquarters, thus creating an ad hoc holding facility that had not been envisioned in the Short-Term HCP.

In April 1992, and after receiving concurrence and a contribution of Section 7 funds from the USFWS, the County agreed to provide the money necessary for the construction of a holding facility at the DTCC. Forty (40) pens were constructed in June of 1992 and 20 more were constructed in June of 1993. At the present time, approximately 250 tortoises are being held, fed and maintained at the DTCC, and it is at capacity. The capacity at the holding facility ranges from 100 to 500 tortoises depending upon age and sex. Based upon our experience during the short term, the average capacity is about 300 at any one time. Unless some alternative disposition of animals displaced by development is found, additional pens will have to be constructed in the very near future.

After much consideration and input from the TAC, the Steering Committee has concluded that:

1. The demand for tortoise to be used in research, zoos, museums and made available for adoption will not keep up with the number of tortoises displaced as a result of development; and that,

2. Merely accumulating tortoises indefinitely at the DTCC could result in over 21,000 tortoises being held there at the end of the Long-Term HCP; and that,

3. The cost of building pens and feeding, maintaining and providing veterinary services to those tortoises will consume a significant portion of the HCP budget; and that,

4. The accumulation will do nothing to promote the survival and recovery of the species in the wild; and that,

5. While there may be some yet unidentified long-term benefits from the experience of husbanding these animals over the term of their lives, the money would be better spent on long-term conservation measures protecting the species in the wild.

Appendix D contains a report which sets forth the cost estimates for tortoise handling alternatives for the Long-Term HCP. The factor which has the greatest effect on total maintenance costs is the requirement to maintain all tortoises which have been collected but which cannot be directed to other management programs (e.g., translocation, adoption, research, and zoos and museums). The costs for the maintenance of tortoises found during the survey and removal process depend directly upon the number of tortoises collected. These costs range from nearly zero if no tortoises are collected or accepted from the public to over $14 million for a 30-year program if survey and removal is required throughout the county and animals are maintained in captivity. If Section 7 tortoises are included in the required survey and removal process, an additional

6,000 animals would be collected, requiring at least another $4 million to maintain these animals in captivity.

Euthanasia

Under the Short-Term HCP, every reasonable effort is made to place tortoises delivered to the transfer facility; euthanasia is to be used only when no other feasible option is available. To date no healthy tortoises have been euthanized under this program. However, the issue of tortoise euthanasia has been a point of considerable conflict and debate. A number of articles have appeared in local newspapers concerning this issue. To much of the public, even the possibility of healthy tortoises being euthanized seems completely inconsistent with the overall aim of the program to protect and preserve this threatened species and is at odds with the substantial time and resources invested in the program. Others object strongly on humanitarian grounds.

In response to this public concern and opposition, the County Commissioners passed a resolution on September 17, 1991 which directed the I&M Committee to:

- Seek placement efforts in addition to adoption to preclude exercising the euthanasia option for healthy tortoises;

- Encourage the USFWS to give swift approval of translocation and research plans as recommended by the I&M Committee that preclude the use of tortoises for biomedical experimentation purposes; and

- Urge community interest in adopting healthy tortoises.

The net effect of this resolution was to strongly discourage the euthanasia of any healthy tortoise or any tortoise that could not be positively diagnosed as diseased during the remaining permit period and to obligate the County to care for and maintain any tortoises or their progeny that could not be adopted or otherwise placed for as long as that tortoise lived. Tortoises often live for more than 50 years.

d) Public Information and Education Program

The Short-Term HCP provides $25,000 per year to conduct a public information and education program in the permit area to (1) educate local residents about the short-term permit and HCP, (2) promote the use of the tortoise hot line and collection service, (3) provide education materials on survey and removal protocols, (4) promote tortoise adoption programs, and (5) promote a better understanding about the needs of the desert tortoise and its habitat.

Despite efforts to increase the public's understanding about the issues concerning the desert tortoise and the short-term permit and HCP, more work needs to be done. For example, many people still do not understand that in Clark County the loss of habitat due to development and associated human activities is the main threat to the desert tortoise and that this threat cannot be avoided by collecting the tortoises and moving them somewhere else. The Short-Term HCP permit amendment and extension provides an additional $100,000 for the public education effort.

2) Conclusions Drawn from Short-Term HCP Measures to Minimize and Monitor Impacts

Grappling with the problems discussed above, the consensus of the Short-Term HCP I&M Committee and TAC was that (a) the existing survey and removal process does little to contribute to the recovery of the species in the wild; (b) without a satisfactory alternative disposition option, the costs associated with the maintenance of collected tortoises and their progeny as a result of a mandatory collection process are very expensive and make significantly less money available to be spent on conservation measures for the recovery of the wild populations; and (c) a public information and education program that teaches responsible use of the desert will positively affect the long-term existence and recovery of the desert tortoise.

In addition, public reaction to a program which first provides that tortoises must be collected from development sites only to be then either killed or held in captivity for the balance of their lives has been extremely negative. It makes no sense to the public to go to all the trouble and expense of collecting these tortoises from development sites, and then to spend even more money euthanizing them or holding them as captives in perpetuity. However, some segments of the population believe that desert tortoises should be collected but not euthanized.

Thus, after long, difficult, and continuing discussion among all of the interest groups, the Steering Committee for the Clark County Desert Conservation Plan concluded that the problems and costs associated with the Short-Term HCP minimization and monitoring requirements outweigh the benefits of the program and that the conservation plan should include minimization and monitoring measures which result in:

a. Spending more money on recovery of the species in the wild and less on tortoises removed from development properties;

b. Reducing the potential for some displaced tortoises to get back into the wild population and possibly spreading URTD to healthy tortoises;

c. Reducing the need to euthanize collected tortoises;

d. Pursuing translocation programs which provide a sanctuary for displaced tortoises and which may be beneficial in designing future translocation programs which may become necessary in the recovery of the species; and

e. Developing a public information and education effort that attempts to teach children and the general public to respect, protect, and enjoy the desert ecosystem and informs them of the terms and conditions of the Clark County Desert Conservation Plan.

3) Clark County Desert Conservation Plan Measures to Minimize and Monitor Impacts of Take

The measures outlined below will minimize the impact of incidental take by reducing the probability of tortoises from the urban and suburban portions of Clark County from being reintroduced into the wild, healthy tortoise population. These measures also provide a way to use reasonable and prudent means to remove many, although not all, tortoises from harm's way and to maximize efforts to place them in translocation, zoo, education, research, and adoption programs. The public information and education program is intended to attempt to teach children and the general public responsible use of the desert ecosystem and thereby effectively protect the biological resources within that ecosystem for future use.

The measures set forth in this section to minimize and monitor the impacts of take are intended to replace and supersede in their entirety those which were included in the Short-Term HCP.

a) Tortoise Pick-up

The Clark County Desert Conservation Plan will provide a county-wide tortoise pick-up service to deal with desert tortoises which are displaced by development or appear to be in harm's way within urban areas. This service will be available to developers who, although not required, voluntarily survey for and remove tortoises from their property prior to disturbance. This service may also be used by those who find a tortoise wandering near urban development (e.g., in a street or vacant lot).

The plan will encourage the public through its information and education program not to handle desert tortoises, especially those encountered in the wild. However, this plan recognizes that some people may nevertheless wish to rescue desert tortoises from what may appear to be harmful circumstances. To deal with this concern, the Desert Conservation Plan will provide a pick-up service.

The tortoise pick-up service will include a hot line, collection service, and tortoise transfer/holding facility. Funds for the pick-up service will be provided by the Desert Conservation Plan. It is anticipated that the cost of the service will be approximately $110,000 per year, in 1994 dollars. Administration of the service and the contracts necessary to implement this requirement shall be the responsibility of the Plan Administrator, as described hereinafter. The Plan Administrator shall also include in the annual report to the service the status of the pick-up service and an accounting of all funds expended for this purpose.

Anyone encountering a live tortoise and wishing to remove the animal from harm's way must adhere to the following guidelines:

1. If live tortoises are encountered, they may not be handled unless there is a good faith belief that they are in harm's way. Under no circumstances may they be taken for private use; they may be moved from harms way for up to 1000 feet from the point of contact, but must not be transported to be released into the open desert; nor may they be moved onto adjacent property without the consent of the owner of that property. If unable or unwilling to move the tortoise pursuant to the foregoing rules, and the person encountering the tortoise nevertheless believes that the tortoise is in harm's way and should be moved, the pick-up service must be utilized.

2. If tortoises are held for the pick-up service, they must be handled in a humane and careful manner. Animals must be lifted slowly and fully supported in an upright position (as it normally stands on the ground) at all times. If a tortoise is found on its back, it should be righted immediately with a slow and gentle motion.

3. While waiting for the pick-up service, tortoises should be kept in a safe, confined, shady location (e.g., placed in a location from which escape is not possible, where shade is available, and where there is no danger from aggressive dogs; or placed in a deep but ventilated box with a lid and kept cool). The pick-up service will not search for tortoises.

4. The pick-up service hot line should be called as soon as possible (within 4 hours). If the call is from Las Vegas Valley or Boulder City, the staff will return the call within 4 hours and pick up the tortoise within 24 hours. If the call is from outside Las Vegas Valley or Boulder City, the staff will acknowledge the call within 4 hours and arrange for collection no later than the end of the next working day.

5. There will be no fee charged for tortoises picked up and/or accepted by the transfer/holding facility.

b) Transfer/Holding Facility

1. All live tortoises removed pursuant to the terms of the Section 10(a) permit are to be delivered to the transfer/holding facility.

2. Until otherwise approved by the USFWS and NDOW, the transfer/holding facility shall be the Desert Tortoise Conservation Center.

3. Upon delivery of a tortoise to the transfer/holding facility, an authorized representative of the facility will record the acceptance of the tortoise and shall at all times keep accurate records of the date of receipt, ultimate disposition, and such further information as the USFWS and NDOW may, from time to time, require. The information thus collected and recorded shall be delivered to the County on a monthly basis.

4. Each tortoise admitted to the transfer/holding facility will be marked for identification as prescribed by the USFWS and NDOW, including the insertion of a transponder for all animals that are not euthanized immediately due to injury or apparent illness.

5. All tortoises collected as a result of the pick-up program shall be kept at the transfer/holding facility until otherwise utilized or placed as provided in this plan and approved by the USFWS and NDOW.

6. The transfer/holding facility will have capacity for approximately 250 tortoises depending upon size and gender of the population being held.

7. All tortoises shall be kept and maintained at the transfer/holding facility in a clean, orderly, and humane manner until they can be utilized or placed according to the guidelines contained in this section.

8. Accurate records will be kept on all tortoises admitted to and discharged from the holding facility. Summaries of these records and other information requested will be submitted to Clark County and the USFWS each month. The County will compile the records and submit them to the USFWS in their annual report as hereinafter set forth.

9. Animals that arrive at the facility injured or that show overt signs of disease will be euthanized and disposed of humanely.

10. Animals will be held at the facility and made available for beneficial uses such as translocation studies and programs, research, education, zoos, museums, or other approved programs.

11. There is no charge for tortoises taken to the transfer/holding facility.

c) Tortoise Placement Efforts

Disposition of collected tortoises will be the responsibility of the operator of the transfer/holding facility who shall act only in conformance with the terms of this plan and the explicit directions of NDOW and the USFWS, who will screen and authorize requests for tortoises for the following options: translocation programs, adoption programs, research, zoos and museums, educational facilities, or other appropriate uses. It is estimated that up to $30,000 per year may be expended from the plan budget to facilitate the placement of tortoises, including payments to adoption groups. The Clark County Desert Conservation Plan will use the following guidelines for the placement of collected tortoises:

1. Every reasonable effort will be made to place tortoises delivered to the transfer/holding facility.

2. Collected tortoises will be placed in projects and programs only with the explicit authorization of NDOW or USFWS; the tortoise transfer/holding facility will not have the authority to make such decisions.

3. An official certificate will be developed by NDOW and the USFWS so recipients of tortoises will have proof of legal acquisition and/or possession.

4. A record of the final disposition of the collected tortoises will be maintained by the operator of the transfer/holding facility and provided to the County and the USFWS on a monthly basis.

5. To the extent that tortoises collected from disturbed lands can be used in research, the conservation plan encourages state and federal resource managers to consider them.

The Plan Administrator shall include in the annual report to the USFWS, a description of the disposition of all tortoises collected, and an accounting of the costs, if any, to the plan.

d) Translocation

The Clark County Desert Conservation Plan stands prepared to fund a translocation program and/or research project which has received the approval of the USFWS and NDOW.

In April of 1994, it established a subcommittee consisting of representatives from BLM, NDOW, NPS, National Biological Survey (NBS), and USFWS to select a possible site or sites for a translocation effort, to attempt to reach agreement regarding the goals and

objectives of a translocation program, and to prepare a draft request for proposals to be submitted to the scientific community for response. The subcommittee made a preliminary report to the Steering Committee in May, wherein they indicated that it was their belief that the translocation program should have two goals: (1) To establish a location for displaced tortoises where they could live out their lives in suitable habitat; and (2) to utilize the location and the delivery of tortoises to that location as a research project to evaluate various translocation techniques. The subcommittee also indicated that they had tentatively concluded that the Goodsprings area in the southeastern portion of the county, west of Interstate 15 and east of the Spring Mountains, would be an appropriate translocation site. The Steering Committee had several questions about alternative sites, the possible requirement for fencing the entire area, the desirability of segregating a research area within the sanctuary, and an estimated cost of the project. The subcommittee was directed to take the issues raised at the meeting into consideration and to report back to the Steering Committee during June of 1994.

The Plan Administrator shall be responsible for pursuing input for a translocation program and/or research project, shall institute a Request for Proposal competitive process to select a contractor to undertake the program and project, and shall, with the contractor chosen, work to secure approval from the USFWS and NDOW. In addition, the Plan Administrator shall include in the annual report to the USFWS, the status of relocation efforts, and an accounting of all funds expended on the program.

Up to five percent of the endowment fund may be expended from the principal of the endowment fund with the concurrence of the USFWS and the Clark County Board of Commissioners. However, expenditures from the principal may not jeopardize the existence of the fund for the term of the plan and its primary purpose of providing funds to mitigate the loss of tortoise habitat and to contribute to the survival of desert tortoise populations.

e) NDOT Rights-of-Way

Normal Maintenance Activities

To minimize any impacts on the desert tortoise, NDOT maintenance personnel will perform the following tasks while performing normal maintenance activities. Mowing of vegetation will only be allowed from June 16 through February 28. When mowing in thick shrubbery, a worker will walk in front of the mower and inspect for the presence of the desert tortoise or burrows. Also, NDOT will stay within its right-of-way during all routine maintenance, as identified in Table 6. Any moving of a tortoise will only be done by trained NDOT personnel. Monitoring will be coordinated through NDOT's Environmental Services Division and will include reports of any takes by the maintainers. Funding to implement the mitigation measures outlined in this habitat conservation plan will be provided by NDOT.

TABLE 6
ROUTINE NDOT MAINTENANCE ACTIVITIES

Roadway Surface Repair and Maintenance
- Planning and scheduling
- Base and surface repair
- Surface patching - hand
- Surface patching - machine
- Surface patching - spot seal
- Seal coat - sand
- Seal coat - flush
- Crack filling
- Heater planing
- Seal coat - chips
- Cold planing
- Temporary patching of P.C.C. pavements
- Permanent patching of P.C.C. pavements
- Paved shoulder repair
- Crack and joint sealing
- Repairing miscellaneous concrete appurtenance
- Maintain tunnels

Chip Seals
- Roadway grade improvements
- Channel excavation and drainage grading
- Install drainage structures
- Bituminous surface treatment
- Erection of new traffic signs

Roadside Maintenance
- Cleaning culverts
- Cleaning culvert openings and drop inlets
- Dressing and shaping ditches
- Cleaning ditches
- Culvert repair and replacement
- Fill slope repair
- Unpaved shoulder slope maintenance (blading)
- Vegetation control (mowing, flailing, burning, etc.)
- Vegetation control (chemical weed spray)
- Vegetation control (hand)
- Removal of storm deposited debris and drift material
- Remove debris, litter, and trash
- Empty litter barrels
- Sweeping or flushing: traveled way, shoulders, and paved
- Ditches
- Remove roadway debris
- Urban sweeping: pick-up broom only
- Maintenance of rest stops
- Maintenance of roadside parks
- Maintenance of landscape areas with turf
- Maintenance of landscape areas without turf

TABLE 6
ROUTINE NDOT MAINTENANCE ACTIVITIES
(continued)

Roadside Maintenance (cont.)
- Repair of right-of-way fences and gates
- Maintain cattle guards
- Inspection of right-of-way fences and gates

Traffic Safety Service Program
- Repair and replacement of traffic signs
- Guardrail repair and replacement
- Barrier rail and guardrail painting
- Painting gore lines
- Pavement striping: dashed and solid
- Raised pavement markings (buttons)
- Pilot lining
- Pavement markings
- Roadway lighting operations: highway lighting, bridge, and approach lighting
- Patrolling for protection of public traffic
- Maintenance of guideposts and milepost markers
- Miscellaneous sign maintenance
- Repair or replace impact attenuators
- Road closure
- Snow removal: plowing, blading, application of abrasives and chemicals
- Plowing with rotary snowplow
- Patrolling for snow and ice control
- Installation or removal of snow markers

Structure Maintenance Program
- Maintenance and repair of structures
- Inspection of structures (bridges and culverts)

Stockpile Upon Previously Disturbed Areas
- Aggregate production
- Premix production
- Mixing salt-sand
- Hauling materials
- Purchase aggregate
- Purchase premix
- Purchase plantmix
- Purchase chips

Should NDOT personnel identify a tortoise within the right-of-way during maintenance activities the tortoise will be moved out of harm's way. This will be done by carrying the tortoise 200 to 300 yards from the road and placing the tortoise in an undisturbed area. Burrows inhabited by tortoises will be excavated using hand tools. All burrows found in the maintenance zone will be collapsed to prevent reentry. NDOT staff handling tortoises will have been issued the appropriate state permit from the Nevada Division of Wildlife. Desert tortoises must be handled in a fashion consistent with standards promulgated by the USFWS, from time to time, whether or not they are set forth in this plan.

If tortoises are located within the project site, they will be moved to adjacent suitable undisturbed habitat outside the right-of-way. If suitable undisturbed habitat is not available the tortoises will be moved to the closest acceptable location. Desert tortoises will only be moved within 1,000 feet from the point where they are encountered to ensure that they remain within their home ranges and do not adversely affect other populations. During the summer months, tortoises will be relocated to another burrow or placed under a shrub. If removed from a burrow, the tortoise will be placed in an existing similar, unoccupied burrow. During winter months, tortoises will be placed in an artificial burrow. An artificial burrow will be constructed on public land, adjacent to NDOT's right-of-way, that is approximately the same size, depth, and orientation as the original burrow.

Prior to maintenance activities, a qualified desert tortoise biologist shall advise all workers through an educational program which is consistent with educational requirements as set forth in Section 7 biological opinions issued from time to time by the USFWS, that the area is desert tortoise habitat and that the desert tortoise is a threatened species. In addition, workers shall be advised of the definition of "take," they will be informed that they are responsible for avoiding impacts to desert tortoises, and that potential penalties for take of desert tortoise could be up to $25,000 in fines and six months in prison per violation.

In the event that the USFWS determines, as a result of the periodic reports submitted by NDOT and the County, that normal maintenance or emergency maintenance activities within DWMAs are resulting in significant numbers of desert tortoises being taken (more than 69 per year), it may prescribe maintenance practices different from those set forth herein in order to reduce the number thus taken.

Emergency Maintenance Activities

During emergency circumstances, NDOT will conduct maintenance activities on highways in tortoise habitat in an expedited manner. Emergency situations involve acts of God, casualties, disasters, national defense or security emergencies. During emergency situations, such as flash floods in which the highway is destroyed or

obstructed, NDOT will take immediate steps to contain an emergency in order to protect public safety prior to initiating any form of consultation.

Some emergencies may deposit soil from upland areas onto the roadbed and shoulder areas. This situation may also damage existing edge of roadways or culverts. In this situation, NDOT would work within the shoulder area (predisturbed areas) to remove deposited soil from the roadbed. The roadbed and shoulder would be restored to preemergency conditions and no additional desert tortoise habitat would be disturbed. In the event that the roadbed and shoulder is disturbed by a flood or other emergency, the NDOT road crew may create a detour around the roadbed and over undisturbed desert tortoise habitat. Prior to any disturbance of desert tortoise habitat, the NDOT road crew would survey the area for the presence of any desert tortoises. Should a desert tortoise be found, it would be removed from harm's way. Mitigation will include payment of the $550/acre development fee to Clark County. In addition, NDOT will recontour and rehabilitate the disturbed desert tortoise habitat upon roadway clearance and repair.

Construction Activities

Prior to any disturbance of desert tortoise habitat, construction sites associated with road-widening, new highway construction, and establishment and operation of material sites will be surveyed by NDOT biologists for the presence of any desert tortoises. Should a desert tortoise be found, it would be removed from harm's way following the procedures described above for normal maintenance activities. Material sites and construction sites will be fenced subsequent to tortoise survey and translocation to avoid impacts to tortoises which might wander back onto these sites. Fencing will be maintained during the time that construction or operational activities continue on these sites. Construction sites need not be fenced when no tortoises or tortoise sign are found within the construction area or within 400 meters of the construction area.

f) Project Reporting Process

For all projects in the permit area and prior to authorizing any land disturbance which requires a permit, or, in the case of NDOT, prior to disturbing land within its permit area, a project land disturbance report must be completed by the permittee (the County, the Cities, or NDOT), which will set forth the location of the land disturbed, the number of acres disturbed, and the amount of the fee collected or paid. The forms will be sent to the County each month, and the County shall summarize the information thus received in its annual report to the USFWS. The Plan Administrator shall be responsible for the administration of this requirement.

1. It is the responsibility of the cities, the county and NDOT to complete the land disturbance report and send it to the Plan Administrator. These reports must be provided in electronic data format appropriate for data base files based on

assessor's parcel number or such other basis which may be approved by the Plan Administrator.

2. Reports sent to the Plan Administrator will be used to compile and complete an annual report which will summarize the location and amount of land disturbance and development fees collected.

3. Monitoring of NDOT maintenance activities will be coordinated through NDOT's Environmental Services Division and will include reports of any incidental take that occurs from maintenance activities.

   An annual report will be submitted in January of each year to the County and will include all activities involving desert tortoise handling. The NDOT report will be included in the Annual Report prepared and submitted by the Plan Administrator.

4. All reports submitted by the cities, county and NDOT as well as the Plan Administrator shall be subject to audit by USFWS.

5. If any permittee fails to accurately report permitted land disturbances within its jurisdiction, and to collect and report an accurate amount of development fees collected, USFWS may suspend or revoke the 10(a) permit within the jurisdiction of the defaulting permittee.

g) Public Information and Education Program

The Clark County Desert Conservation Plan will provide $75,000 per year (1994 dollars) toward developing and implementing a public information and education program. In addition, a public information and education subcommittee will be appointed by the I&M Committee to assist in the formulation of the program. The program will have a threefold objective:

1. Inform the public of the terms of the Section 10(a) permit.

2. Enlist the public to support the measures contained in the Desert Conservation Plan to minimize and mitigate impacts of take.

3. Encourage the general public to respect, protect, and enjoy the desert tortoise and the ecosystem in which it lives, and to suggest to those who utilize the desert and the DWMAs actions and activities which may enhance recovery of the tortoise and its habitat.

The audiences to be targeted by the education and information program will be:

1. The general public.

2. Civic groups, urban and rural.

3. Professional organizations.

4. Specific interest groups, e.g.. miners, ranchers, OHV enthusiasts, developers, environmentalists. and hunters.

5. Children's groups, both in and out of schools.

The public information and education program will focus on the following methods to convey its messages:

1. It will continue to utilize the telephone hotline (383-TORT) that addresses numerous timely concerns that the general public has regarding tortoises, including procedures to be followed by developers, the tortoise pick-up service, adoption, pertinent laws, and what to do if take is witnessed.

2. Another telephone hotline will be available to contact the pick-up service to collect stray tortoises and those from development sites.

3. Volunteers with expertise and knowledge about the desert ecosystem will be available for speaking engagements when requested by local governments, community organizations, schools, clubs, and other such groups.

4. Speakers and educational materials will be provided to local communities to inform local citizens of the important portions of the conservation plan affecting their area.

5. Radio and television public service announcements have been written and will be revised in keeping with other campaign materials.

6. Pending approval of the Clark County School District, funds will be available to pay for the development of a curriculum augmentation program of the kind presently being used in the school system to address specific environmental issues; for example, Project Wild sponsored by the Nevada Division of Wildlife. The program will produce a curriculum and materials, train teachers and support in-class instruction. Such a program will be developed and implemented by the University of Nevada Cooperative Extension Service in cooperation with the

Clark County School District. Subject matter will emphasize the biology and conservation of the tortoise and generally promote an appreciation of our desert environment. Workshops will be held for teachers to prepare them to use the curriculum guides and other materials which will be developed. Credit received from participating in the workshops will help teachers to fulfill requirements needed periodically to maintain their teaching credentials. Teachers will receive funded scholarships to attend the workshops. The desired arrangement is for one teacher from each of the approximately 130 schools within the District to participate in these workshops. Workshop graduates will "in-service" the project in their respective schools. The course will be taught periodically, depending upon the turnover rate of graduate teachers. In addition, videos and portions of the curriculum guides could be used for youth groups outside of the classroom setting.

In addition, the I&M Committee will evaluate the following methods used or proposed during the Short-Term HCP to determine their cost effectiveness before use in this plan.

Outdoor Billboards. Billboards that share a common theme with other campaigns (for example, radio spots and videos) of how to help protect the tortoise population. The billboards are intended to visually reinforce messages heard on the radio or read in local industry/association announcements.

Radio. Thirty- to 60-second radio spots using entertaining ways of describing desert tortoise conservation measures and what the general public can do to help.

Videos for Distribution. One video, already in production focuses on the life of the desert tortoise as it pertains to current threats, the reason and value of the Clark County Desert Conservation Plan, and ways the public can benefit from DWMAs and help to protect them. Others may be developed.

Regional Newspapers. Review-Journal mini-page insertions that include copy and artwork for a series of educational columns/activities on the desert tortoise and preservation efforts. In addition, the series may be expanded and utilized for an educational handout for children.

Organizational Newspapers. Industry/association advertisements that include copy and artwork for desert tortoise protection education ads to be run in industry and association newspapers and newsletters such as the Southern Nevada Home Builders' Silver Spike and the Blue Ribbon Coalition newsletter (off-highway-vehicle users).

Displays at Public Events. Permanent and portable displays that focus on the threats to the desert ecosystem and especially the desert tortoise and the ways the public can help protect them from these threats.

Pamphlets and Brochures for General Public and Specific Targets. Pamphlets and brochures to stress important conservation concepts such as dos and don'ts in DWMAs; how the public can help protect the desert today and for the future; adoption as an alternative to poaching; and how to avoid penalties related to the ESA.

Kiosks and Printed Guides for DWMA Visitors. Each DWMA may have a kiosk. In cooperation with the BLM, we will develop materials that inform visitors of the regulations, purpose, and important locations within the DWMA.

The Desert Tortoise Conservation Center and Red Rock Canyon National Conservation Area. Educational programs may be developed at the DTCC. Additional educational programs may also be developed at the Red Rock Canyon National Conservation Area Visitor's Center.

The Plan Administrator shall be responsible to coordinate Public Information and Education efforts, convene meetings of the subcommittee, assist in the formulation and evaluation of Public Information and Education concepts, and to administer the program. In addition, the annual report prepared by the Plan Administrator shall describe each public information and education activity undertaken by the plan and shall provide an accounting of all funds paid out by the plan for public information and education activities.

D. Measures to Mitigate Impacts of Take

1) Lessons Learned from Short-Term HCP Measures to Mitigate Impacts of Take

The essence of the Short-Term HCP mitigation program was to take money raised through development fees imposed in the urban areas and spend those funds to conserve and protect desert tortoise habitat in more remote areas.

The Short-Term HCP mitigation plan provided for the establishment and appropriate management of one or more DWMAs comprised of Category I and II desert tortoise habitat as determined by the BLM which had also been designated Potential Tortoise Management Areas (PTMAs) in the short-term plan.

The process of establishing a DWMA necessarily began with the purchase of grazing privileges from willing sellers because the short-term plan provided that grazing had to be eliminated from an area in order for it to qualify as a DWMA. However, the terms of the existing RMP made it legally impossible for the BLM to terminate or cancel those privileges. Therefore, the short-term plan offered to purchase those privileges from willing sellers. After Clark County acquired the grazing privileges, BLM could and did agree to grant those privileges nonuse status pursuant to its existing regulations.

After grazing privileges had been acquired within an area which the Short-Term HCP had designated as a PTMA, the BLM and NPS then instituted certain management actions to conserve and protect the habitat including, but not limited to, restricting competitive and commercial OHV events and restricting casual OHV uses to designated roads and trails.

Due to the record growth and development occurring in the Las Vegas Valley during the past five years, the mitigation fee of $550 per acre of development and the ordinances to enforce the fee, together with a $3 million loan from the State of Nevada, have generated over $9 million for conservation purposes, $3 million more than the $6.075 million projected as necessary to fund the Short-Term HCP mitigation program.

In addition to other uses, the mitigation fee was used to purchase the grazing privileges as noted above and to establish a $3,125,000 trust fund for the long-term management and monitoring of conserved habitat. It was anticipated that at an eight percent annual interest rate, the trust fund would generate about $250,000 per year in perpetuity to supplement state and federal financing of the management of the Piute-Eldorado DWMA. However due to declining interest rates, income expectation from the trust has fallen below that number. Therefore, to offset those low interest rates, the permittees

have proposed to increase the trust fund to $4.125 million as partial mitigation for the one year extension of the Short-Term HCP and permit. The current fund amounts to more than $3.3 million and, as yet, income has been allowed to accumulate and has not been used to finance any of the expenses of the Short-Term HCP program. All payments to resource managers and contractors have been made directly from development fee receipts in order to allow the trust fund to grow.

Prior to issuance of the long-term Section 10(a) permit sought by this plan more than 500,000 acres of desert tortoise habitat will have been set aside and managed by the federal land managers primarily for the survival and recovery of the species as a direct result of this habitat conservation effort within DWMAs. Grazing privileges affecting over 900,000 acres in the southern portion of Clark County have been purchased (including 500,000 acres within DWMAs), together with the water rights, improvements and nonfederal real estate, attendant to cattle operations.

The 500,000 acres of conserved habitat includes 400,000 acres of conserved habitat established during the three-year permit period and an additional 140,000 acres of lands located in the Lake Mead National Recreation Area provided as mitigation during the one-year amendment and extension.

Even though Clark County is in compliance with all of the terms and conditions of the Short-Term HCP and permit, implementation of many of the provisions is dependent on policies and actions by persons, entities and agencies over which the HCP permittees have no control. For example, the I&M Committee and its acquisition agent, the Nature Conservancy has been unable to purchase grazing privileges from owners in the northern portions of the County. Many members of the ranching community concluded that it was not in their interest to be included in the long-term planning process and chose to challenge a 1991 Section 7 Biological Assessment issued by the BLM, which restricted grazing, through the Interior Board of Land Appeals and the courts. The Section 7 controversy and the Interior Board of Land Appeals and court actions which followed definitely put a strain on the "willing seller/willing buyer" process. The owners of privileges in areas deemed essential to establish a northern DWMA thereafter refused to discuss sales, thus making it virtually impossible to establish a northern DWMA as envisioned in the Short-Term HCP.

In addition, while the Cities and the County expended slightly more than $1 million to acquire five grazing allotments, water rights, range improvements, and base property from willing sellers in the southern portion of the county, amounting to more than 900,000 acres, and was accorded nonuse status for those privileges, the nonuse designation is valid for only two years. Thereafter, unless the BLM amends its RMP to eliminate grazing from the Piute-Eldorado DWMA, the permittees will have to apply annually to the BLM to continue holding the allotment in nonuse or otherwise any

authorized grazing operator will be able to apply for and use the allotments for grazing even though the permittees own the allotment rights. Similarly, until the BLM amends its RMP to allow permanent closure, roads and trails which have not been designated by the BLM as open to casual OHV use will continue to be designated closed only on a temporary and emergency basis. The Stateline RMP will not be finalized until early 1995, and there is no legal assurance that either the grazing or road closure issue will be included. Furthermore, final adoption of the RMP is subject to court challenge which could take several years to resolve.

Finally, as the Short-Term HCP was being implemented and the long-term plan was being debated among steering committee members, the USFWS, in a sense preempted the process by, in separate actions, publishing the Draft Recovery Plan for the desert tortoise and by designating Critical Habitat for that species. The Draft Recovery Plan set forth those measures, which in the opinion of the USFWS and the members of the Recovery Team, are necessary to assure the survival and recovery of the species in the wild. The designation of Critical Habitat established those areas of the County where, in the opinion of the USFWS, habitat must be conserved and protected in order to assure the continued existence of the species. Thus, the Long-Term HCP steering committee, as well as the federal land managers, have been told *what* the USFWS believes should be done to conserve the species and *where* to do it.

2) Conclusions Drawn from Short-Term HCP Measures to Mitigate Impacts of Take

After almost three years of observing Short-Term HCP implementation, and after publication of the Draft Desert Tortoise Recovery Plan and the final designation of Critical Habitat, the Steering Committee for development of the Clark County Desert Conservation Plan concluded:

a. Mitigation should be consistent with measures recommended in the Draft Desert Tortoise Recovery Plan.

b. Mitigation measures should be undertaken in areas designated as Critical Habitat.

c. Mitigation measures proposed by the Desert Conservation Plan should be less dependent on variables not controlled by the permittees and should be able to be implemented almost without regard to decisions made by persons or entities not controlled by the permittees.

3) Clark County Desert Conservation Plan Measures to Mitigate Impacts of Take

The mitigation and conservation measures discussed in this section include the continuation and augmentation of many measures proposed and implemented during the Short-Term HCP as well as several additional measures all of which will be funded during the entire 30-year term of the proposed permit. The mitigation measures proposed in this Desert Conservation Plan are intended to supersede and replace those set forth in the Short-Term HCP and its extension. The mitigation measures which will be implemented during the term of the Desert Conservation Plan include:

a. The contribution of up to $1.325 million per year (but in no event less than $1 million per year) in 1994 dollars to finance conservation measures within Critical Habitat for the term of and beyond the permit. Specific conservation measures to be funded include:

- Additional law enforcement.
- Designation, signing, and closure of roads and the rehabilitation of habitat.
- Construction and maintenance of tortoise barriers along roads and other linear features.
- Tortoise inventory and monitoring activities.
- Multiple species inventory and protective measures within Clark County.

b. The availability of funds to purchase grazing privileges and other real property interests. In order to qualify, contracts or options to purchase in favor of the County must be entered into within two years after the long-term permit is issued, and the money must be actually expended within five years after the long-term permit has been issued. Grazing privileges which have been canceled will not be purchased. However, in the event the decision canceling any grazing privilege is under review by the Interior Board of Land Appeals or any court, that grazing privilege shall still qualify for purchase.

c. The acquisition of a conservation easement affecting over 85,000 acres of nonfederal land within the Piute-Eldorado DWMA to be managed to conserve and protect the desert tortoise and its habitat.

d. The maintenance and defense of grazing privileges within DWMAs acquired during the Short-Term HCP to assure that those privileges continue to be accorded nonuse status by the BLM.

e. The maintenance, operation and management of lands and water rights located within DWMAs, which it has acquired, to conserve and protect the desert tortoise and its habitat.

f. The appointment of an Implementation and Monitoring committee to assure that the terms and conditions of the Section 10(a) permit are being fulfilled and to provide a forum for comments regarding management decisions and budget requests received from the resource managers.

g. The imposition of a $550/acre development fee for all private lands within Clark County which are disturbed during the period of the permit.

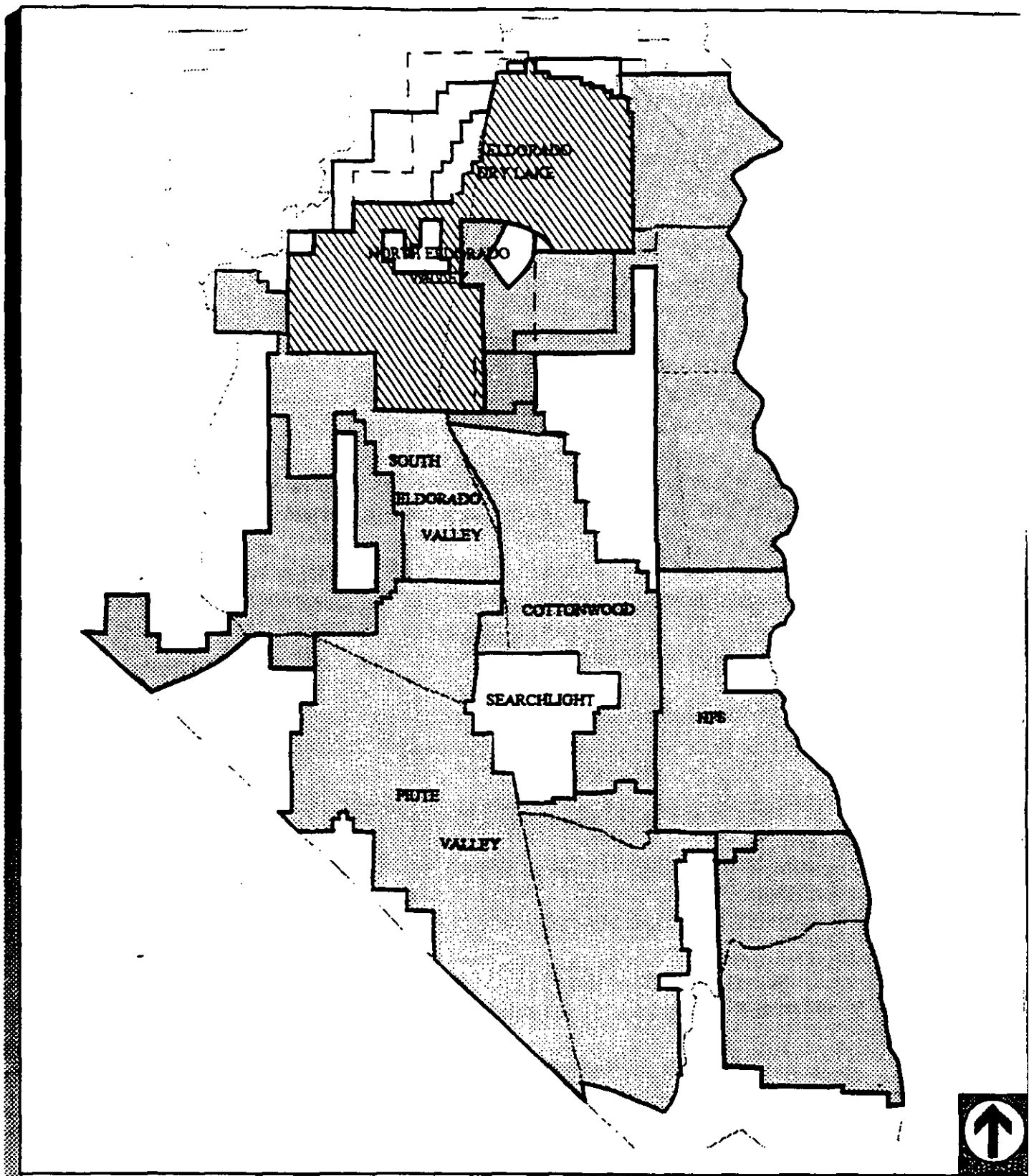
h. The imposition of a $550/acre fee for NDOT activities associated with road widening and new construction and establishment of material sites which result in disturbance of desert tortoise habitat outside of DWMAs. Construction activities within DWMAs will not be covered by the Section 10(a) permit.

i. NDOT will locate a single material site of approximately 720 acres within the Piute-Eldorado DWMA, located in Sections 29, 30, and 32, Township 28 South, Range 62 East, as shown on Figure 12, to meet its needs within the Eldorado and Piute valleys. USFWS and BLM will consider deletion of that location from the Piute-Eldorado DWMA. NDOT, BLM, and USFWS will meet and confer in good faith regarding the relinquishment of other material sites within the Piute-Eldorado DWMA and shall report the results of such conference to the I&M Committee prior to January 1, 1995.

j. Certain material site withdrawals, unused and unneeded by NDOT, will be turned back to BLM, based upon future negotiations.

k. The creation of an endowment fund which will assure that up to $1.325 million and in no event less than $1 million per year in 1994 dollars will be available to finance conservation measures within Critical Habitat during the permit period and beyond.

This Desert Conservation Plan does not include a specific budget for each conservation measure it intends to implement during the term of the permit, although it does include amounts which, under current conditions, are believed to be reasonable and appropriate for the conservation measure proposed. It is intended that the biennial management plan



Boulder City Conservation Easement

Conserved Habitat (Federal Lands)

Grazing Allotment Boundary

NPS Boundary

DWMA Subarea Boundary

Eldorado Valley Act Lands Boundary

FIGURE 12

Conserved Habitat in the Piute-Eldorado DWMA

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and budgeting process, after review and approval by the USFWS and the Clark County Commission, all as described hereinafter, will specify which management and conservation measures are most likely to provide for the conservation, survival and recovery of the species. Specific amounts expended for each conservation activity may vary from year to year depending on need and the consent of the USFWS and the Clark County Commission. Additional conservation measures may be developed during the term of the plan, and after approval by the USFWS and the Commission may be financed. However, unless and until modified by the biennial management plan and budgeting process, the following mitigation measures have been given the highest priority by the Steering Committee and shall be implemented:

a) Increased Law Enforcement

The Recovery Plan identifies law enforcement of rules and regulations in DWMAs as one of the most important management activities that will contribute to the survival and recovery of the desert tortoise. Specifically, portions of the Piute-Eldorado DWMA and other areas may have serious problems with vandalism, collection of desert tortoises, and release of captive tortoises, and irresponsible OHV use, all of which contribute to high desert tortoise mortality rates (USFWS 1993). The Piute-Eldorado DWMA is especially vulnerable due to its proximity to Searchlight, Laughlin, and Boulder City and because major roads (Highway 95, State Route 163, Nipton Highway, and existing utility rights-of-way) cut through it providing easy access throughout the area. Regular and frequent patrols of DWMAs by law enforcement personnel will be essential, particularly in the Piute-Eldorado and proposed Mormon Mesa DWMAs.

Prior to implementation of the Short-Term HCP, public lands managed by the BLM and NPS were not regularly patrolled for protection of tortoise habitat. Law enforcement was limited primarily to responding to specific complaints such as trespass and cactus theft. Pursuant to the Short-Term HCP law enforcement efforts have been successful at reducing human impacts in the Piute-Eldorado DWMA; however, it is likely that even more intensive efforts will be required as the Las Vegas Valley population increases. Experience with implementing the Short-Term HCP has led the Steering Committee to conclude that law enforcement is their most important priority for desert tortoise recovery in southern Nevada.

Regular BLM ranger patrol of the Piute-Eldorado DWMA began in October 1991 as a result of funds made available from the Short-Term HCP. Most of the actions of the ranger have centered on enforcing existing rules and regulations regarding public use of BLM lands including trespass, OHV use, plant theft, endangered species protection, hunting use, permit use, public information, and investigations of reported suspicious activities. Over 60 written warnings and 20 citations were issued in one year. Current funding by the Short-Term HCP for one BLM ranger in the Piute-Eldorado DWMA, including expenses, is between $50,000 and $60,000 per year.

The Clark County Desert Conservation Plan will mitigate the impacts of take by providing funds for from three to four rangers to enforce the rules and regulations established by the BLM and the NPS which are designed to protect the desert tortoise and its habitat within DWMAs and other conserved areas. $150,000 to about $200,000 (1994 dollars) per year will be provided by the Desert Conservation Plan for this purpose and will augment, not replace, existing funding levels of federal land managers available for law enforcement. Funds will be disbursed to the land managers for this purpose pursuant to biennial contracts between Clark County and the land managers.

The Plan Administrator will administer the contracts, meet regularly with the land managers and their respective law enforcement officials, independently evaluate, on behalf of the county, the effectiveness of law enforcement in assisting efforts to provide for the survival and recovery of the species in the DWMAs, and include in the annual report to the USFWS an accounting of all funds expended for law enforcement purposes.

b) Tortoise Barriers for Linear Features

The Recovery Plan states that the construction and maintenance of desert tortoise barrier fencing to protect tortoises and their habitat from vehicles and access provided by major roads (e.g., Highway 95, State Route 163, and Nipton Highway in the Piute-Eldorado DWMA and Highway 93 and Interstate 15 in the proposed Coyote Spring and Mormon Mesa DWMAs) is an important management action which should also be immediately implemented (USFWS 1993). Additionally, underpasses which allow for movements and gene flow within or between the DWMAs should be installed, where necessary, along the fenced areas (USFWS 1993).

At the present time, available barriers which are effective in restricting tortoise passage and which are also consistent with public safety and acceptable to NDOT and the Federal Highway Administration (FHWA) are prohibitively expensive to install and maintain. Under the Short-Term HCP, Clark County, in association with NDOT and FHWA, has solicited proposals to perform studies focused on developing cost-effective barriers to reduce the mortality of tortoises on roadways. The ultimate purpose of this study is to provide data, as well as cost and design information necessary to implement, as quickly as possible, the installation of effective and inexpensive measures to decrease tortoise mortality due to traffic on highways through areas managed for tortoise populations.

After the study proposals have been peer reviewed for scientific validity, one will be chosen and approximately $100,000 will be expended over a period of one year (July/August 1994 to July/August 1995) to determine which sort of barrier is effective to deter tortoises from wandering onto roadways at the least cost of construction and maintenance. Thereafter, and during the first year or so of the Desert Conservation Plan the most promising and economically feasible designs will be field tested.

While the research and field testing activities are proceeding, the Implementation and Monitoring Committee, in consultation with NDOT, FHWA, BLM, and USFWS, will prioritize areas where barriers will be most effective in reducing tortoise mortality. It is anticipated that construction will commence in early 1996 and after the conclusion of the field testing phase in those areas and along those roads given the highest priority.

In addition, in some areas it may be necessary or appropriate to place fences and/or appropriate signage along DWMA boundaries to announce to the public that certain land uses are restricted.

Because of the importance placed on tortoise barriers along roadways and the likely importance of fencing in some areas of the DWMA, the Steering Committee proposes to spend $500,000 (1994 dollars) per year for those purposes. However, for the first year of the permit, it is unlikely that more than $150,000 will be spent because the field testing phase will not be completed until the end of that year. It is also contemplated that less than $500,000 will be spent during the second year of the permit to allow time to gear up for the construction activities and to enter into the required contracts. Money not spent on the construction and maintenance of barriers and fences during the first two years will be allocated to other important conservation activities or retained and spent on barriers and fencing in later years.

The money proposed to be spent for road barriers and fences is intended to be spent in coordination with NDOT, FHWA, BLM, and USFWS and, except as otherwise provided in this plan, is not intended to serve as a substitute for mitigation which might otherwise be required of NDOT or FHWA for activities associated with road maintenance, repair or construction within DWMAs.

In addition, USFWS agrees that Section 7 mitigation funds already paid or to be paid in connection with highway and road activities will be spent in a manner which assists and is consistent with the program of study and construction outlined herein.

Road barriers constructed within NDOT rights-of-way will be maintained by NDOT, although as long-term costs are determined, NDOT retains the right to negotiate cost sharing with the other permittees.

The Plan Administrator shall coordinate and implement all aspects of the road barrier program, including but not limited to the letting of contracts for the field testing phase of the program, coordination with NDOT and FHWA, preparation of biennial budgets or construction and maintenance, and the negotiation and letting of construction and maintenance contracts. The Plan Administrator shall also include in the annual report to the USFWS the status of the barrier program and an accounting of all funds expended thereon.

c) Road Designation, Signing, Closure, and General Rehabilitation

The Draft Recovery Plan strongly supports land management policies which would eliminate commercial and competitive OHV events and limit all vehicular activities to a limited number of designated roads and trails.

As a result of its deliberations, the Steering Committee concurred with the conclusions of the Draft Recovery Plan, but also concluded that it was not opposed to nonspeed, noncompetitive, but organized OHV events on designated roads and trails, even within DWMAs, so long as such events are conducted in a responsible manner, permitted by the federal land manager and do not adversely affect the tortoise and its habitat. The Steering Committee especially does not oppose such events when they involve a beneficial element, such as trash pick-up or desert ecosystem education.

In addition to designating some roads and trails and closing others, the Recovery Plan suggests that surface disturbance in DWMAs should be restored to pre-disturbance conditions (defined as the topography, soils, and native vegetation that exists in adjacent undisturbed or relatively undisturbed areas). This includes such actions as closing access to nondesignated roads and restoring nondesignated roadbeds and access to those roadbeds to their predisturbance state (USFWS 1993). Designation of roads and trails, placement of signs indicating which roads and trails are opened or closed, construction of barriers across those which are closed and rehabilitation of habitat which has previously been disturbed is an ongoing and expensive task, but one which both the Recovery Team and the Steering Committee deem to be very important for the survival and recovery of the species in the wild.

Under the Short-Term HCP, BLM did emergency interim road closure/designations in Piute Valley, Cottonwood, northern Piute Valley (north of Nipton highway), and southern Eldorado Valley The designations were made in close cooperation with the I&M Committee and an I&M road designation subcommittee, which took into account the custom and culture of the area's residents as well as assuring access to popular hunting areas and mining sites. BLM posted signs designating road closures shortly thereafter. Because of BLM regulations, the road closures/designations are only temporary until such time as they are incorporated into BLM's final Stateline RMP proposed to be finalized in early 1995.

All terrestrial vehicular traffic within the Lake Mead National Recreation Area is prohibited except on designated roads. After designation of the TMA under the Short-Term HCP, law enforcement and road signage has been increased to confine traffic to open roads.

The Clark County Desert Conservation Plan will mitigate the impacts of take by funding the efforts of the federal resource managers to designate roads as open or closed within

DWMAs, to actively maintain posted road signs announcing road designations, to develop a priority list of roads and other disturbed areas identified for rehabilitation, and to generally rehabilitate disturbed habitat in DWMAs. Rehabilitated roads are to be monitored for three years to determine success. This funding effort is estimated to amount to about $50,000 to $100,000 (1994 dollars) per year except during the first several years when it is anticipated that additional funds will be required to initiate the program. The following describes the first 3 years road closure activities to be financed under the permit:

Year 1. BLM to designate roads in consultation with the I&M Committee and the local communities involved in the northern DWMAs.

Year 2. The BLM to establish a priority list for physical closures of roads in northern DWMAs and initiate physical closure and rehabilitation activities in Piute-Eldorado DWMA.

Year 3. BLM to begin physical road closure and rehabilitation activities in all DWMAs.

Funds will be distributed to the federal land managers pursuant to biennial contracts with the County. The Plan Administrator will regularly meet and confer with the federal land managers regarding specific plans to implement this requirement and the progress of the federal land managers in implementing the program. In addition, the Plan Administrator shall independently evaluate, on behalf of the County, the effectiveness of the program in assisting in the survival and recovery of the species. Finally, the Plan Administrator shall include in the annual report to the USFWS the status of the program and an accounting of all funds disbursed.

d) Tortoise Inventory and Monitoring

According to the Draft Recovery Plan, monitoring of desert tortoise populations will be crucial to directing future management activities and for determining if desert tortoise populations are stationary, declining, or increasing towards target densities (USFWS 1993). If monitoring indicates that the desert tortoise population within a DWMA is not progressing towards recovery, management within DWMAs will require modification to ensure positive population growth or stability at target density. Monitoring of DWMAs will be the most effective method for evaluating the success of the Clark County Desert Conservation Plan.

The Short-Term HCP provided funds to survey permanent study plots on BLM and NPS lands in the Piute-Eldorado DWMA and in one of the proposed northern DWMAs.

Although a monitoring plan for estimating densities throughout a large area (e.g., recovery unit or DWMA) is included in Appendix A of the Recovery Plan (USFWS 1993), it is currently being reevaluated as to its appropriateness, and it is likely that a revised methodology or methodologies will be developed. The survey methodology used to evaluate DWMAs should (1) assess population trends over large areas, not just in single plots and (2) include randomly selected sample areas, allowing comparisons with standard statistical techniques.

Two examples of hypotheses to be tested by the monitoring plan are (1) H_1—if management afforded by DWMAs is not effective on desert tortoise populations, there will be no significant difference between the densities and trends of populations inside and outside of the DWMAs and (2) H_2—if the road barriers have no effect on tortoise populations, there will be no significant difference between the tortoise densities in areas adjacent to roads with barriers and roads without barriers.

The Clark County Desert Conservation Plan will mitigate the impacts of take by providing funds to inventory and monitor DWMA tortoise populations to determine the level of recovery of the population. This funding is estimated to amount to about $50,000 to $100,000 (1994 dollars) per year. However, during the first several years of the plan, and in order to provide funds for baseline information, as much as $150,000 per year could be made available, if deemed appropriate by the I&M Committee, the Clark County Commission and the USFWS. If funds are provided to state and federal resource agencies for inventory and monitoring purposes they will augment, not replace, existing funding available to the agencies for those purposes.

Before the survey methodology and hypotheses are finalized and funded by the Desert Conservation Plan, they will be reviewed by the state and federal resource managers, the USFWS and independent peer reviewers.

The Plan Administrator will be responsible to pursue, evaluate and implement effective tortoise inventorying and monitoring efforts either through the federal and state resource agencies or independent contractors. In addition, the Plan Administrator, as part of the annual report to the USFWS, shall include the status of the inventory and monitoring process as well as an accounting of all funds expended for that purpose.

e) Multi-Species Protection

The Recovery Plan strongly encourages state and federal resource managers to take a multi-species approach to reserve design and include habitat of other rare or declining species in DWMAs.

In order to reduce the likelihood of future listings of other plant and wildlife resources as threatened or endangered, the Steering Committee has decided to take a proactive

approach to conservation planning in Clark County by funding programs which will inventory the biological resources of Clark County and provide protection for species which appear in danger of extinction. Such an approach should reduce the need to federally list other species of plants and animals in the Mojave region (USFWS 1993), and should provide both direct and indirect benefits to the desert tortoise.

The Clark County Desert Conservation Plan will mitigate the impacts of take of desert tortoise and other sensitive species in the permit area by providing funds to conserve species at risk through ecosystem protection in Clark County. Funds available for this purpose will be approximately $100,000 (1994 dollars) per year; however, during the first several years of the permit up to $250,000 should be made available in order to provide important data for DWMA management as soon as possible. The multi-species program and process to be funded includes the following stages:

1. Prioritize species of concern, with emphasis on those species which are most likely to be in danger of extinction and whose listing could have the most significant impacts upon the economy and lifestyles of the residents of Clark County.

2. Map and inventory areas of Clark County whose management mandates protection of biological resources, including DWMAs managed by the BLM, areas managed by the NPS, USFWS refuges, and state parks. Mapping and inventory efforts should focus on the species of concern as prioritized.

3. Map and inventory other areas of the county for biological resources, especially the species of concern.

4. Consider and investigate the availability of conservation alternatives which do not involve further restrictions on the multiple uses of public lands, including:

   - Purchase and exchange programs
   - Public education
   - Translocation programs
   - Propagation programs
   - Acquisition of conservation easements and agreements

5. Meet and consult with the land managers, the USFWS and the I&M Committee regarding alternatives and direct conservation measures.

6. Consider and fund alternatives and/or direct conservation measures for the species of concern.

The goal is to make the I&M Committee a forum to discuss species which are in need of protection, to analyze conservation alternatives, and to expend money wisely to avoid future listings, if possible.

The Plan Administrator shall be responsible for implementing and coordinating this requirement. Included among those responsibilities shall be to inform the County regarding the status of all species which are likely to be proposed for listing or which have been listed, coordinate meetings to prioritize species of concern, propose specific conservation alternatives and direct conservation alternatives, administer contracts for mapping, inventorying and implementing conservation measures. In addition, the Plan Administrator shall include in the annual report to the USFWS the status of multiple species efforts and an accounting of all funds expended thereon.

f) Purchase and Exchange Programs Affecting Grazing Privileges

The Draft Recovery Plan strongly recommends that cattle and sheep grazing be eliminated from DWMAs, except in those areas within DWMAs which are designated as Experimental Management Zones (EMZs).

Based upon a 1991 Section 7 Biological Opinion (USFWS 1991) which severely restricted grazing in many areas which have now been designated as Critical Habitat and the recommendation of the Recovery Team as set forth above, many believe that the final Stateline RMP will strictly limit or altogether eliminate grazing from DWMAs. However, implementation of the Section 7 Biological Opinion has been challenged in court, and there is no legal assurance about what the Stateline RMP will have to say about grazing. In addition, regardless of what provisions are made with respect to grazing in the RMP, the Record of Decision adopting the RMP is subject to appeal to the Interior Board of Land Appeals and eventually to the courts, which could take several years.

In view of the foregoing, the Steering Committee has decided that the Desert Conservation Plan should stand ready to purchase grazing privileges from willing sellers for a period of two years after the granting of the Section 10(a) permit sought by this plan. The purchase price will be the fair market value at the time of the purchase, determined in the same fashion as utilized during the short-term plan. Funds required for any purchase may be taken from the principal of the endowment fund and are not expected to exceed $1 million. To the extent the plan utilizes nonprofit entities to act as its agent, the provisions of NRS Section 373 shall apply. In no event, however, may withdrawals from the principal of the endowment fund endanger the ability of that fund to meet other conservation measures set forth herein for the entire term of the permit.

In addition, the plan will make funds and its good offices available to facilitate exchanges of grazing privileges within DWMAs for those outside DWMAs and to

facilitate and encourage conversion of existing privileges to fee ownership. For instance, it may be appropriate for the plan to purchase federal lands outside of DWMAs and, instead of purchasing grazing privileges, exchange the land purchased for those privileges.

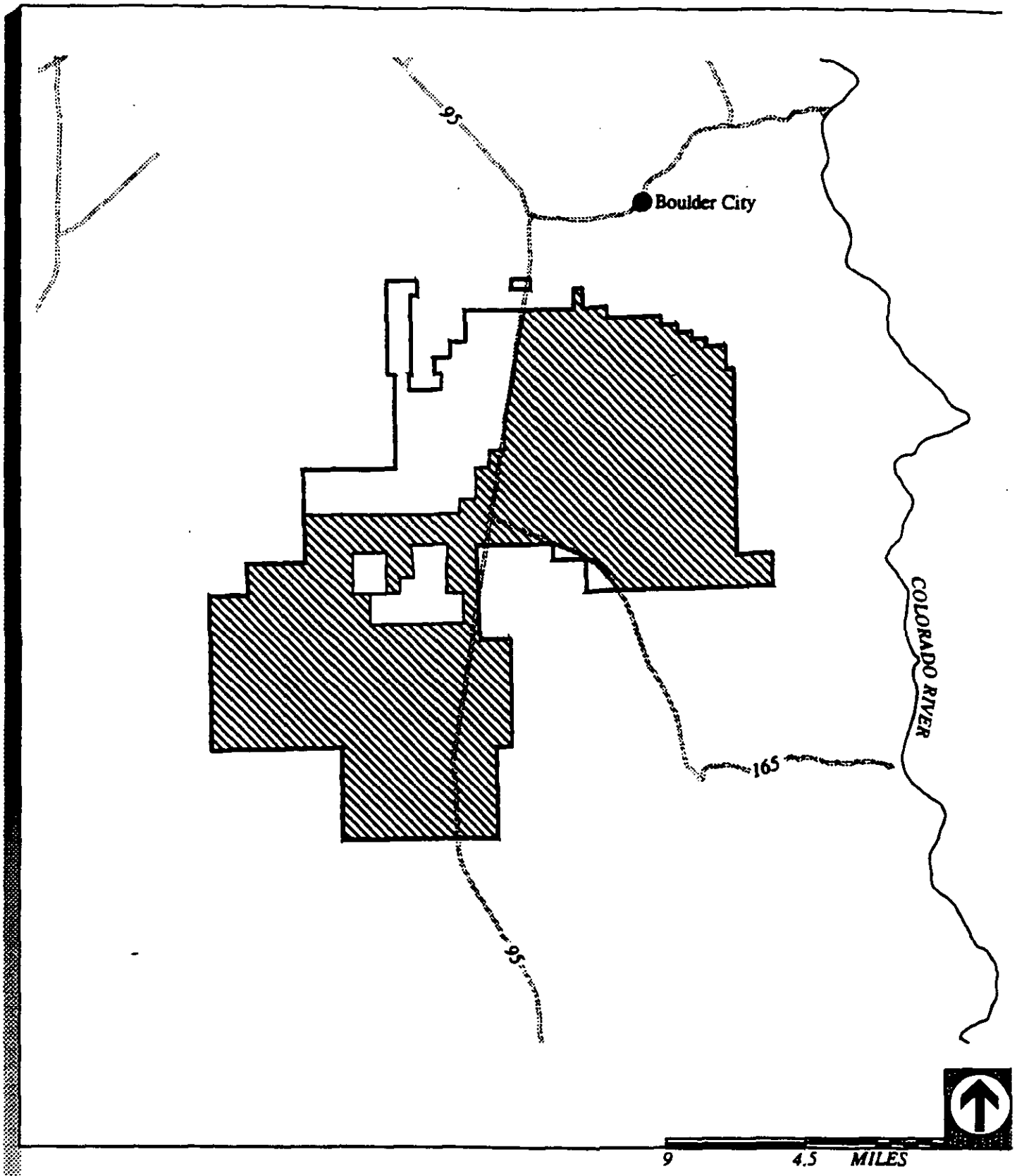
The Plan Administrator shall be responsible for the implementation of this program, and shall meet regularly with the BLM and those owners of grazing privileges who wish to participate in the program and seek the assistance of the plan. The annual report prepared by the Plan Administrator shall include the status of this measure and accounting of all funds expended thereon.

g) Boulder City Acquisition

Boulder City has filed an application with the Secretary of the Interior to purchase the EVTA, located in the northern portion of Eldorado Valley consisting of approximately 107,500 acres. This sale has been authorized by Congress pursuant to the terms of the Eldorado Valley Transfer Act and is expected to be completed during 1994. When this sale has been completed, Boulder City has agreed to convey a conservation easement affecting 85,000 acres to an entity designated by the Desert Conservation Planning effort, which will guarantee that those lands will be managed and protected for the benefit of the desert tortoise. A map designating the lands which will be conveyed are set forth on Figure 13, and a draft of the proposed conservation easement is contained within Appendix E.

In addition, the Desert Conservation Plan will contract with the BLM and/or NPS to enforce the provisions of the Conservation Easement as part of the law enforcement funding provided by the plan. Boulder City shall be responsible to supervise and regulate any activities which it authorizes or permits within the area. Failure to fulfill or enforce the terms of the conservation easement shall be grounds to suspend or revoke the Section 10(a) incidental take permit.

The Plan Administrator shall be responsible to communicate regularly with Boulder City regarding the status of the land, activities which are lawfully permitted on the land by the City which are consistent with the conservation easement and shall coordinate with the BLM and/or NPS regarding the enforcement of the conservation easement. The annual report of the Plan Administrator shall include the status of the lands affected by the easement and enforcement activities, as well as an accounting of all funds expended for that purpose.



Boulder City Conservation Easement (Proposed Mar. 1994)

Eldorado Valley Transfer Area Boundary

Clark County Line

Major Roads

FIGURE 13

Lands in the EVTA Included in the Conservation Easement

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h) Protection and Defense of Previously Acquired Grazing Privileges

As previously noted, over 900,000 acres of grazing privileges were purchased during the term of the Short-Term HCP. However, pursuant to existing BLM regulations and the current Stateline RMP those privileges may not simply be retired. Pursuant to those regulations, if not utilized by the owner, another grazing operator may apply for and utilize the land for grazing purposes, unless the BLM has agreed in advance that the owner may hold them in "nonuse." In order to hold the privileges in nonuse, the holder must operate a grazing business. Pursuant to the terms of the Implementation Agreement executed in connection with the Short-Term HCP, BLM agreed that the grazing privileges generated by the Short-Term HCP could be held in trust by The Nature Conservancy and be accorded nonuse status. The Nature Conservancy owns grazing operations in Nevada and several other western states. However, nonuse status is only effective for two years unless thereafter, on an annual basis, the holder (in this case, The Nature Conservancy) applies for and is granted an extension of the nonuse status. If the extension is not applied for or not granted, the nonuse status will lapse, and the land will be available to others to be utilized for grazing.

In order to protect its investment previously made in purchasing the grazing privileges and to prevent others from entering onto the land for the purposes of grazing, and as additional mitigation for the take of desert tortoises, the Desert Conservation Plan will provide funds to protect and defend those privileges in nonuse until such time, if ever, that grazing is prohibited by the Stateline RMP, or until it has been scientifically determined that grazing is consistent with the recovery of the desert tortoise as defined in the Draft Desert Tortoise Recovery Plan. If appropriate, grazing privileges outside of DWMAs could be sold. The proceeds from any such sale would, however, remain an asset of the Desert Conservation Plan and be utilized to fund other conservation measures within the DWMAs.

The Plan Administrator shall implement the provisions of this requirement by contract or otherwise and shall include in the annual report to the USFWS the status of the grazing privileges and an accounting of all funds expended to protect them.

i) Maintenance, Operation, and Preservation of Lands, Property, and Water Rights Acquired in Connection with Grazing Privileges

The Draft Recovery Plan strongly recommends that privately owned lands within DWMAs should be acquired and managed for the benefit of the desert tortoise to avoid islands of activities which might prove detrimental to overall management activities on adjacent public lands.

When grazing privileges were purchased during the Short-Term HCP real estate, improvements to real estate and water rights were also acquired from the owners of the

privileges. Over 165 acres of land were acquired along with water rights associated with wells or with artesian springs previously used for cattle grazing purposes. It is important that the lands which were acquired be managed in a consistent manner with the surrounding DWMA, and that the water rights be protected against appropriation by others. The laws of Nevada provide that water must be put to beneficial use, and that any waters not so used for five consecutive years are forfeited and may be appropriated by others.

If appropriate, land, improvements and water rights outside of DWMAs may be sold and the proceeds utilized to provide other conservation measures within DWMAs consistent with this Desert Conservation Plan.

The Plan Administrator shall be responsible for implementing this requirement by contract or otherwise, and shall include a status report and accounting of all funds expended in implementing this requirement in the annual report to the USFWS.

j) Imposition of $550 per Acre Development Fee

During the Short-Term HCP a $550 per acre development fee was imposed on all land disturbance activity on nonfederal lands within the permit area where take was permitted (the Las Vegas Valley and Boulder City), and a $250 acre development fee was imposed on land disturbance in the rest of the County.

The Desert Conservation Plan proposes to impose the $550/acre development fee on disturbance of private property throughout the County.

In addition, the Nevada Department of Transportation has agreed to pay the development fee for all lands it disturbs outside of DWMAs (whether or not the disturbance involves the actual take of desert tortoises) in all desert tortoise habitat south of the 38th parallel.

Assuming that all of the 110,000 acres projected by this plan to be developed during the term of the Section 10(a) Permit are actually developed, the development fee will generate over $60 million during the term of the plan.

The development fee will be imposed on all land disturbance which is subject to permitting by Clark County or the Cities and will be paid at the time of issuance of the permit, or, in the case of NDOT, prior to the land disturbance. It will not be imposed on land disturbance activities not subject to permit by Clark County or the cities, such as, but not limited to, the conversion of desert lands to agriculture. On the other hand, agricultural lands which are converted to other types of development will be required to pay the fee at the time of such conversion. In addition, although some sorts of land disturbance, such as grubbing and farming, will not require that fees be paid, because that activity is not subject to permitting by the County or the Cities, subsequent land

disturbance on that same land which is subject to permitting, such as grading, will trigger payment of the fee.

The Plan Administrator shall meet with the County and City permitting departments and NDOT on a regular basis to assure that each of those entities are collecting or paying, as the case may be, the appropriate fees. The annual report to the USFWS shall include a status report regarding the collection plan as well as an accounting of all funds received.

4) Continuing Obligations of Others/Piute-Eldorado DWMA

As part of the Short-Term HCP and the extension thereof, the BLM, NPS, NDOW, and the USFWS undertook certain tasks and responsibilities with respect to the ongoing management of the Piute-Eldorado DWMA which was established under the Short-Term HCP, to assist Clark County in meeting its mitigation requirements. The obligation to fulfill those tasks and responsibilities are memorialized in the Implementation Agreement dated as of July 24, 1991, and the amendment to the Implementation Agreement.

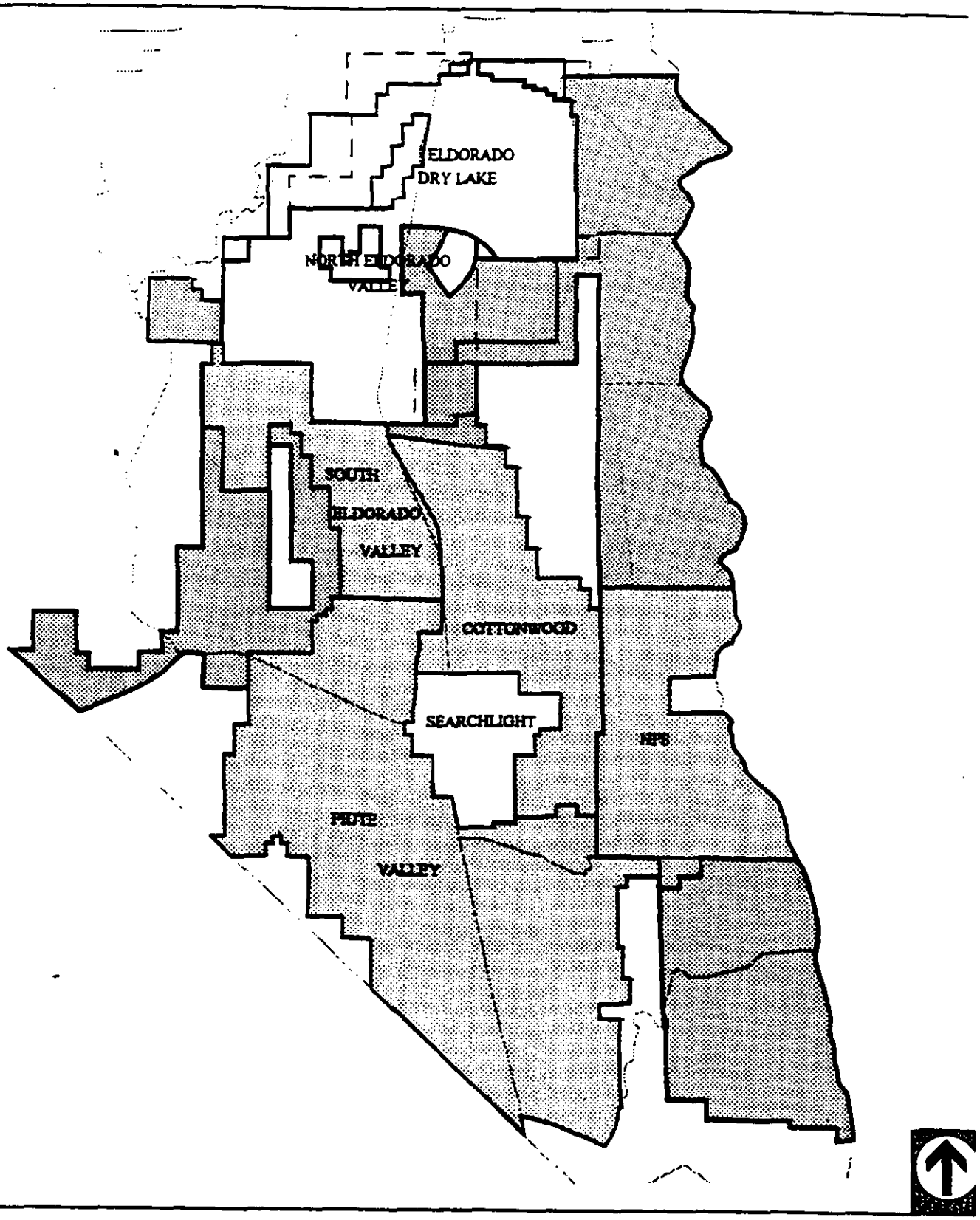
While it is the intention of this Desert Conservation Plan to supersede and replace the Short-Term HCP in its entirety, the Piute-Eldorado DWMA as set forth in Figure 12 is intended to remain in place and to be managed as conserved habitat. The Plan Administrator shall meet and confer on a regular basis with the various entities set forth hereinafter which have ongoing commitments which continue under the Desert Conservation Plan and shall cooperate with them to assist in the implementation of those requirements. In addition, the annual report to the USFWS shall include a report on the status of those obligations.

The land management tasks and responsibilities undertaken by the BLM, NPS, NDOW and USFWS were intended to be permanent, to the extent permitted by law. Those continuing tasks and responsibilities, as set forth hereinafter, include the following:

a) Bureau of Land Management and National Park Service

1. The BLM and NPS shall institute and keep in full force and effect the following land use controls upon all lands where grazing privileges have been purchased which are within the Piute-Eldorado DWMA as established in the Short-Term HCP and the extension thereof, as more particularly set forth in Figure 14.

    - Nonuse status for conservation and protection purposes shall be approved and grazing shall not be permitted except on lands which may be utilized in a grazing study approved by the USFWS, until such time as a definitive study of livestock/tortoise interrelationships has been completed that scientifically



DWMA Subarea Boundary

Eldorado Valley Act Lands Boundary

Conserved Habitat (Federal Lands)

Grazing Allotment Boundary

NPS Boundary

FIGURE 14

Federal Lands in the Piute-Eldorado DWMA

RECON

demonstrates that livestock grazing can be conducted under conditions that will improve tortoise habitat and will not impair recovery of the species.

- Access for OHV use within the DWMA will be allowed on those roads designated by BLM and NPS in coordination with the Implementation and Monitoring Committee, and commercial and competitive events shall be prohibited except in portions of the Eldorado Valley where such events may be authorized by the BLM on existing courses, and under such conditions as it may deem appropriate.

- Intensive recreational uses of any kind will be restricted to existing areas currently designated for that purpose, and such areas will not be allowed to expand.

- Mining claims will be reviewed by the BLM for validity on an as-needed basis, and Section 7 consultations will be conducted on all mining plans of operations.

- Landfills will be restricted to existing sites and new ones will not be allowed.

- Prior to permitting a new or modified land use, BLM and NPS will comply with the requirements of the Council on Environmental Quality. In particular, all environmental documents, as well as biological assessments required for Section 7 consultations, shall, in addition to analyzing the direct and indirect effects of a proposed action, analyze the incremental impact of the action when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions (40 CFR 1508.7 and 1508.8).

- In the event it is determined that any land use within the Piute-Eldorado DWMA is having an adverse effect upon the recovery of the Tortoise, nothing in this Desert Conservation Plan is intended to preclude the BLM or NPS from instituting and imposing additional restrictions and prohibitions with respect to that land use, and it is anticipated that in such event, the BLM and NPS shall institute such additional restrictions and prohibitions.

2. BLM and NPS shall prepare a Biennial Management Plan and Report (Biennial Management Plan) in consultation with the USFWS. This Biennial Management Plan will replace the Annual Management Plan required under the Short-Term HCP. As set forth in other sections of this document, the Biennial Management Plan shall be submitted to the USFWS and shall address proposed management plans and programs for the ensuing two years as well as an evaluation of

management actions imposed or continued during the previous two year period in order that the USFWS and the I&M Committee may determine that the terms of this Desert Conservation Plan and the Permit are being fulfilled.

3. To the extent permitted by law, the BLM and NPS shall integrate the terms of this Desert Conservation Plan and their obligations hereunder into their respective management plans which govern their land management policies.

4. BLM and NPS shall include in their budget requests adequate dedicated and earmarked funding to allow each of them to fully operate, manage, maintain and monitor the Piute-Eldorado DWMA pursuant to the terms of this Desert Conservation Plan, and to fulfill their obligations to protect the tortoise consistent with statutory obligations imposed by congress. They each acknowledge that funds collected by Clark County and paid to them to assist in land management policies and actions are not intended to be substituted for monies which would otherwise be allocated to them to fulfill statutory obligations to protect the desert tortoise, but are intended to supplement those funds.

b) The Fish and Wildlife Service

The USFWS also undertook certain responsibilities and tasks in connection with the Short-Term HCP which are intended to continue on a permanent basis, to the extent otherwise permitted by law: Those ongoing tasks and responsibilities are:

1. The USFWS shall cause mitigation measures that result from authorization of incidental take pursuant to Section 7 of the ESA (Section 7) to be consistent with the mitigation measures required under this plan, under normal circumstances. However nothing in this plan is intended to prohibit or proscribe the USFWS from requiring mitigation in excess of that provided for in this plan should the circumstances so warrant.

2. It shall cooperate with NDOW, the I&M Committee and the appropriate land manager to develop a tortoise translocation program.

3. It shall consider and authorize, in conjunction with NDOW, utilization of tortoises collected pursuant to this plan for research, relocation, zoos, museums, education institutions and adoption programs.

4. It shall cooperate with and provide technical assistance to the I&M Committee.

5. As set forth elsewhere in this plan, it shall review, evaluate and prepare a report concerning the Biennial Management Plan and Budget.

6. It shall include in its budget requests adequate funding to allow it to fully perform the obligations and tasks assigned to it pursuant to the terms hereof, including, but not limited to the review of the Biennial Management Plan and Budget as well as cooperating with and providing technical assistance to the I&M Committee.

7. It shall coordinate and cooperate with the I&M Committee with respect to the expenditure of mitigation fees paid to any federal land manager or to any other entity in Clark County designated by the USFWS as a result of authorization of incidental take of Tortoises pursuant to Section 7 in order to avoid duplication of effort and to ensure the efficient utilization of both HCP and Section 7 funds.

c) Nevada Division of Wildlife

1. It shall cooperate with the USFWS, the I&M Committee and the appropriate land manager to develop a tortoise translocation program.

2. It shall consider and authorize, in conjunction with the USFWS, utilization of tortoises collected pursuant to this plan for research, relocation, zoos museums, education institutions and adoption programs.

3. It shall cooperate with and provide technical assistance to the I&M Committee.

5) Implementation of Management Goals and Objectives

State and federal resource managers have the legal responsibility to both plan for and implement management policies which preserve, protect and conserve the biological resources of lands they manage, consistent with the ESA and their own rules and regulations, especially within Critical Habitat and such DWMAs as may eventually be established. Furthermore, many of the mitigation measures provided for in this Desert Conservation Plan will enhance the likelihood of the survival and recovery of the desert tortoise in the wild almost regardless of land and resource management policies adopted by the managers. However, in the event management policies and practices instituted within Critical Habitat and DWMAs, even with the assistance of funds provided by the Desert Conservation Plan, prove insufficient to assure the continued existence and recovery of the desert tortoise, it is conceivable that the Section 10(a) permit sought by this plan could be suspended or revoked. Thus, Clark County and the Cities have a substantial interest in assuring that the money provided by the Desert Conservation Plan is well spent and that management policies and activities of the resource managers are sufficient to assure the survival and recovery of the species in the wild. With that interest in mind, the state and federal resource managers have agreed to meet biennially with the

Clark County Implementation and Monitoring Committee to assure that the terms and conditions of the Section 10(a) permit are being fulfilled and to provide an opportunity for the public to have notice of and input into which conservation measures are being financed by the plan.

The key concern of the County and the Cities is that:

- The monies be effectively used to assure the survival and recovery of the species in the wild;

- Money provided by the plan used to fund specific measures in a management plan will be in addition to, not instead of, amounts currently budgeted or otherwise legally required to be expended by BLM and NPS or other agencies for the management of their lands or resources;

- Money provided by the plan not be used to implement measures that the Steering Committee specifically identified in public comments on the Recovery Plan and proposed designation of Critical Habitat as being either irrelevant to the recovery of the tortoise or in conflict with the orderly development goals of Clark County citizens. These comments are itemized in Appendixes F and G of this Desert Conservation Plan.

a) Preparation of Management Plans and Budgets

State and federal resource managers will prepare a joint biennial management plan and budget that focuses on appropriate expenditures to reach recovery goals for the desert tortoise. The County, in consultation with NDOT, will also prepare a joint biennial budget for road barrier construction. Finally, the County shall prepare a budget for the cost of administering the plan and for minimization measures. The management plans from the resource managers must set forth all policies and actions proposed within the DWMAs for the ensuing two years, and not merely those measures proposed to be financed by the Desert Conservation Plan. The management plan(s) shall also include an evaluation of management actions taken or continued during the previous two years and an accounting of funds which it has received from the Desert Conservation Plan during the two-year period. Likewise, the budgets provided by the resource managers shall set forth the entirety of anticipated conservation expenditures within or connected with DWMAs, what portion shall be funded by the state or federal resource managers, what portion each manager or agency intends to seek from Section 7 mitigation funds, and what portion it intends to seek as supplemental funding from the Desert Conservation Plan funds administered by Clark County. The first biennial management plans and budgets will be submitted to the USFWS no later than January 1, 1995, and to the I&M Committee no later than March 1, 1995. They will thereafter be considered by the Clark

County Commission in their regular budget considerations in May of 1995, prior to the end of the term of the Short-Term HCP, as extended.

In addition, at the end of the first year of each two year budget cycle, any entity which has received funds from the Desert Conservation Plan shall submit a financial report to the I&M Committee which sets forth its progress and achievements toward implementation of its management plan together with a financial report which sets forth the amount of funds actually received from the Desert Conservation Plan as well as expenditures actually made by it from those funds.

b) USFWS Review of Management Plans and Budgets

The USFWS will review and provide a written report concerning the proposed management plans and budgets which will evaluate the consistency of the proposed management plans with the ESA, the Recovery Plan and this conservation plan, prior to the submittal of the proposed management plans and budgets to the Implementation and Monitoring Committee. The written report shall be provided within 45 days after the proposed management plans and budgets are submitted to it. In addition, if required by law, the federal land managers will consult or confer with the USFWS pursuant to Section 7 of the ESA regarding the proposed management plan and budget. The Section 7 Biological Opinion, if required, and the report shall be furnished to the Implementation Committee to assist it in its deliberations.

c) Implementation and Monitoring Committee Review of Management Plans and Budgets

An Implementation and Monitoring Committee shall be formed to review and comment on final management plans and budgets submitted by resource managers, NDOT and the County. The major purpose of the committee will be to review and comment upon the progress of implementation of the Desert Conservation Plan measures, and to assure that all interested groups will have notice of and ability to comment on habitat management decisions and implementation measures prior to funding by the Desert Conservation Plan.

1. The Implementation and Monitoring Committee shall:

   a. Evaluate and recommend approval, denial, or modification of proposed expenditures of Desert Conservation Plan funds.

   b. Upon request from the USFWS, review and comment upon the proposed expenditure of Section 7 mitigation funds.

c. Perform such further duties and responsibilities as the Clark County Board of Commissioners shall from time to time direct.

d. Establish any technical advisory subcommittees which would assist the body of the I&M Committee with decisions of a technical nature. Members of the subcommittee will not be required to be members of the I&M Committee.

e. Assist the County Board of Commissioners in the selection of an administrator for the I&M Committee.

f. Establish a subcommittee which will review the public information program described in Chapter 3.C. of the HCP. Members of the subcommittee will not be required to be members of the I&M Committee.

g. Recommend to the County Commission any additional studies or projects that have not been suggested for funding by the state or federal resource managers but which may be important for protection of the desert tortoise and the desert ecosystem.

2. All members of the I&M Committee (other than representatives of state and federal governmental entities) shall be residents of Clark County. Agencies and organizations to be invited to serve on the I&M Committee include:

NBS (ex officio)
USFWS (ex officio)
BLM (ex officio)
NPS (ex officio)
NDOW (ex officio)
NDOT
Las Vegas Water District (ex officio)
Nevada Division of Agriculture (ex officio)
One representative each from Clark County, Las Vegas, North Las Vegas, Henderson, Boulder City and Mesquite
One representative each from any Rural Town Boards which has indicated an interest in participating
Representatives of organized environmental groups
Tortoise Group
The Nature Conservancy
University of Nevada (Las Vegas and Reno)
Southern Nevada Home Builders Association
One representative of mining interests

Two representative of OHV interests, one representing competitive and one representing noncompetitive activities
One representative of grazing interests
One representative of sportsmen interests
One representative of the Greater Las Vegas Association of Realtors

3. The Clark County Board of Commissioners will appoint representatives to the committee. The list of members set forth above may be expanded to include other interest groups upon application to and approval by the Board of Commissioners.

4. Regular meetings of the I&M Committee shall be limited to four or so meetings held within a 60 day period after submittal of the annual progress reports and biennial management plans and budgets. In the event the Implementation and Monitoring Committee is unable to reach consensus with respect to the terms of either the management plan or budget within 60 days after submittal, it shall nevertheless forward a record of its proceedings to the Clark County Board of Commissioners for final action.

5. Special meetings may be called by the Plan Administrator, as necessary. It is anticipated that at the commencement of the plan, frequent special meetings will be required.

6. The County Commission's concerns about any aspects of the management plans and the budgets will be presented to the Implementation and Monitoring Committee. The Implementation and Monitoring Committee will prepare a report for the County Commission to address the concerns.

d) Desert Conservation Plan Administrator

The Clark County Manager will appoint or contract with a person to administer the Clark County Desert Conservation Plan and to chair the Implementation and Monitoring Committee. The position should be filled by a qualified person(s) with public administration and biology or other appropriate experience.

The duties of the Plan Administrator will include the implementation of each of the minimization and mitigation measures set forth in this Desert Conservation Plan. In addition, the Plan Administrator shall:

1. Deal with public inquiries concerning the Desert Conservation Plan.

2. Outreach to various specific interest groups who have an interest in the plan and its effects on land management policies.

3. Facilitate coordination of efforts among the various federal and state resource managers to avoid duplication of effort and to assure that the resource managers are using complimentary study and implementation methods so that data may be relevant and usable by all agencies.

4. Evaluate, from a County perspective, the management plans and budgets.

5. Evaluate, from a County perspective, the effectiveness of implementation measures financed by the plan.

6. Report to the I&M Committee and the Clark County Commission the status of biological resources of the County.

7. Report to the I&M Committee and the Clark County Commission, the status and likelihood of species located within the County to be listed by either the state or federal agencies.

8. Recommend to the I&M Committee and the Clark County Commission measures to avoid future ESA listings and courses of action to support efforts to delist.

E. Funding of the Desert Conservation Plan

The Clark County Desert Conservation Plan proposes to mitigate the impacts of take of desert tortoises on nonfederal lands in Clark County through expenditure of funds raised through its development fee to assist in the implementation of conservation policies and activities carried out primarily within DWMAs or tortoise ACECs in the Stateline RMP as finally adopted. Minimization measures will be similarly financed.

Under the Short-Term HCP, a trust fund of over $3,000,000 was established to assist ongoing management of conserved habitat. An additional $1,000,000 will be added to the trust fund as mitigation for the one-year amendment and extension of the existing incidental take permit. By July, 1995, the principal of the trust fund, including interest earned, is projected to be approximately $4.4 million.

In addition to funds earmarked and set aside in the trust fund, it is anticipated that the County will have accumulated an additional $2.7 million by July, 1995 which may be used to finance minimization and mitigation measures proposed by this Desert Conservation Plan.

Upon approval of this Desert Conservation Plan and issuance of the Section 10(a) permit, all of the Short-Term HCP funds, including those currently in the trust fund and otherwise accumulated will be placed in a Clark County Desert Conservation Plan endowment fund. The endowment fund should commence with an initial principal of at least $7,000,000. Clark County shall administer and invest the endowment fund in accordance with the laws of the State of Nevada and make disbursements consistent with the approved biennial budgets.

1. All funds collected pursuant to the plan will be deposited with the County.

2. After review and comment by the Implementation and Monitoring Committee, a joint budget shall be presented to the Clark County Board of Commissioners by the county, NDOT and the state and federal resource managers. The commission may approve or disapprove the budget in whole or part; however, disapproval of the budget or any portion thereof deemed essential by the USFWS and the resource managers may be grounds to suspend or terminate the Section 10(a) permit.

3. Because it is impossible to forecast conservation strategies and minimization needs for the full 30-year term of this plan, expenditures may be made for minimization and mitigation measures not proposed by this plan, but only with the concurrence of both the USFWS and the Clark County Board of Commissioners. Likewise, the percentage of funds available and expended each

year on the various minimization and mitigation measures proposed herein may be modified, but only with the concurrence of the USFWS and the Clark County Commission.

4. The County shall disperse funds pursuant to the terms of the biennial budget to the County, the state and federal resource managers and approved contractors after approval by the Clark County Commission.

5. $2.1 million per two year period, plus up to an additional $600,000 per two year period for the first ten years of the plan, adjusted biennially to reflect cost of living increases, not to exceed 4 percent per year, will be allocated and spent for mitigation measures outlined in this Desert Conservation Plan. The Steering Committee believes that spending more money during the first 10 years of the plan may be wise in order to begin the implementation of various conservation measures as early as possible.

6. Up to an additional $700,000 (1994 dollars) per year period, adjusted biennially to reflect cost of living increases, not to exceed 4 percent per year will be allocated and spent for minimization measures as outlined in this plan.

7. Tables 7 and 8 set forth the projected annual revenues and growth (assuming an interest rate that is 2 percent over inflation) of the endowment fund (starting with $7 million) for 30 years. Table 7 projects annual expenditures of $1.350 million per annum, and Table 8 projects annual expenditures for the first ten years of the program at $1.650 million per annum and thereafter being reduced to $1.350 million per annum. Both tables are represented in 1994 dollars and assume cost of living increases which are 2 percent less than prevailing interest rates. Based on population growth projections for Clark County, projected disturbed acres will result in annual revenues from the development fee, expressed in 1994 dollars, over the next 30 years of from $2.2 million to $1.6 million.

8. Any development fees collected during any given year and not expended on projects approved by the USFWS and the commission will be added to the endowment fund.

9. For a period of two years after issuance of the permit, payments from the principal of the endowment fund may be committed to purchase (on a willing-seller/willing-buyer basis) grazing privileges and/or private inholdings, provided the cost does not jeopardize the ability of the fund to provide sufficient money to fulfill the other minimization and mitigation requirements of this plan for at least the term of the permit.

TABLE 7
PROJECTED ANNUAL REVENUES AND COSTS OF THE HCP
(1994 DOLLARS)

	Year	Projected Acres Disturbed per Year	Inc/yr @ $550 per Acre	Interest Income @2 percent over inflation	Program Costs	Net Annual Income	Cumulative Endowment Starting at $7,000,000
1	1994	5,810	$3,195,500	$140,000	$1,350,000	$1,985,500	$8,985,500
2	1995	5,661	$3,113,550	$179,710	$1,350,000	$1,943,260	$10,928,760
3	1996	5,513	$3,032,150	$218,575	$1,350,000	$1,900,725	$12,829,485
4	1997	5,365	$2,950,750	$256,590	$1,350,000	$1,857,340	$14,686,825
5	1998	5,217	$2,869,350	$293,736	$1,350,000	$1,813,086	$16,499,911
6	1999	5,069	$2,787,950	$329,998	$1,350,000	$1,767,948	$18,267,860
7	2000	4,921	$2,706,550	$365,357	$1,350,000	$1,721,907	$19,989,767
8	2001	4,773	$2,625,150	$399,795	$1,350,000	$1,674,945	$21,664,712
9	2002	4,626	$2,544,300	$433,294	$1,350,000	$1,627,594	$23,292,306
10	2003	4,478	$2,462,900	$465,846	$1,350,000	$1,578,746	$24,871,053
11	2004	4,331	$2,382,050	$497,421	$1,350,000	$1,529,471	$26,400,524
12	2005	4,184	$2,301,200	$528,010	$1,350,000	$1,479,210	$27,879,734
13	2006	4,037	$2,220,350	$557,595	$1,350,000	$1,427,945	$29,307,679
14	2007	3,891	$2,140,050	$586,154	$1,350,000	$1,376,204	$30,683,882
15	2008	3,744	$2,059,200	$613,678	$1,350,000	$1,322,878	$32,006,760
16	2009	3,597	$1,978,350	$640,135	$1,350,000	$1,268,485	$33,275,245
17	2010	3,451	$1,898,050	$665,505	$1,350,000	$1,213,555	$34,488,800
18	2011	3,305	$1,817,750	$689,776	$1,350,000	$1,157,526	$35,646,326
19	2012	3,159	$1,737,450	$712,927	$1,350,000	$1,100,377	$36,746,703
20	2013	3,013	$1,657,150	$734,934	$1,350,000	$1,042,084	$37,788,787
21	2014	2,867	$1,576,850	$755,776	$1,350,000	$982,626	$38,771,412
22	2015	2,722	$1,497,100	$775,428	$1,350,000	$922,528	$39,693,941
23	2016	2,576	$1,416,800	$793,879	$1,350,000	$860,679	$40,554,619
24	2017	2,431	$1,337,050	$811,092	$1,350,000	$798,142	$41,352,762
25	2018	2,286	$1,257,300	$827,055	$1,350,000	$734,355	$42,087,117
26	2019	2,141	$1,177,550	$841,742	$1,350,000	$669,292	$42,756,409
27	2020	1,996	$1,097,800	$855,128	$1,350,000	$602,928	$43,359,338
28	2021	1,851	$1,018,050	$867,187	$1,350,000	$535,237	$43,894,574
29	2022	1,707	$938,850	$877,891	$1,350,000	$466,741	$44,361,316
30	2023	1,562	$859,100	$887,226	$1,350,000	$396,326	$44,757,642

TABLE 8
PROJECTED ANNUAL REVENUES AND COSTS OF THE HCP
(1994 DOLLARS)

	Year	Projected Acres Disturbed per Year	Inc/yr @ $550 per Acre	Interest Income @2 percent over inflation	Program Costs	Net Annual Income	Cumulative Endowment Starting at $7,000,000
1	1994	5,810	$3,195,500	$140,000	$1,650,000	$1,685,500	$8,685,500
2	1995	5,661	$3,113,550	$173,710	$1,650,000	$1,637,260	$10,322,760
3	1996	5,513	$3,032,150	$206,455	$1,650,000	$1,588,605	$11,911,365
4	1997	5,365	$2,950,750	$238,227	$1,650,000	$1,538,977	$13,450,343
5	1998	5,217	$2,869,350	$269,007	$1,650,000	$1,488,357	$14,938,699
6	1999	5,069	$2,787,950	$298,774	$1,650,000	$1,436,724	$16,375,423
7	2000	4,921	$2,706,550	$327,508	$1,650,000	$1,384,058	$17,759,482
8	2001	4,773	$2,625,150	$355,190	$1,650,000	$1,330,340	$19,089,821
9	2002	4,626	$2,544,300	$381,796	$1,650,000	$1,276,096	$20,365,918
10	2003	4,478	$2,462,900	$407,318	$1,650,000	$1,220,218	$21,586,136
11	2004	4,331	$2,382,050	$431,723	$1,350,000	$1,463,773	$23,049,909
12	2005	4,184	$2,301,200	$460,998	$1,350,000	$1,412,198	$24,462,107
13	2006	4,037	$2,220,350	$489,242	$1,350,000	$1,359,592	$25,821,699
14	2007	3,891	$2,140,050	$516,434	$1,350,000	$1,306,484	$27,128,183
15	2008	3,744	$2,059,200	$542,564	$1,350,000	$1,251,764	$28,379,947
16	2009	3,597	$1,978,350	$567,599	$1,350,000	$1,195,949	$29,575,896
17	2010	3,451	$1,898,050	$591,518	$1,350,000	$1,139,568	$30,715,464
18	2011	3,305	$1,817,750	$614,309	$1,350,000	$1,082,059	$31,797,523
19	2012	3,159	$1,737,450	$635,950	$1,350,000	$1,023,400	$32,820,924
20	2013	3,013	$1,657,150	$656,418	$1,350,000	$963,568	$33,784,492
21	2014	2,867	$1,576,850	$675,690	$1,350,000	$902,540	$34,687,032
22	2015	2,722	$1,497,100	$693,741	$1,350,000	$840,841	$35,527,872
23	2016	2,576	$1,416,800	$710,557	$1,350,000	$777,357	$36,305,230
24	2017	2,431	$1,337,050	$726,105	$1,350,000	$713,155	$37,018,385
25	2018	2,286	$1,257,300	$740,368	$1,350,000	$647,668	$37,666,052
26	2019	2,141	$1,177,550	$753,321	$1,350,000	$580,871	$38,246,923
27	2020	1,996	$1,097,800	$764,938	$1,350,000	$512,738	$38,759,662
28	2021	1,851	$1,018,050	$775,193	$1,350,000	$443,243	$39,202,905
29	2022	1,707	$938,850	$784,058	$1,350,000	$372,908	$39,575,813
30	2023	1,562	$859,100	$791,516	$1,350,000	$300,616	$39,876,429

10. Payments from the principal of the endowment fund may also be committed to conduct a translocation study approved by the USFWS, NDOW, and the Clark County Commission, provided the cost does not exceed 5 percent of the principal of the fund at any time, and does not jeopardize the ability of the fund to provide sufficient money to fulfill the other minimization and mitigation requirements of this plan for at least the term of the permit.

F. Plan Implementation

To ensure implementation of the proposed conservation and mitigation measures, the permit applicants propose to (1) sign an implementation agreement for the conservation program; (2) provide accurate records of land disturbance in the permit area; and (3) provide for an orderly process to allow for reasonable changes to occur with the conservation plan through an amendment procedure.

1) Implementation Agreement

Each of the participating agencies will enter into an agreement with USFWS regarding implementation of the HCP. This agreement will specify the responsibilities of each agency, the minimization, conservation and mitigation measures to be implemented, reporting and enforcement procedures, and any other permit conditions USFWS may require.

2) Monitoring Measures

To provide accurate records of actual levels of land disturbance and monitor potential impacts of take on the tortoise, the participants of the Clark County Desert Tortoise HCP will institute a record-keeping process as set forth in Chapter 3.C. of the plan.

a) Project Field Records

Reports that measure cumulative totals of actual tortoise habitat disturbed will be submitted to the USFWS for review.

b) Unforeseen Events

The federal land managers, NDOW and the County will notify USFWS of any catastrophic event, such as fire, flood, or disease, that destroys significant numbers of desert tortoises or their habitat within a DWMA or any unexpected shift in the number or distribution of tortoises within a DWMA. Such notice will be made in writing within reasonable time limits.

3) Plan Amendments

Corrective measures and other necessary changes will be developed in coordination with USFWS. Significant changes will be submitted to USFWS as proposed amendments to the permit. Such amendments will be subject to assessment under the ESA and to appropriate environmental documentation. In order to be effective, any proposed

amendment shall be agreed to, in writing, by each of the permittees affected by the proposed amendment.

4) Annual Reports

Clark County shall file an annual report with USFWS which will set forth the number of desert tortoises collected by it, the disposition of all desert tortoises collected, the number of acres of land disturbed, the amount of money collected from development fees, the principal of and income earned by the endowment fund, the amount of money disbursed for each minimization and mitigation measure proposed hereunder and approved during the biennial budgeting process, and the status of each minimization and mitigation measure proposed hereunder or otherwise approved as a result of the management and budgeting process.

G. Alternatives Considered

As discussed in USFWS's guidelines for HCPs, appropriate conservation and mitigation measures under Section 10(a) of the federal ESA can take many forms, including habitat preservation, enhancement, restoration, and creation; buffers around and land use restrictions within areas with extant habitat; habitat management; and public education. In shaping its conservation strategy, Clark County considered several approaches suggested by the Steering Committee, TAC, and members of the public.

1) No Project

Under the no project alternative, a Section 10(a) permit would not be issued and projects involving take would be prohibited under Section 9 of the ESA or, if federal land or action was involved, handled through Section 7 consultations. Such an approach would result in occupied desert tortoise habitat not being developed. However, because of the Section 7 option, land ownership patterns, and the intermittent pattern of occupied desert tortoise habitat, development would undoubtedly continue, but in checkerboard patterns which merely avoid occupied habitat. It was rejected because it would do more to protect relatively poor-quality tortoise habitat in urban areas than to protect the tortoise in the wild. It also was rejected because it eliminates the opportunity to implement and coordinate conservation measures on a scale not possible through individual projects or by individual federal agencies.

2) Preparation of a Multiple Species Plan to Support an Incidental Take Permit for All Sensitive Species

Under this alternative, Clark County would prepare a HCP for all threatened, endangered, and candidate species in the plan area. While this approach would cover a broader range of species than the Clark County Desert Conservation Plan, the multiple species HCP would require data on each of the other species equivalent to the level presented on the desert tortoise. Collection of additional data would postpone implementation of the conservation measures proposed for the desert tortoise and thus also delay the anticipated benefits of those measures to tortoises in and adjacent to the permit area. This alternative was rejected because although other species of concern occur in the permit area, the Clark County conservation plan participants do not propose to take any such species and are not seeking a permit for such take. Moreover, this Desert Conservation Plan avoids activities which are inconsistent with conservation efforts for other species and in many cases benefits those species (see Appendix C).

Plan Preparers

Paul Selzer—Attorney, Best, Best and Krieger

Mr. Selzer directed and coordinated preparation of the Clark County Desert Conservation Plan for the Section 10(a)(1)(B) permit applicants, including coordination of the Steering Committee. Mr. Selzer has 25 years' experience in real estate law and has coordinated preparation of the Coachella Valley Fringe-toed Lizard HCP and the Stephens' Kangaroo Rat HCP.

Paul Fromer—Project Director and Conservation Biologist, RECON

Paul Fromer has over 16 years of experience as an ecologist and conservation planner. He directs RECON's habitat conservation planning efforts and has overseen the preparation of all HCPs prepared by RECON to date, including those for the desert tortoise, Stephens' kangaroo rat, northern spotted owl, and least Bell's vireo. Mr. Fromer was responsible for the technical preparation of this HCP, including direction and moderation of the Technical Advisory Committee. He completed his doctoral studies in zoology (advanced to Ph.D. candidacy) at the University of Montana, has an M.S. in biology from San Diego State University, and received a B.A. in zoology from the University of California at Los Angeles.

Donald E. Haines—Project Manager, RECON

Don Haines has five years of experience in plan preparation and environmental documentation. He is a senior project manager at RECON and project manager of the Clark County Desert Wildlife Conservation Plan. He was responsible for the preparation and revision of the overall text of the plan. Mr. Haines worked closely with the TAC, Steering Committee, resource agencies, and special interest groups. He completed his M.A. and B.A. in English composition and literature at the University of Michigan.

Gina Shultz—Biologist, RECON

Gina Shultz has seven years' experience as a biologist with expertise in conservation biology, ecology, mammalogy, ornithology, and wildlife management. She was the primary preparer of the Desert Tortoise Biology and Conservation appendix to this HCP. She completed her B.S. in biology from San Diego State University.

Julie Vanderwier—Biologist, RECON

Julie Vanderwier has 15 years of experience conducting field research, including the preparation of plant collections, directed searches for sensitive plants and animals, ecological monitoring, and preparation of technical reports and management plans. She prepared the technical appendix of sensitive plants and animals with the potential to occur in Clark County. She completed her M.S. and B.S. in plant ecology and taxonomy and field biology at California Polytechnic State University, San Luis Obispo.

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Steering Committee

In addition to Mr. Selzer and the RECON staff, the Steering Committee participated in the review and preparation of the Clark County Desert Conservation Plan. Steering Committee members are noted below.

Mary Lynn Ashworth, City of Las Vegas Department of Building and Safety
Sherry Barrett, U.S. Fish and Wildlife Service
Kelly L. Booth, interested citizen
Karen Budd-Falen, Budd-Falen Law Offices
Betty Burge, Tortoise Group
Lindsey Dalley, interested citizen
Don Dayton, Multiple Users Group
R. E. Franta, Vegas Valley 4 Wheelers
Gary Gilbert, Jr., interested citizen
Ronald W. Gregory, Clark County, Dept. of Comprehensive Planning
Ross Haley, National Park Service
D. Bradford Hardenbrook, Nevada Division of Wildlife, Region III
Warren B. Hardy, interested citizen
Dave Harlow, U.S. Fish and Wildlife Service
Paul Henderson, City of Mesquite
Catherine Koehn, interested citizen
Bob Lewis, interested citizen
David Livermore, The Nature Conservancy
Leslie Long, City of North Las Vegas
Lavert Lucas, City of Henderson
David McCullough, interested citizen
Ron Marlow, interested citizen
Phyllis Martin, City of North Las Vegas
Janet Monaco, Las Vegas Water District
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Michael C. Niarchos, Summa Corporation
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Ron Schreiber, Nevada Miners Association
Sid Slone, Bureau of Land Management, Las Vegas District
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Mark Trinko, Blue Ribbon Coalition
Robert Turner, Desert Tortoise Council
Carl Volkmar, Board of Realtors
Mike Wickersham, Nevada Division of Wildlife, Region III
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Glossary—Acronyms

ACEC: area of critical environmental concern

BLM: (United States) Bureau of Land Management

CEQ: Council on Environmental Quality

CFR: *Code of Federal Regulations*

DTCC: Desert Tortoise Conservation Center

DWMA: desert wildlife management area

EA: environmental assessment

EIS: environmental impact statement

EMZ: experimental management zone

ESA: Endangered Species Act (federal)

EVTA: Eldorado Valley Transfer Area

FHWA: Federal Highway Administration

FLPMA: Federal Land Policy and Management Act

FONSI: Finding of No Significant Impact

HCP: habitat conservation plan

HMP: habitat management plan

I&M: Implementation and Monitoring Committee

MFP: (Clark County) Management Framework Plan

NAC: Nevada Administrative Code

NBS: National Biological Survey

NDOT: Nevada Department of Transportation

NDOW: Nevada Division of Wildlife

NEPA: National Environmental Policy Act

NPS: (United States) National Park Service

NRS: Nevada Revised Statutes

OHV: off-highway vehicle

PTMA: potential tortoise management area

RMP: resource management plan

TAC: technical advisory committee

TMA: tortoise management area

TNC: The Nature Conservancy

URTD: upper respiratory tract disease

USFWS: United States Fish and Wildlife Service

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APPENDIX A

Desert Tortoise Biology and Conservation

The desert tortoise is a long-lived reptile well adapted to living in a highly variable and often harsh desert environment. The desert tortoise spends much of its life in burrows, emerging to feed and mate in the early spring or late winter. The desert tortoise can tolerate large imbalances in its water and energy budgets, which enables it to survive lean years and exploit resources that are only periodically available.

This chapter provides a summary of the physical, behavioral, and habitat characteristics of the Mojave population of the desert tortoise; distribution of the species and its habitat; factors which have led to the decline of this species; and the recovery strategy and designation of critical habitat for the Mojave population of the desert tortoise.

1) Physical Characteristics and Behavior

The desert tortoise (*Gopherus agassizii*) is one of four living species of tortoises in North America (Germano 1989); the other three are the Berlandier's (= Texas) tortoise (*G. berlandieri*), the gopher tortoise (*G. polyphemus*), and the Mexican bolson tortoise (*G. flavomarginatus*). All four species are strictly terrestrial and herbivorous.

The complete habits and life history of the desert tortoise are not fully known, but certain aspects of its behavior (e.g., burrowing, seasonal activity, foraging, reproduction, and habitat utilization) have been well documented.

a) Appearance and Size

An adult desert tortoise has a domed carapace (shell) and relatively flat, unhinged plastron (ventral portion of shell) (Figure 1). The shell is made of an epidermis of keratinaceous scales over bony dermal plates (scutes); the ribs and vertebrate are fused to the carapace. Shell color is brownish, with yellow to tan scute centers and mottling on the plastron (Stebbins 1954). The forelimbs are adapted for burrowing, with laterally extended limbs and flattened feet, enlarged and horny scales, and broad nail-like claws. Rear legs are rounded and elephantine. The head is rounded in the front and has a blunt, horny beak; eyes have greenish irises. Skin that is unprotected by horny plates is thin and easily penetrated. Males are distinguished from females by a rounded posterior carapace (Karl 1992); longer, upcurved gular plates on the anterior portion of the plastron; chin glands; concave plastron; and longer tail (Ernst and Barbour 1972).

Adult desert tortoises range in size from 9.25 to 14.5 inches (23.5 to 36.8 cm). Hatchlings are about the size of a silver dollar, 1.4 to 1.8 inches long (36 to 45 mm), and resemble adults except that their shells are spongy and paler and their eyes more gold

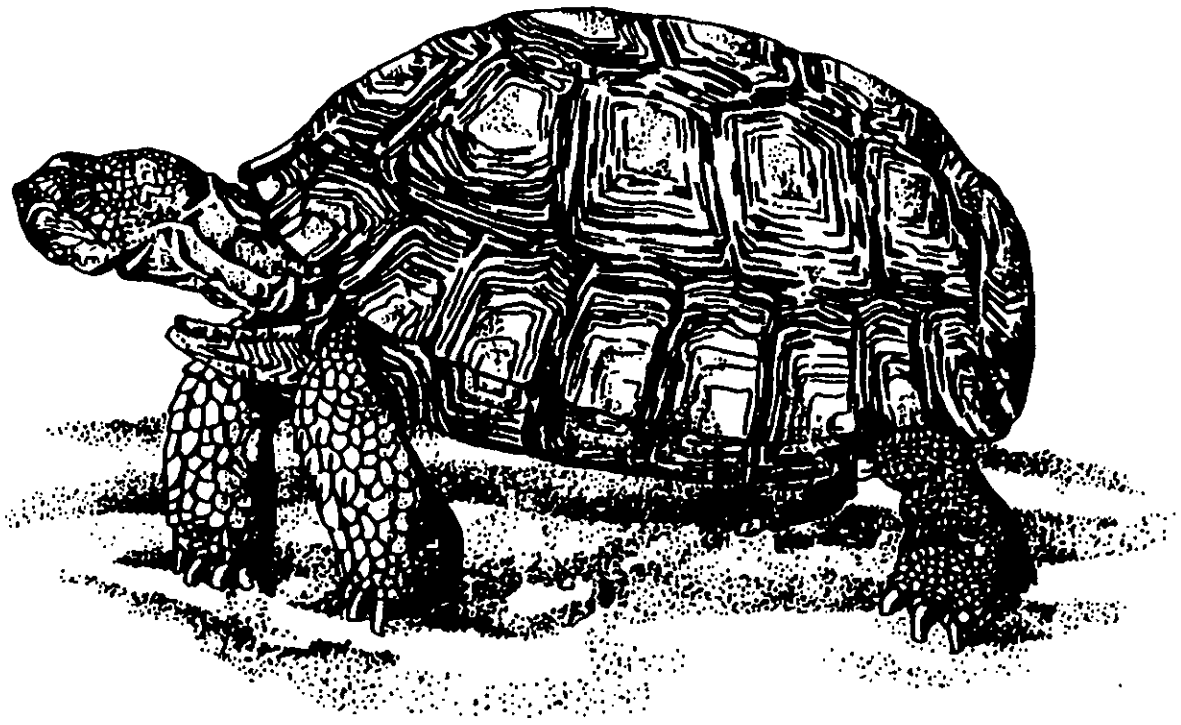


FIGURE 1. DESERT TORTOISE *(Gopherus agassizii)*

(Stebbins 1954). By the time tortoises reach approximately five years of age (about 3 inches [80 mm] in length), their shells have hardened considerably. Epidermal scales, or scutes, form conspicuous growth annually, which wear away due to abrasion with soil and rocks. The shells of old tortoises are quite smooth and somewhat concave in the scute centers.

There are three distinct shell phenotypes in the United States which coincide reasonably well with the mitochondrial DNA genotypes found north of Mexico (U.S. Fish and Wildlife Service [USFWS] 1993) (see Genetic Subunits below): (1) the California phenotype from California and southwestern Nevada; (2) the Sonoran Desert phenotype from Arizona south and east of the Colorado River and; (3) the Beaver Dam slope phenotype from extreme southwestern Utah and Arizona north of the Grand Canyon (USFWS 1993).

b) Age and Sex Structure

Desert tortoises are a long-lived species, with a recorded life span for a captive female tortoise of over 80 years (Glenn 1983). Current longevity estimates range between 30 and 70 years (Luke et al. 1991). Based on carapace size and wear classification, Germano found that desert tortoise ages rarely exceed 40 years, although Hardy recaptured several marked adult tortoises up to 30 years later (Germano 1992). Given that it takes 15 to 20 years for a desert tortoise to reach adult size, the age of these individuals would be at least 45 to 50 years. These tortoises may have been much older at the time of original capture. Natural mortality is highest in young tortoises and decreases with increased size and shell ossification.

The Bureau of Land Management (BLM) has categorized tortoise sizes based on length using the following classes: hatchlings and very young tortoises (<100 mm), juveniles (100 to 179 mm), subadults (180 to 207 mm) and adults (>207 mm). It should be noted that these classes, while commonly used, are artificial. Breeding-age tortoises, for example, may end up being classed as subadults because of their size, even though they have reached maturity.

Generally, the age structure of stable tortoise populations has been difficult to assess. Hatchlings and juveniles are hard to detect and are assumed to have significantly higher mortality rates than adult tortoises. In 1990, two clearance surveys in Las Vegas Valley, Nevada, were conducted. The age structures of these two populations were 24 percent juvenile, 39 percent immature, 7 percent subadult, and 30 percent adult; and 21 percent juvenile, 29 percent immature, 12 percent subadult, and 38 percent adult (Knowles et al. n.d.).

Desert tortoises are considered to be a K-selected species, meaning that they have a low birthrate, low recruitment of juveniles into the breeding population, low mortality in

older age categories, and a low population turnover rate (Hohman et al. 1980). Preadult mortality averages 98 percent (Wilbur and Morin 1988; Turner et al. 1987; USFWS 1993). As a result, the number of adults may remain constant for relatively long periods, during which the ratio of adults to other age groups may vary widely. Next to the number of breeding adults, the number of juveniles likely to join the ranks of adults is a critical component of a stable population. However, it is not currently known what the ratio of adults to juveniles is among local tortoise populations or what juvenile to adult ratio is necessary to maintain a stable population.

Under reasonably favorable conditions, a desert tortoise population might be able to grow at an average rate of one percent per year. Desert tortoise populations can withstand high rates of natural juvenile mortality as long as the probability of adults surviving each year does not drop below approximately 98 percent. Thus, the desert tortoise is extremely vulnerable to extinction in areas in which the probability of adult survival has been significantly reduced (USFWS 1993).

Sex ratios often provide a profile of the general health and stability of a population. One study of tortoises at 18 sites in California showed sex ratios that approximated 1:1 (Turner and Berry 1984). Similarly, another study on BLM plots in the Mojave and Colorado deserts found no significant difference in numbers of males to females over time (Luke et al. 1991).

c) Genetic Subunits

The desert tortoise, as well as other members of the family of Testudinidae (land tortoises), has a chromosome number of 2N=52. The desert tortoise differs in karyotypic details from other genera in this family (Stock 1972) and has hybridized successfully in captivity with both Berlandier's tortoise and gopher tortoise (Hohman et al. 1980).

Based upon electrophoresis of alloenzymes in serum and tissue, Jennings (1985) did not find fixed genetic differences among samples of desert tortoises; however, phenograms generated from genetic distance values suggest two major population groupings that correspond roughly with the Mojave region and Sonoran Desert in Arizona. In addition, a plasma protein was polymorphic in samples from the Mojave Desert and monomorphic in samples from the Sonoran Desert (Glenn et al. 1990).

Using mitochondrial DNA restriction-fragment polymorphisms, Lamb et al. (1989) described three major genetic units for the desert tortoise.

1. One unit is located north and west of the Colorado River and is referred to in the federal listing of the species as the Mojave population. The Mojave population has been further divided into eastern and western subgroups (see Distribution of Species and Habitat below).

2. A second is located south and east of the Colorado River in the Sonoran Desert from west-central Arizona to central Sonora and is referred to as the Sonoran population.

3. The third major unit is found in southern Sonora and Sinaloa, south of the Yaqui River.

Thus, based on genetic criteria, the desert tortoise is divided into at least two well-differentiated entities, one in the Mojave region and one in the Sonoran Desert in Arizona. A third may exist in Sonora and Sinaloa, Mexico (USFWS 1993).

d) Burrowing

Desert tortoises rely on burrows and other forms of cover to regulate body heat, using them to escape extremes of hot and cold during the day and night. Burrows also aid in water conservation and protection from predators. Marlow found that tortoises spend 98 percent of their time in burrows (Luke et al. 1991). In southern Nevada, tortoises have been observed using three types of cover: pallets or soil depressions with no soil cover, burrows the approximate width of a tortoise and at least as long as the tortoise, and large openings in rock or caliche (Figure 2).

Tortoise burrows are typically constructed under large perennial plants, such as creosote bush, and can be up to 30 feet in length (Stebbins 1985). These burrows are constructed by tortoises alternately scraping with their forelimbs. When the hole becomes deep enough, the tortoise may turn around and push the dirt out with its forelimbs (Ernst and Barbour 1972). In areas with sandy loamy soil, a burrow the length of the tortoise can be completed in a little more than one hour (Marlow 1979).

Tortoises often reuse the same burrows and use between 12 and 25 primary cover sites in a single year (Burge 1977). Individual sites are often used by more than one tortoise, sometimes simultaneously. In Utah, over 20 tortoises have been found in dens 30 feet long (Woodbury and Hardy 1940).

Tortoise burrows also have been reported to be occupied by several commensal species, including western banded gecko, desert spiny lizard, zebra-tailed lizard, side-blotched lizard, whiptail lizard, desert iguana, night snake, gopher snake, rattlesnake, coachwhip, burrowing owl, poorwill, desert woodrat, Merriam's kangaroo rat, pocket mouse, canyon mouse, white-footed mouse, white-tailed antelope squirrel, desert cottontail, black-tailed jackrabbit, kit fox, feral house cat, and various invertebrates including tarantulas, black widow spiders, brown recluse spiders, and scorpions.

CALICHE BURROW

TYPICAL TORTOISE BURROW, SANDY-LOAMY SOIL

FIGURE 2. TYPICAL DESERT TORTOISE BURROWS

e) Seasonal and Daily Activity

Desert tortoises are ectotherms and depend upon external sources for body heat. They also are heterotherms and regulate their body temperature behaviorally. Tortoises are active only during the warmer months of the year, with greatest activity in the spring with the emergence of annual vegetation for foraging. Their active season begins in early March and ends in late October or early November, when they retreat to burrows and remain dormant through the winter to avoid cold temperatures and food shortages. Tortoises also are relatively inactive during the peak of summer, except during cool spells or storms when they emerge to replenish food and water stores for the winter.

Daily activity during their active season is dictated largely by temperature. Tortoises are active between ambient temperatures of 65 and 105 degrees Fahrenheit (18 to 42 degrees Celsius) (Karl 1992). They show a bimodal pattern of daily activity, becoming active in the morning shortly after daylight, retreating to burrows when ambient temperatures rise above 105 degrees Fahrenheit, and becoming active again in late afternoon as temperatures decrease. Nocturnal activity is rare. It is likely that individual activity bouts are shorter for juvenile tortoises than adults, since their surface area to volume ratios are larger, resulting in faster heating and cooling rates.

f) Hydration

In adverse conditions, desert tortoises retreat to burrows or caves at which time they reduce their metabolism and loss of water and consume very little food. Adult desert tortoises lose water at such a slow rate that they can survive for more than a year without access to free water of any kind (USFWS 1993). During a recent drought, the desert tortoises at a study site in eastern California not only survived with very little food or water, but they produced an average of three eggs per female per year (USFWS 1993).

Rainfall appears to have an effect on activity patterns. When summer storms bring rainfall, tortoises have been observed to emerge from burrows to drink, even in suboptimal temperatures (Medica et al. 1980). This ingestion of rainwater is considered critical to maintaining water balance in desert tortoises. It also has been associated with a resumption of feeding during dry summer months when available forage is low in water content and high in salts.

g) Foraging

Tortoises typically forage in the early morning and late afternoon and may range up to several hundred yards away from their burrows during normal daily forays (Marlow 1979). In general, their diet is composed mainly of forbs (herbaceous plants) and grasses (Table 1). In southern Nevada, these plants bloom primarily from March to May and, depending on rainfall, in early fall. Other forage includes desert mallow, succulents, and

TABLE 1
DESERT TORTOISE FORAGE PLANTS

Genera of Annual Plants	Species of Perennial Grasses
Astragalus	Galleta grass
Camissonia	Bush muhly
Coreopsis	Indian ricegrass
Cryptantha	
Erodium	
Euphorbia	Succulents
Gilia	Cottonhop cactus
Lupinus	Beavertail cactus
Malacothrix	Pencil chollas
Mentzelia	Pencil cactus
Phacelia	
Plantago	
Species of Annual Grasses	**Other**
Six-weeks grama	Flowers
Brome grass	Fruits
Red brome	Range ratany
Red chess	Desert straw
Six-weeks fescue	Desert mallow
Schismus grass	

SOURCE: Clement 1990.

non-native species (e.g. *Schismus barbatus*) that have been introduced in connection with livestock grazing (Berry and Burge 1984).

Both spring annuals (forbs) and perennial grasses are required by tortoises for survival and viability. Spring annuals, which contain a higher protein content than perennial grasses, are valuable nutrition sources for reproduction (Jarchow and May 1989). Fibrous foods, such as perennial grasses, are fermented in the digestive process producing fatty acids, which are a major source of energy in herbivores. These grasses are utilized during the dry months preventing malnutrition and subsequent catabolism, metabolism of body tissue as a nutrient source.

Tortoises also exhibit definite preferences for plant types, primarily consuming ephemeral forbs and grasses and perennial grasses (Burge and Bradley 1976; Hansen et al. 1976; Coombs 1979; Nagy and Medica 1986.) Preferences appear to vary with geographic location and plant community composition but seem to be somewhat independent of forage availability. Coombs (1979) and Burge and Bradley (1976) found a high preference for perennial grasses despite their low availability relative to forbs. Burge and Bradley (1976) also found a preference for the annual plantain (*Plantago insularis*) far in excess of its availability.

h) Reproduction

Desert tortoises are believed to reach sexual maturity at approximately 17 to 20 years of age (Turner et al. 1987). Courtship and mating typically occur in the spring but also have been reported in early summer and fall (Ernst and Barbour 1972; Hampton 1981). Courtship involves ritualized head bobs, gaping, and biting by males; shell drop, withdrawal, and walking away by females. Not all courting tortoises copulate (Berry 1986), and not all adult tortoises within a population reproduce.

Nest construction and egg deposition occur primarily from May through July. Females lay one to three clutches a season (Turner et al. 1984; Turner et al. 1986). Clutches consist of 1 to 14 eggs, typically 5 or 6, with a larger female generally producing more eggs per clutch (Grant 1936; Ernst and Barbour 1972). Eggs are elliptical to nearly spherical in shape, about 1.6 inches (40 mm) in length. High rainfall years and increased available forage will typically lead to greater clutch frequency (Luke et al. 1991). Preferred nesting times are early morning and late afternoon, consistent with activity periods (Hampton 1981; Ernst and Barbour 1972). Nests are constructed in the bottoms or near the opening of burrows in sandy soil (Hampton 1981; Hohman et al. 1980; Turner et al. 1986). It is dug by the female with its hind feet and is limited in size by the distance that the hind legs can be extended. Maximum nest diameter and depth is about 14 inches (104 mm). Soil is scratched back into the nest cavity after the eggs are laid, and the female may urinate into the cavity before or after covering it with soil (Paterson 1971).

Natural incubation periods range from 90 to 130 days, although intervals longer than 180 days have been reported (Hohman et al. 1980; BLM 1990; USFWS 1991). Hatching occurs from mid-August to October, with a peak in September and early October (Ernst and Barbour 1972). Luckenbach (1982) found that hatchlings do not spend much time on the surface. After hatching, they dig or locate an existing burrow, ignoring food and water, and begin dormancy.

i) Home Range and Movement Patterns

Based on data for desert tortoises in California, Arizona, Nevada, and Utah, the average home range of a tortoise is estimated to be between 27 and 131 acres (11 and 53 hectares) (Berry 1986). Observed ranges appear to vary seasonally, growing larger even when forage is relatively abundant (Burge 1977). Females typically have smaller home range areas than males. Hatchlings and juveniles restrict their activities to small home ranges associated with one or two burrows. Berry found that the average radius of a juvenile's home range may be 164 feet (50 m) or less (Luckenbach 1982).

Long-term movement patterns for individual tortoises and whole population groups are not well known. For example, it is not known how far an individual tortoise travels over the course of its lifetime and in what patterns. It is also not known which individuals and groups are likely to migrate to other habitats, how long such migrations take, and what conditions prompt or prohibit such movement. However, tortoises have been reported to move a distance of over four miles during an extended period of time (BLM 1990).

j) Social Behavior

Social behavior of desert tortoises is not well known but may be similar to that exhibited by large, highly aggressive, polygynous lizards (Berry 1986). Dominance hierarchies established by agonistic encounters are believed to exist among wild populations and are thought to be maintained by visual and chemical signals rather than by frequent physical contact. Passive avoidance of larger, more dominant tortoises by subordinates may be a common feature of the social system and may have implications for relocation efforts (Berry 1986).

2) Habitat Characteristics

The characteristics of the habitat occupied by the desert tortoise reflect the species' burrowing and foraging behavior and physiological climatic constraints. Conditions include but are not limited to an appropriate mix of vegetation and soils, together with access to seasonal food and water sources.

a) Vegetation

Perennial vegetation is essential to the desert tortoise for cover and also protects some types of annuals found in the understory. The roots of perennials also provide stability to the soil, thereby improving the substrate for burrowing. Creosote bush is the dominant perennial shrub in the Mojave Desert and is an indicator of tortoise habitat (Karl 1983) (Figure 3). In Nevada, California, and Utah, tortoises are found in low densities in creosote bush in blackbrush scrub ecotones and in creosote bush in saltbush scrub communities, but rarely where creosote bush is entirely absent from the surrounding community.

b) Soils and Topography

Tortoises generally are found in areas where the soils are suitable for burrow construction, such as loamy sand and sandy loams; Aeolian windblown sand, talus, and cobbly substrates are not preferred and rarely occupied (Karl 1983; Wilson 1989). They also occupy cavities in overhanging ledges, caliche, and rocks (Woodbury and Hardy 1948; Karl 1983). Burrow construction occurs on flats and sloping bajadas, as well as on the relief provided by wash banks, berms, hillsides, and mountain slopes (Karl 1983).

It is thought that soils largely determine habitat and distribution of the desert tortoise. Hardy determined that the soil must be sufficiently free from rocks to permit digging and compact enough to maintain a strong archway over the burrow (Wilson and Stager n.d.). Woodbury and Hardy (1948) found that tortoise habitat types are restricted to suitable soils for den construction. Luckenbach (1976) noted that preferred habitat types in the Providence Mountains region were areas with good denning potential, having soil characteristics of sandy loam to light gravel clay. Data collected by Wilson and Stager (1988) in Piute Valley corroborate earlier findings and go further to suggest an association between specific soil properties and tortoise density and distribution.

Soil characteristics identified in the above studies were available water capacity (AWC), *soil consistency, depth to a limiting layer, rock fragment content, soil salinity,* soil temperature, and frequency of flooding. Generally, the greater the AWC, the more vegetation produced for forage and cover. Soils with good structural stability and little to no digging limitations appear to provide better burrow locations. Shallow soils have limited burrowing potential. Inset fans and washes cutting through some shallow soils often expose caliche, where some burrowing occurs. Mean annual soil temperature of 59 degrees Fahrenheit at a depth of 20 inches seems to coincide with the northernmost geographic distribution of the desert tortoise in Nevada.

Tortoises are primarily found between 1,300 and 4,000 feet elevations, in desert areas with similar climatic conditions. However, they have been found as high as 4,800 feet in Nevada (Karl 1979), at 7,000 feet in the Providence Mountains of California, and below mean sea level in Death Valley National Monument. USFWS considers all areas within

FIGURE 3. TYPICAL DESERT TORTOISE HABITAT - CREOSOTE SCRUB / YUCCA PLANT COMMUNITY

the Mojave and Sonoran deserts up to 5,000 feet in elevation as potential desert tortoise habitat.

3) Distribution of Species and Habitat

Tortoise population densities vary widely within the species' range from none to more than 1,500 animals per square mile (577 per square kilometer). Densities appear to be controlled largely by habitat suitability but also are likely to be influenced by disease, predation, and degrees of illegal collection and vandalism. In southern Nevada, densities are estimated to range up to about 250 tortoises per square mile. Two clearance surveys in Las Vegas Valley, Nevada, contained densities of 118 and 109 desert tortoises per square mile (Knowles et al. n.d.).

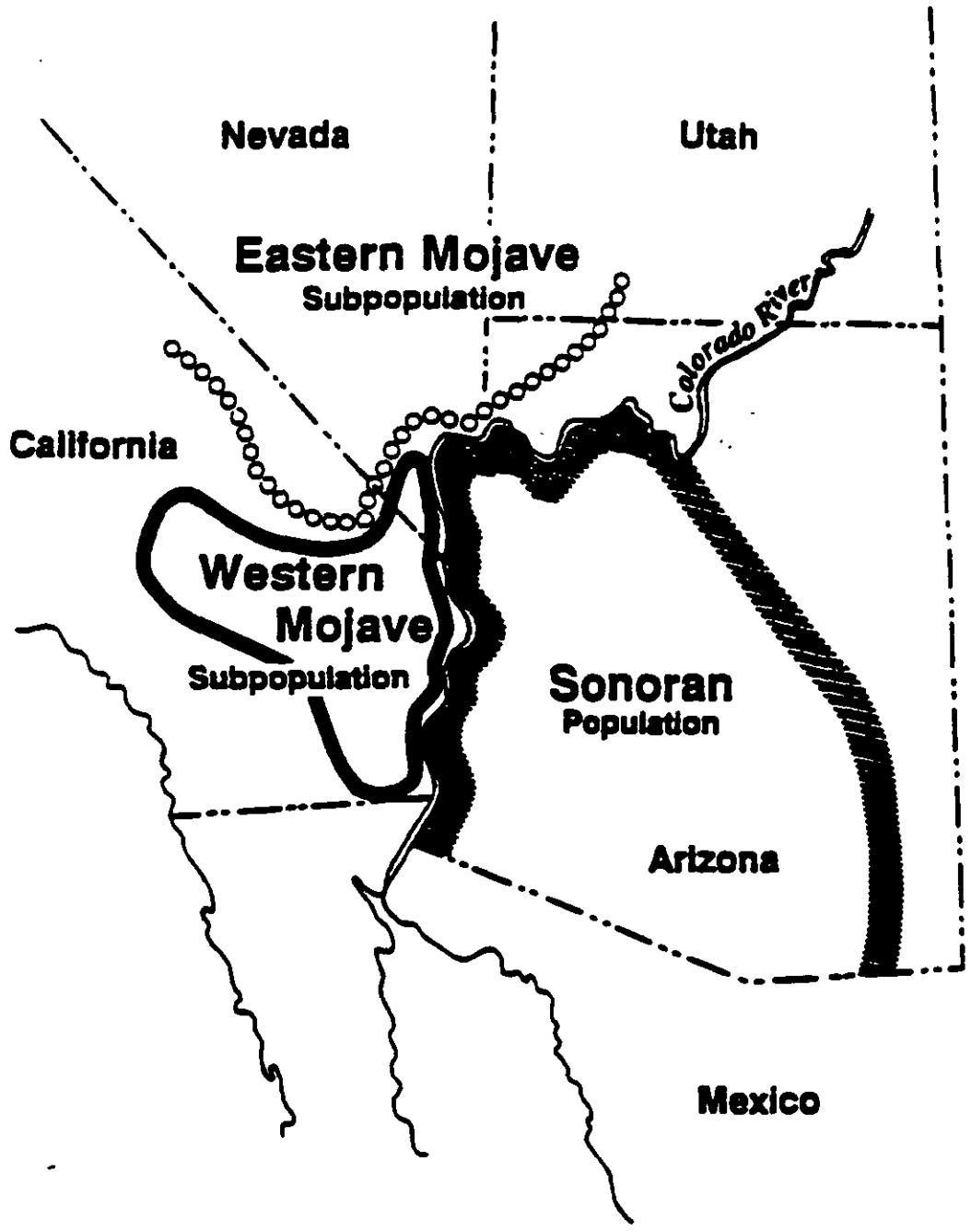
a) Historic and Current Distribution

Historically, the desert tortoise was distributed widely throughout the deserts of California; Nevada; Utah; Arizona; and Sonora, Mexico, extending as far south as Sinaloa, Mexico (Iverson 1987). Current distribution is considerably more patchy within the historic range. As previously noted, two genetically distinct groups have evolved, the Mojave and Sonoran, with the Mojave group further divided into eastern and western subgroups (Figure 4).

The USFWS estimates that based on plot data from eight sites in California, populations have declined at rates of 10 percent or more for the last six to eight years (USFWS 1989). Growth rates calculated for 16 study plots in California, Nevada, and Arizona indicate that some local populations may be decreasing by as much as 20 percent per year (see Appendix C).

In Nevada, 90 percent of the remaining habitat is believed to have population densities of less than 50 tortoises per square mile (<19 per square kilometer). The USFWS noted declines in tortoises on the Beaver Dam Slope of Utah and Arizona and a decline of juveniles in the remaining east Mojave population (including Clark County), but data are insufficient to indicate a clear trend in overall populations in Nevada. Luke et al. (1991) concluded that tortoise populations in the western and central Mojave are declining.

All of Clark County falls within the historic range of the tortoise. Except for Las Vegas Valley and other urban areas, tortoise distribution in Clark County is widespread, although local population densities may be very patchy. Urban development in Las Vegas Valley has all but eliminated what may have been one of the largest and densest tortoise populations in Nevada. In addition, the remaining habitat in Clark County has been fragmented by major roads, power-line corridors, urban development, off-highway vehicle (OHV) activities, and other land uses. In fact, habitat fragmentation may be such



State Boundary

Source: Adapted from Soang et al. (1988)

NOT TO SCALE

FIGURE 4. DESERT TORTOISE POPULATION DISTRIBUTION

that tortoises in Las Vegas Valley have already been effectively isolated from other populations.

b) Distinctive Population Segments of the Desert Tortoise (Recovery Units)

As a general rule, most widespread species show substantial geographic variation in genetic, morphological, ecological, physiological, and behavioral traits. The desert tortoise is no exception to this generalization, and groups of populations within the Mojave region exhibit different habitat preferences, food habits, periods of activity, selection of sites for burrowing and egg laying, and social behavior. The Endangered Species Act (ESA) provides protection to any distinct population segment (evolutionarily significant unit) of any listed species. Data from a variety of sources indicate that there are at least six evolutionarily significant units (recovery units) of the desert tortoise within the Mojave region (USFWS 1993).

The draft Desert Tortoise Recovery Plan identifies six distinct population segments or recovery units within the range of the Mojave desert tortoise population (see Figure 3 of the recovery plan). Preserving viable populations of desert tortoises within each of these units is essential to the long-term recovery, viability, and genetic diversity of the species. Clark County includes portions of the Eastern Mojave Recovery Unit and the Northeastern Mojave Recovery Unit (see Figure 9 of the recovery plan). Within each recovery unit, desert wildlife management areas (DWMAs) will be identified in which recovery action will be implemented to provide for conservation of the tortoise and its ecosystem (USFWS 1993).

1. Northern Colorado Recovery Unit is located completely in California. Desert tortoises are found in washes as well as in other habitat types. They feed on summer and winter annuals, den alone, and burrow under shrubs. They have the California mitochondrial DNA haplotype and phenotype.

2. Eastern Colorado Recovery Unit is also located completely in California. These desert tortoises occupy well-developed washes, desert pavements, piedmonts, and rocky slopes characterized by relatively species-rich succulent scrub, creosote bush scrub, and blue palo verde-ironwood-smoke tree communities. They feed on summer and winter annuals and some cacti, den alone, and use shallow burrows in bajadas. These tortoises also have the California mitochondrial DNA haplotype and shell type.

3. Upper Virgin River Recovery Unit is at the extreme northern edge of the species' range near St. George, Utah. These desert tortoises live in a complex topography consisting of canyons, mesas, sand dunes, and sandstone outcrops where the vegetation is a transitional mixture of sagebrush scrub, creosote bush scrub,

blackbrush scrub, and sand dune/sandy soil community. In this environment sandstone and lava caves are used, often by two or more tortoises, instead of burrows; tortoises travel to sand dunes for egg laying and use other habitats for foraging. Shell morphology and mitochondrial DNA have not been studied in this recovery unit, but allozyme variation is similar to that found in the Northeastern Mojave Recovery Unit.

4. Eastern Mojave Recovery Unit is primarily in California but also extends into Nevada in the Amigos, Pahrump, and Piute valleys. This recovery unit is isolated from the western Mojave by the Baker Sink, where desert tortoises are not known to occur. Because this region receives both winter and summer rains which results in two distinct annual floras on which they can feed, these tortoises are often active in late summer and early autumn in addition to spring. These tortoises occupy a variety of vegetation types and feed on summer and winter annuals, cacti, perennial grasses, and herbaceous perennials. The tortoises in this area den singly in caliche caves, bajadas, and washes. In this recovery unit, desert tortoises have both the California and southern Nevada mitochondrial DNA haplotype and the California shell type. These tortoises are also differentiated from desert tortoises in the Northeastern Mojave Recovery Unit at several allozyme loci.

5. Northeastern Mojave Recovery Unit primarily occurs in Nevada but extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. In this recovery unit, tortoises usually occur in creosote bush scrub communities of flats, valley bottoms, alluvial fans, and bajadas, but occasionally use other habitats such as rocky slopes and blackbrush scrub. Tortoises usually den in groups of two or more in caliche caves in bajadas and washes and typically eat summer and winter annuals, cacti, and perennial grasses. Three mitochondrial DNA halotypes are found in this recovery unit, but they exhibit low allozyme variability with relatively little local differentiation. A distinctive shell phenotype occurs in the Beaver Dam Slope region.

6. Western Mojave Recovery Unit is completely in California. Desert tortoises occur primarily in valleys, alluvial fans, bajadas, and rolling hills in saltbush, creosote bush, and scrub steppe communities. They dig deep burrows (usually located under shrubs on bajadas) for winter hibernation and summer estivation. These desert tortoises generally den singly. In the western Mojave, aboveground activity occurs primarily in the spring when the animals forage on winter annuals, some perennial grasses, and cacti. These desert tortoises are adapted to a regime of winter rains and rare summer storms. They have a California mitochondrial DNA haplotype and a California shell type.

Two of these recovery units occur in the plan area. The southern TMA is in the Piute-Eldorado DWMA which is in the Eastern Mojave Recovery Unit. The northern TMA is the Coyote Spring, Mormon Mesa, and Gold Butte-Pakoon DWMAs in the Northeastern Mojave Recovery Unit.

4) Decline Factors

The single greatest threat to the continued existence of the desert tortoise in Clark County has been and continues to be loss and degradation of habitat. Other factors are believed to include predation of juvenile tortoise by common ravens, spread of an upper respiratory tract disease, illegal collection, vandalism, and road kills. The opinion of most biologists familiar with the species is that the tortoise is unlikely to survive over the long term in southern Nevada without the direct aid of some form of habitat conservation or recovery plan.

a) Habitat Loss and Degradation

Tortoise habitat has been lost to and deteriorated by urban development, highways, power-line corridors, large-scale water development, mineral extraction, military activities, OHV activities, livestock grazing, and other land uses (USFWS 1989; Spang et al. 1988). Fragmentation of the remaining habitat, especially within Las Vegas Valley, poses the additional threat of isolating already low-density populations and further reducing their genetic viability.

As previously noted, existing urban development has already removed prime habitat in Clark County. Ongoing development will result in additional loss of habitat and is likely to have indirect and cumulative adverse impacts on surrounding habitat areas.

Highways and roads displace habitat when being built; act as mortality sinks for local tortoises, especially the breeding cohort; and isolate local tortoise populations by imposing physical barriers to tortoise movement (Nicholson 1978). Nicholson (1978) found that tortoise densities were negatively affected within one mile of a road with an average daily traffic greater than 180 vehicles, especially the habitat within a half mile of the road. Karl (1992) found similar results in a study of an 18-year-old freeway, with a significant decrease in density within the first one-half mile from the freeway. More importantly, however, the density of the breeding cohort of the local population appeared to be strongly depressed within two miles of the freeway. It is estimated that existing highways and roads in Clark County currently affect 2,000 square miles of tortoise habitat.

OHV activities pose direct and indirect impacts, such as destruction of tortoises and damage to their habitat, including decreased forage vegetation due to soil compaction and increased wind erosion (Bury 1978; Adams et al. 1982, 1984; Bury and Luckenbach

1983; Brattstrom and Bondello 1983; Luke et al. 1991). Noise impact may also negatively affect the tortoise, but this topic needs to be studied (Luke et al. 1991). Most OHV activity in Clark County is on public lands, including known tortoise habitat areas.

Livestock grazing has occurred on 90 to 93 percent of the existing tortoise habitat in California and Arizona (Luke et al. 1991). The overall effects of livestock grazing on the tortoise are believed to include competition for forage, loss of habitat, damage to burrows, destruction of tortoises, and introduction of plant species with limited nutritional value for the tortoise. Domestic sheep are particularly destructive to tortoise habitat, reportedly removing all traces of annual forbs and grasses (USFWS 1991). A tortoise with a paralyzed limb that had been fitted with a radio transmitter was removed from its burrow and apparently had been crushed by cattle (USFWS 1991). Berry suggests that the most severe impacts to the tortoise and its habitat occur in the areas utilized for loading and unloading of cattle, supplemental feeding, watering sites, and salt licks (USFWS 1991). Given the vast acres of land permitted by BLM for grazing in Clark County, the potential damage to the species and its habitat over the long term could be enormous. Grazing by wild horses and burros occurs throughout Clark County and could also contribute to negative impacts to tortoises, as discussed above.

b) Disease

Upper respiratory tract disease (URTD) is a chronic infectious respiratory disease that may be responsible for or may have contributed significantly to the decline of local tortoise populations (Jacobson 1992). URTD has been observed in wild desert tortoise populations in the western and central Mojave Desert, southern Nevada, Saguaro National Monument in Arizona, and the Beaver Dam Slope in Utah/Arizona (Rosskopf 1988, 1989; FaunaWest Consultants 1989; Jacobson 1992). Until 1990, there were only anecdotal reports that the disease occurred in Clark County (Berry and Slone 1989); however, recent reports indicate that URTD has become extensive within this area.

URTD is a transmissible disease, and one prevalent theory is that it has been transmitted to the wild population by released captive tortoises who carry the disease. Clinical signs of respiratory diseases in captive tortoises have been recognized for two decades. However, this may be an artifact of sampling, and URTD may be an endemic to which stressed tortoises are subject. Moreover, URTD symptoms were observed in wild populations in the 1930s.

Scientific evidence supports the belief that *Mycoplasma* (small primitive bacteria) is the infectious agent responsible for URTD (Jacobson 1992). Synergistic effects between *Mycoplasma* and *Pasteurella* have been reported in infected cattle (Jacobson and Gaskin 1990; Jacobson 1992) and could also play a role in URTD. The only direct consequence of the disease agent is the loss of the ciliated epithelial lining in the nasal sinus of the tortoises. It is unknown whether other disease-associated factors such as high levels of

urea, sodium, or cholesterol in the blood; low hemoglobin counts and phosphorus concentrations; and/or higher concentrations of mercury and iron in the liver appear before or after contracting the disease (Luke et al. 1991).

Environmental factors, such as the severe several-year drought in the Mojave Desert and probable long-term effects from livestock grazing, also may have weakened tortoises. Other effects, such as the toxins in pesticide residues and air pollution, also may influence the effects of URTD.

Two other diseases have been documented and resulted in the death of tortoises, osteoporosis, and shell necrosis (Luke et al. 1991). Shell necrosis appears to have played a significant role in the recent decline in the tortoise population along the Chuckwalla Bench in the Colorado desert of California. Little is known about the extent, cause, and probabilities of contracting or recovering from these diseases.

c) Predation

In California, predation of young tortoises by ravens is considered a serious problem (BLM 1990). The raven was considered to be uncommon in California before the 1940s, but its population has grown dramatically since then in association with the increased presence of man. Juvenile tortoises have a softer carapace which can be easily penetrated by ravens. Numerous tortoise carcasses have been reported below raven nests and perching sites (BLM 1990). Ravens are opportunistic feeders and excel at scavenging and pirating from other predators (Luke et al. 1991). Although ravens have been observed directly preying upon juvenile tortoises (BLM 1990), it is unknown whether the majority of tortoises they consume are from direct predation or from scavenging and pirating.

Breeding bird surveys in the Mojave Desert of California, Nevada, and Utah measured a 15-fold increase in ravens between 1968 and 1990. In general, the spread of the raven population has been attributed to the urbanization of desert areas, including highways, transmission lines, and landfills that create opportunities for raven foraging, roosting, and nesting. Raven predation is suspected of being responsible for reduced numbers of hatchlings, reduced recruitment of juveniles into the adult population, overall shift in the age structure of tortoise populations, and general population decline in certain portions of the tortoise's range. In Clark County, and Las Vegas Valley in particular, the raven is still considered an uncommon species but is increasing in number. Raven predation on juvenile tortoises has been documented in Piute Valley and at Sheep Mountain, but the extent of such predation is not known.

Other predators of the tortoise and tortoise eggs include coyotes, bobcats, badgers, skunks, kit foxes, ring-tailed cats, domestic dogs, golden eagles, hawks, roadrunners, burrowing owls, gopher snakes, larger rattlesnakes, and larger coachwhips.

BLM is currently proposing a management plan for the monitoring and control of raven populations in the California Desert Conservation Area, including a number of lethal and nonlethal control methods (BLM 1990).

d) Illegal Collection

USFWS cited illegal collection as one of the reasons for the tortoise's decline and subsequent listing. Within Las Vegas Valley, however, illegal collection may have declined somewhat in recent years due to the fact that a supply of domesticated tortoises is readily available for adoption through the Tortoise Group, a volunteer organization. However, there is some concern that local restrictions on owning tortoises outside of urban areas of Clark County may be providing an incentive for people living in other communities to obtain tortoises illegally.

e) Other Factors

Other factors which may contribute to the tortoise's decline include drought, air pollution, and fire. Long-term effects of drought on the tortoise are not known. However, prolonged periods of drought clearly limit the tortoise's primary food and water sources. Such conditions are likely to directly affect the tortoise's ability to maintain body condition and water balance. Also, prolonged drought conditions may indirectly affect breeding because tortoises are likely to respond with reduced activity levels. It has been shown that the amount of rainfall, and hence forage yield, strongly affects the number of clutches laid and the growth rates of desert tortoises (USFWS 1991). In addition, drought conditions may affect survival rates among the nonadult cohort because of their low storage capacity and special forage requirements. The long-term effects of this condition would not be felt by the population for as many as 20 years, when the nonadult cohort would become breeders.

Air pollution may affect desert tortoises directly through inhalation of toxins and indirectly through damage to vegetation or consumption of toxins taken up by forage plants. However, toxic effects of criteria air pollutants on reptilia have not been studied. In mammals, pollutants can cause irritation of the respiratory tract, eyes, and other sensitive membranes and inhibit oxygen transport (Clement Associates 1990). Studies also suggest that some desert plants used by the tortoise are sensitive to ozone.

The role of fire in tortoise habitat is poorly understood, but tortoises are not typically found in early successional stages following fires. OHV use has been identified as an ignition source for wildfires in Clark County and, as such, increases the potential for fire damage in many habitat areas. Invasion of non-native annual grasses due to livestock grazing increases fire frequency, and these plant species are far better at fueling a range fire than perennial native grasses (USFWS 1991).

Other factors that may be adversely affecting tortoises in Clark County include vandalism by shooting or turning over tortoises, illegal dumping, illegal gravel mining, illegal OHV use, domestic and feral pets, and "squatting" on undeveloped lands.

5) Recovery

On March 30, 1993, the USFWS released the Draft Recovery Plan for the Desert Tortoise (Mojave population). The draft recovery plan presents a conservation strategy that applies the principles of conservation biology and population modeling and uses current desert tortoise research data. The plan describes a strategy for recovery and delisting of the Mojave population of the desert tortoise.

a) Factors Which Dictate a Slow and Uncertain Recovery

There are several factors which complicate the recovery of the desert tortoise.

1. The desert tortoise has a low population growth rate. The life history strategy of the desert tortoise depends on longevity and reproduction many times over its lifetime. Under reasonably favorable conditions, a desert tortoise population might be able to grow at an average rate of one percent per year. At that rate of growth, it takes 70 years for a population to double. Desert tortoise populations can withstand high rates of natural juvenile mortality as long as the probability of adults surviving each year does not drop below approximately 98 percent. Thus, maintaining high survivorship of adult desert tortoises is the key factor in the recovery of this species (USFWS 1993).

2. Adults cannot be restocked in areas where tortoise populations have declined, because desert tortoises cannot be easily translocated. The complex social behaviors and intimate familiarity with their large home ranges mean that translocating desert tortoises is not likely to be successful (USFWS 1993).

3. Desert tortoise recovery is further complicated by the large area involved. The Mojave region spans several hundred thousand square miles and encompasses four states and two different deserts. Recovery of the desert tortoise requires a cooperative effort between the different state, federal, and local agencies involved (USFWS 1993).

b) Recovery Strategy (Desert Wildlife Management Areas)

The following biological principles provide the framework for development of delisting criteria and the recovery strategy for the Mojave population of the desert tortoise.

1. Preserving viable populations of desert tortoises within each of the six recovery units within the Mojave region (Western Mojave, Northern Colorado, Eastern

Colorado, Eastern Mojave, Northeastern Mojave, and Upper Virgin River) is essential to the long-term recovery, viability, and genetic diversity of the species.

2. Because the number of desert tortoises which actually pass on their genes to the next generation is very low, total population sizes on the order of 10,000 to 20,000 or more would be necessary to preserve genetic variation in the desert tortoise for the long-term. Thus, a stationary or growing population of 25,000 total individuals should be adequate to preserve long-term genetic health (USFWS 1993).

3. A population viability analysis using the best available data and assuming the "worst-case" scenario predicts a minimum population size of approximately 40,000 to 60,000 adult desert tortoises to meet the criterion of a 500-year median extinction time.

4. DWMAs should protect the environments in which the desert tortoise lives. In preserving these environments, other species will benefit, including many rare species. Land managers are encouraged to take a multispecies approach to reserve design and include habitat of other rare or declining species into DWMAs. Such an approach would reduce the need to federally list other species of plants and animals in the Mojave region (USFWS 1993).

The desert tortoise recovery strategy includes:

1. Identification of desert tortoise recovery units within the Mojave region,

2. Establishment of a system of DWMAs within recovery units where management actions are necessary to affect recovery, and

3. -Development and implementation of specific recovery actions within DWMAs and quantitative recovery goals for each recovery unit.

DWMAs must be located in areas with good desert tortoise habitat currently supporting at least 400 adult desert tortoises at a density of no less than 10 per square mile. If possible, they should be large enough to support a viable population (at least 50,000 adult desert tortoises) at target density. Target density is defined as that density which the DWMA is capable of supporting under optimal management for the desert tortoise. Functional corridors between DWMAs should be established whenever possible, because linking DWMAs within a recovery unit with functional habitat corridors may increase the chance of long-term persistence of desert tortoise populations (USFWS 1993).

DWMAs should consist primarily of a limited use zone (LUZ) where human activities that negatively impact desert tortoises should be strictly curtailed. DWMAs may have

some habitat (up to 10 percent, ideally toward the periphery of the DWMA) designated as experimental management zones (EMZs) where certain activities prohibited in the LUZs may be permitted on an experimental basis during the recovery period. Appropriate research activities would further the understanding of desert tortoise ecology and how populations respond to various human impacts.

Given these requisites and extant desert tortoise habitat within the six recovery units, the recovery plan identifies 14 proposed DWMAs. Portions of some DWMAs occur in more than one recovery unit (USFWS 1993). The four DWMAs in Clark County, Nevada, are listed in Table 2:

TABLE 2
DESERT WILDLIFE MANAGEMENT AREAS
IN CLARK COUNTY

DWMA	Average Density (mi^2)	Target Density (mi^2)	Degree of Threat[1]
Coyote Springs[2]	20?	40	2
Gold Butte-Pakoon[2]	20?	50	2
Mormon Mesa[2]	20?	40	3
Piute-Eldorado[3]	40	60	2

[1]Low = 1; extremely high = 5
[2]In Northeastern Mojave Recovery Unit.
[3]In Eastern Mojave Recovery Unit.

c) Recovery Objective and Delisting Criteria

The objective of the recovery plan is the recovery and delisting of the Mojave population of the desert tortoise (USFWS 1993). Populations within recovery units are considered distinct population segments and may be individually delisted if they meet the recovery criteria. Specifically, the population within a recovery unit may be considered for delisting when the following criteria are met:

1. As determined by a scientifically credible monitoring plan, the population within a recovery unit exhibits a statistically significant upward trend towards target density or remains stationary at target density for at least 12 years.

2. Enough habitat must be protected within a recovery unit, and/or the habitat and desert tortoise populations must be managed intensively enough, to ensure long-term population viability.

3. Regulatory mechanisms or land management commitments have been implemented that provide for adequate long-term protection of desert tortoises and their habitat.

4. The population in the recovery unit is unlikely to need protection under the ESA in the foreseeable future.

d) Recovery Actions

If the desert tortoise is to be recovered within its native range, the causes of the declines must stop, at least in some areas. Because there are many political jurisdictions in the Mojave region, implementation of recovery actions will require unprecedented interagency cooperation. Desert tortoises outside of the DWMAs will still be protected by Section 9 of the ESA. Take will be prohibited unless authorized by the USFWS pursuant to Section 7 or 10(a) of the ESA. Habitat outside DWMAs may be important in providing a source of adult desert tortoises for recolonization of DWMAs and corridors for genetic exchange and dispersal of desert tortoises among DWMAs. Isolated healthy populations of tortoises found outside DWMAs should be noted but not actively managed (USFWS 1993).

The recovery plan identifies recovery actions which are needed to reduce or eliminate human-caused impacts in the recovery units and implement the recovery strategy. The recovery actions are as follows:

1. Select DWMAs based on best conservation principles and biology of the tortoise.

2 Delineate DWMA boundaries, including LUZs and EMZs.

3. Secure habitat within DWMAs through acquisition or conservation agreements.

4. Develop reserve-level management within DWMAs which are tailored to the needs of specific DWMAs.

5. Implement reserve-level management within DWMAs.

6. Monitor desert tortoise populations within recovery units, through population trend monitoring.

7. Establish environmental education programs, in schools, museums, hunting clubs, and BLM and NPS visitor centers and interpretive sites.

8. Initiate research necessary to monitor and guide recovery efforts.

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TABLE 2

DESERT TORTOISE HABITAT WITHIN NDOT RIGHTS-OF-WAYS CLARK COUNTY

HWY NO.	MILE POST	TOTAL MILES	TORTOISE DENSITY	VALLEY	ADT
160	0-14	14	med	Las Vegas Valley	3,065
160	14-46.9	32.9	low	Pahrump Valley	2,480
159	NA	12	med	Las Vegas Valley	2,045
159	NA	12	low	Las Vegas Valley	2,045
156	0-10.6	10.6		>5,000 feet	315
156	10.6-17.6	7	low	Las Vegas Valley	315
157	0-9.8	9.8		>5,000 feet	1,375
157	9.8-20.8	11	low	Las Vegas Valley	1,375
158	0-8.9	8.9		>8,000 feet	500
161	0-7.1	7.1	med	Ivanpah Valley	1,235
164	0-4	4	low	Ivanpah Valley	625
164	4-11	7	low	Piute Valley	550
164	11-20	9	low-med	Piute Valley	550
163	0-5	5	med-high	Piute Valley	4,020
163	5-12	7	low	Piute Valley	4,020
163	12-19.5	7.5	low	Colorado River	3,925
165	0-5	5	low-med	Eldorado Valley	195
165	5-14	9	low	Eldorado Valley	195
168	0-5	15	low-med	Meadow Valley	875
168	5-10	5	low	Meadow Valley	875
168	10-17	7	med	Kane Springs Wash	240
168	17-23.8	6.8	low	Kane Springs Wash	240
170	0-3	3	low	Virgin Valley	2,525
170	3-12	9	low-med	Virgin Valley	2,525
144	0-3.2	3.2	low-med	Virgin Valley	4,645
742	NA	.5	low	Virgin Valley	180
169	5.8-24.2	18.4	low	Moapa Valley	3,340
147	NA	7	low	Las Vegas Valley	2,165
604	0-37/50-57.7	44.7	low	Las Vegas Valley	4,250
93	0-6	6	low	Las Vegas Valley	12,000
93*	6-11	5	low	Las Vegas Valley	12,000
93	52-58	6	med-high	Dry Lake Valley	1,360
93	58-68	10	med	Hidden Valley	1,070
93	68-86.6	18.6	med	Kane Springs Wash	1,070

* Four Lanes
ADT: Average Daily Traffic
Note: Areas above 5,000 feet are not commonly used by desert tortoises.

TABLE 2 (continued)

DESERT TORTOISE HABITAT WITHIN NDOT RIGHTS-OF-WAYS CLARK COUNTY

HWY NO.	MILE POST	TOTAL MILES	TORTOISE DENSITY	VALLEY	ADT
95	0-25	25	med-high	Piute Valley	4,565
95	25-56.3	31.3	low	Eldorado Valley	4,725
95*	66-56.3/110-86.7	33	low	Las Vegas Valley	4,185
95*	110-132.1	22.1	low	Indian Springs Valley	3,400
146	0-19	19	low	Las Vegas Valley	5,000
15*	0-23	23	med	Ivanpah Valley	25,065
15*	23-27	4	low	Ivanpah Valley	25,065
15*	33-27/60-46	20	low	Las Vegas Valley	11,085
15*	60-64	4	med-high	Dry Lake Valley	11,085
15*	64-71	7	med	Dry Lake Valley	11,085
15*	71-86	15	med	California Wash	10,755
15*	86-91	5	low	California Wash	10,755
15*	91-93	2	low-med	Virgin Valley	10,020
15*	93-112	19	high	Virgin Valley	10,020
15*	112-123.8	11.8	low	Virgin Valley	10,020

* Four Lanes
ADT: Average Daily Traffic
Note: Areas above 5,000 feet are not commonly used by desert tortoises.

TABLE 3

DESERT TORTOISE HABITAT WITHIN NDOT RIGHTS-OF-WAYS NORTH WEST PORTION OF THE PROJECT AREA

HWY NO.	MILE POST	TOTAL MILES	TORTOISE DENSITY	VALLEY	ADT
6	0-10	10		>6,000 feet	730
264	0-10	10		>5,000 feet	75
264	10-15.5	5.5	low	Fish Lake Valley	75
264	15.5-33.7	18.2		>5,000 feet	75
773	25.5-35.9	10.4		>5,000 feet	70
266	0-29	29		>5,000 feet	135
266	29-40.3	11.3	low	Stonewall Flat	155
774	0-7.5	7.5	low	Oriental Wash	20
267	0-9.4/0-12.1	21.5	low	Sarcobatus Flat	80
265	0-10	10	low	Big Smoky Valley	100
265	10-20.5	10.5	low	Clayton Valley	100
374	0-8.8	8.8	low	Amargosa Desert	1,020
373	0-16.3	16.3	low	Amargosa Desert	700
95	0-21	21	low	Piute Valley	4,565
95	21-25	4	low	Piute Valley	4,565
95	25-39.3	14.3	low	Eldorado Valley	4,725
95	39.3-56.3	17	low	Eldorado Valley	4,725
95*	56.3-66	9.7	low	Las Vegas Valley	4,185
95*	86.7-110	23.3	low	Las Vegas Valley	4,185
95*	0-10/110-132.1	32.1	low	Indian Springs Valley	3,400
95	10-60	50	low	Amargosa Desert	2,000
95	60-72	12	low	Oasis Valley	3,950
95	0-11/72/107.2	46.2	low	Sarcobatus Flat	1,655
95	40-11	29		>5,000 feet	1,720

* Four Lanes
ADT: Average Daily Traffic
Note: Areas above 5,000 feet are not commonly used by desert tortoises.

TABLE 4

DESERT TORTOISE HABITAT WITHIN NDOT RIGHTS-OF-WAYS
NORTH EAST PORTION OF THE PROJECT AREA

HWY NO.	MILE POST	TOTAL MILES	TORTOISE DENSITY	VALLEY	ADT
375	3-12	9	low	Sand Springs Valley	105
375	12-20	8		>5,000 feet	155
375	20-35	15	low	Tikaboo Valley	155
375	26-32	6	low	Railroad Valley	105
375	35-49.7	14.7	low	Pahranagat Valley	190
375	32-49.3/0-3	20.3		>5,000 feet	105
318	0-40	40	low	White River	690
322	0-18.4	18.4		>5,600 feet	40
320	0-10.7	10.7		>5,400 feet	NA
319	50-52	2	low	Meadow Valley	330
319	52-70.9	18.9		>5,000 feet	330
317	37-58.6	21.6	low	Meadow Valley	125
93	0-25/68-86.6	42.6	med	Kane Springs Wash	1,070
93	25-48	23	low	Pahranagat Valley	1,230
93	48-52	4	low	Pahranagat Valley	1,230
93	52-65	13	low	Six Mile Flat	460
93	65-92	27		>5,000 feet	515
93	92-110	18	low	Meadow Valley	1135
93	110-124	14		>5,000 feet	340

* Four Lanes
ADT: Average Daily Traffic
Note: Areas above 5,000 feet are not commonly used by desert tortoises.

TABLE 5

DESERT TORTOISE HABITAT WITHIN NDOT RIGHTS-OF-WAYS
LINCOLN COUNTY

HWY NO.	MILE POST	TOTAL MILES	TORTOISE DENSITY	VALLEY	ADT
375	0-3	3		>5,000 feet	105
375	3-12	9	low	Sand Springs Valley	105
375	12-20	8		>5,000 feet	155
375	20-35	15	low	Tikaboo Valley	155
375	35-49.7	14.7	low	Pahranagat Valley	190
318	0-40	40	low	White River	690
322	0-18.4	18.4		>5,600 feet	40
320	0-10.7	10.7		>5,400 feet	NA
319	50-52	2	low	Meadow Valley	330
319	52-70.9	18.9		>5,000 feet	330
317	37-58.6	21.6	low	Meadow Valley	125
93	0-25	25	med	Kane Springs Wash	1,070
93	25-52	27	low	Pahranagat Valley	1,230
93	52-65	13	low	Six Mile Flat	460
93	65-92	27		>5,000 feet	515
93	92-110	18	low	Meadow Valley	1,135
93	110-124	14		>5,000 feet	340

* Four Lanes
ADT: Average Daily Traffic
Note: Areas above 5,000 feet are not commonly used by desert tortoises.

APPENDIX C

Status, Habitat, and Range

for Other Species Found in Clark County

Plants

Angelica scabrida **-- rough angelica**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992). Sixteen occurrences have been documented for Clark County, six of which occur on private lands. No occurrences have been identified within existing or proposed DWMAs.

Habitat: Canyons with active washes and avalanche paths at high elevations.

Antennaria soliceps **-- Charleston pussytoes**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); restricted to the Charleston Mountains. Not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forests; montane.

Arctomecon californica **-- California bearpoppy**

Status: Federal: C2
State: CE
NNNPS: T

Range: Over 33 percent of the documented occurrences for this species in Nevada (14) are found within Clark County (TNC 1990); 38 percent of these occur on private lands with less than 3 percent occurring within existing or proposed DWMAs. One record also exists on BLM lands identified for disposal. Other populations occur within Lake Mead National Recreation Area on both sides of the border between Nevada and Arizona.

Habitat: California bearpoppy species is found on gravelly desert flats, hummocks, and slopes, often in soil with high concentrations of gypsum, in creosote bush scrub habitat (Mozingo and Williams 1980; Knight, pers. comm. 1991).

***Arctomecon merriamii* -- white bearpoppy**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark, Lincoln, and Nye counties, Nevada, and into California (Morefield and Knight 1992); generally similar to that of *A. californica*. Only three records exist for this species in Clark County (TNC 1990), one of which occurs on private lands. Neither of the remaining occurrences appears to be within an existing or proposed DWMA.

Habitat: In northern Mojave Desert, found infrequently at 2,000-5,500 feet (DeDecker 1984); generally similar to that of *A. californica*.

***Arenaria kingii* ssp. *rosea* -- rosy king sandwort**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); largely restricted to the Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forests; montane.

***Astragalus aequalis* -- Clokey milkvetch**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); restricted to the Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Montane.

***Astragalus amphioxys* var. *musimonum* (*Astragalus musimonum*) -- Sheep Mountain milkvetch**

Status: Federal: C2
State: None
NNNPS: W

Range: Sheep Mountains, Clark County, and Lincoln County, into Arizona (Morefield and Knight 1992). One record of occurrence is within the Piute-Eldorado DWMA, however, as this taxon occurs in the Sheep Mountains, it is not expected to be affected by the implementation of the long-term habitat conservation plan for the desert tortoise.

Habitat: Montane.

***Astragalus funereus* -- funeral milkvetch**

Status: Federal: C2
State: None
NNNPS: W

Range: Funeral milkvetch occurs in Clark and Nye counties, Nevada (Morefield and Knight 1992); largely restricted to Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Montane.

***Astragalus geyeri* var. *triquetrus* (*Astragalus triquetrus*) --Geyer milkvetch**

Status: Federal: C2
State: CE
NNNPS: T

Range: The lower Muddy, Virgin, and Colorado rivers in extreme northwestern Mojave County, Arizona, and in southern Clark County, Nevada (Holland 1978). Twenty records of occurrence exist for this taxon in Clark County (TNC 1990), three of which occur on private lands, one on BLM land identified for disposal, and three are found within the proposed northern DWMAs.

Habitat: Sandy flats and washes in creosote bush scrub; 1,500-2,000 feet (Holland 1978).

***Astragalus mohavensis* var. *hemigyrus* -- curvepod milkvetch**

Status: Federal: C2
State: CE#
NNNPS: E

Range: This variety of *A. mohavensis* is found in the Charleston Mountains, and in Inyo County, California; associated with carbonate soils. It is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Curvepod milkvetch occurs in rocky places within creosote bush scrub and Joshua tree woodland habitats.

***Astragalus oophorus* var. *clokeyanus* -- Clokey eggvetch**

Status: Federal: C1
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); largely restricted to Charleston Mountains and, therefore, is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forest; montane.

***Astragalus remotus* -- Spring Mountain milkvetch**

Status: Federal: C2
State: None
NPS: W

Range: Clark County endemic (Morefield and Knight 1992). Of the 9 recorded occurrences for this species in Clark County (TNC 1990), 1 is found on private land and none occur within existing or proposed DWMAs.

Habitat: Montane.

***Calochortus striatus* -- alkali mariposa-lily**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark and Nye counties, extending into Los Angeles, Kern, and Inyo counties, California (Morefield and Knight 1992). Of the 3 recorded occurrences for this

species in Clark County (TNC 1990), 1 is found on private land and none occur within an existing or proposed DWMA.

Habitat: This herbaceous perennial is found in alkaline meadows or seeps and is associated with saltgrass and yerba mansa (Mozingo and Williams 1980).

***Chrysothamnus eremobius* -- remote rabbitbrush**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark and Lincoln counties, Nevada (Morefield and Knight 1992). Only 2 recorded occurrences are on file with the Nevada Natural Heritage Program (TNC 1990), neither of which occur on private lands or within an existing or proposed DWMA.

Habitat: Creosote bush scrub.

***Coryphantha vivipara* ssp. *rosea* -- clokey pincushion (rosy fotail cactus)**

Status: Federal: None
State: CY
NNNPS: None

Range: This cactus ranges throughout the western United States. In Nevada it occurs in Clark, Esmeralda, Lincoln, and Nye counties.

Habitat: Creosote bush scrub.

***Cryptantha hoffmannii* -- Hoffman's crypthantha**

Status: Federal: C3B
State: None
NNNPS: None

Range: This plant's range includes Clark, Nye, Esmeralda, Humboldt, Washoe, and Lander counties, Nevada into California, Oregon, and Washington.

Habitat: It is found in dry rocky places between 7,000 and 10,200 feet in pinyon juniper woodlands and bristle cone pine forests.

Cryptantha insolita -- **unusual catseye**

Status: Federal: C2*
State: CE
NNNPS: Possibly extinct

Range: Clark County endemic (Morefield and Knight 1992); this species is represented by only a few collections over 80 years ago within the Las Vegas Valley. Only two recorded occurrences are on file with the Nevada Natural Heritage Program (TNC 1990), 1 of which is on private land. Efforts to relocate this species have been unsuccessful and it is now presumed extinct.

Habitat: Alkaline clay hills north of Las Vegas; 2,000 feet (Holland 1978)

Cymopterus ripleyi **var.** *saniculoides* -- **sanicle biscuitroot**

Status: Federal: C2
State: None
NNNPS: W

Range: This plant occurs in Clark, Lincoln, and Nye counties, Nevada.

Habitat: Data unavailable.

Draba jeageri -- **Jaeger's draba**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); largely restricted to Charleston Mountains and, therefore, is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forest; montane.

Draba paucifructa -- **Charleston draba**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); likely restricted to the

Charleston Mountains and, therefore, is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forest; montane.

***Epilobium nevadense* -- Nevada willowherb**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark, Lincoln, and Eureka counties, Nevada (Morefield and Knight 1992). Only 1 occurrence is recorded for this species (TNC 1990) and it is present in either private land or within an existing or proposed DWMA.

Habitat: Data unavailable.

***Erigeron ovinus* -- sheep fleabane**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark and Lincoln counties, Nevada (Morefield and Knight 1992). Two recorded occurrences exist for this species (TNC 1990), neither of which occurs on private land or within an existing or proposed DWMA.

Habitat: Data unavailable.

***Eriogonum bifurcatum* -- Pahrump Valley buckwheat**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark and Nye counties, Nevada, and Inyo County California (Morefield and Knight 1992). Only 1 occurrence is recorded for this species (TNC 1990) and it is not on private land or within an existing or proposed DWMA.

Habitat: Creosote bush scrub

Eriogonum viscidulum **-- sticky buckwheat**

Status: Federal: C2
State: CE
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); nine occurrences are recorded with the Nevada Natural Heritage Program (TNC 1990). Two of these occurrences are on private land and three are within the proposed northern DWMAs.

Habitat: Type locality for this species is deep red sands 0.3 mile below the Riverside Bridge along the Virgin River; Virgin River Valley area (Holland 1978).

Ferocactus acanthodes **var.** ***lecontei*** **-- barrel cactus**

Status: Federal: None
State: CY - Protected under NRS 527.060.-.020
NNNPS: W

Range: Unknown at this time.

Habitat: Desert and creosote bush scrub.

Forsellesia clokeyi **-- Clokey forsellesia**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark County endemic (Morefield and Knight 1992); only one occurrence is recorded for this species in Clark County (TNC 1990) and it does not occur on private land or within an existing or proposed DWMA.

Habitat: Associated with carbonate soils at higher elevations

Galium hilendiae **var.** ***kingstonense*** **-- Kingston bedstraw**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark and Nye counties, Nevada (Morefield and Knight 1992)

Habitat: Data unavailable.

***Glossopetalon pungens* var. *glabra* (*Forsellesia pungens* var. *glabra*) -- smooth dwarf greasebush**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark County, Nevada, and into California.

Habitat: For *Glossopetalon pungens*, rocky gulches of mountains in the pinon belt (Jaeger 1941). It is not anticipated that this variety occurs within the area covered by the Clark County Desert Wildlife Conservation Plan.

***Ivesia cryptocaulis* -- hidden ivesia**

Status: Federal: C2
State: None
NNNPS: T

Range: Endemic to Clark County (Morefield and Knight 1992); Charleston Mountains. Three occurrences are recorded for Clark County (TNC 1990); however, hidden ivesia is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forest; montane.

***Ivesia jaegeri* -- Jaeger's ivesia**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark County into California (Morefield and Knight 1992); 7 occurrences are recorded for Clark County (TNC 1990), none of which occur on private land or within an existing or proposed DWMA.

Habitat: Data unavailable.

***Opuntia whipplei* var. *multigeniculata* -- blue diamond cholla**

Status: Federal: C1
State: CE#; CY - protected under NRS 527.060-.020
NNNPS: T

Range: Endemic to Clark County, Nevada (Knight, pers. comm. 1994). Two records of occurrence exist for Clark County (TNC 1990), neither of which is present on private land or within an existing or proposed DWMA.

Habitat: Creosote bush scrub.

Penstemon albomarginatus **-- white-margined beardtongue**

Status: Federal: C2
State: None
NNNPS: T

Range: Central Mojave in California, eastward to southern Nevada (Clark and Nye counties) and southwestern Arizona. Three occurrences exist for Clark County (TNC 1990); however, none are on private land or within an existing or proposed DWMA.

Habitat: Occurs only on drifting sands; creosote bush scrub.

Penstemon bicolor **ssp.** ***bicolor*** **-- yellow twotone beardtongue**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark County endemic (Morefield and Knight 1992); 6 occurrences exist for Clark County (TNC 1990). One occurrence is on private land and another is on BLM land identified for disposal. One record exists within the proposed northern DWMAs.

Habitat: Occurs in washes and disturbed areas such as along roads.

Penstemon bicolor **ssp.** ***roseus*** **-- rosy twotone beardtongue**

Status: Federal: C2
State: None
NNNPS: None

Range: Clark and Nye counties, Nevada, into Arizona (Morefield and Knight 1992). Ten occurrences exist for Clark County (TNC 1990), 1 of which is on private land, 2 of which are on BLM lands identified for disposal, and 3 of which are within existing or proposed DWMAs (1 in the northern and 2 in the southern).

Habitat: Occurs in washes and disturbed areas such as along roads.

***Penstemon fruticiformis* ssp. *amargosae* -- Death Valley beardtongue**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark and Nye counties, Nevada, into California (Morefield and Knight 1992).

Habitat: Dry, rocky places; creosote bush scrub.

***Penstemon thompsoneae* var. *jaegeri* -- Jaeger beardtongue**

Status: Federal: None
State: None
NNNPS: W

Range: This plant is a Clark County endemic.

Habitat: Unknown at this time.

***Perityle megalocephala* var. *intricata* -- delicate rock daisy**

Status: Federal: None
State: None
NNNPS: W

Range: In Nevada this species occurs in the Pahrump Valley and Sheep Mountains in Clark, Esmeralda, and Nye counties. It also occurs in California.

Habitat: This plant is found between 6,000 and 8,500 feet in creosote bush scrub and pinyon-juniper woodland habitat.

***Salvia dorrii* var. *clokeyi* -- Clokey Mountain sage**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark County endemic (Morefield and Knight 1992); occurrences generally above 4,000 feet and, therefore, Clokey Mountain sage is not anticipated to be affected by the implementation of the Clark County Desert Wildlife Conservation Plan.

Habitat: Dry flats and slopes.

Selagenella utahensis **-- Utah spikemoss**

Status: Federal: C3C
State: None
NNNPS: W

Range: This species ranges from Clark County, Nevada into Utah.

Habitat: Data unavailable.

Silene clokeyi **-- Clokey catchfly**

Status: Federal: C2
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); restricted to the Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Data unavailable.

Sphaeromeria compacta **-- Charleston tansy**

Status: Federal: C1
State: None
NNNPS: T

Range: Clark County endemic (Morefield and Knight 1992); restricted to the Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forest; montane.

Synthyris ranunculina **-- Charleston kittentails**

Status: Federal: C1
State: None
NNNPS: E

Range: This species is known to have only five extant populations, all occurring within the boundaries of the Toiyabe National Forest in the Charleston Mountains; it is not anticipated to be affected by the implementation of this conservation plan.

This species is now believed extirpated from the Las Vegas Valley region (Knight, pers. comm. 1991).

Habitat: Coniferous forest; montane.

***Townsendia jonesii* var. *tumulosa* -- Charleston ground daisy**

Status: Federal: C2
State: None
NNNPS: W

Range: Clark and Nye counties (Morefield and Knight 1992); largely restricted to the Charleston Mountains and, therefore, not anticipated to be affected by the implementation of this conservation plan.

Habitat: Rocky, gravelly ridges and flats; montane

***Viola purpurea* var. *charlestonsis* -- Charleston violet**

Status: Federal: None
State: None
NNNPS: W

Range: This plant ranges from Clark County, Nevada into Utah.

Habitat: Data unavailable.

Invertebrates

***Euphydryas anicia morandi* -- Morand's checkerspot**

Status: Federal: C2
State: None

Range: Restricted to the Spring Mountains above 7,000 feet (Austin, pers. comm. 1993). As such, it is not anticipated to be affected by the implementation of this conservation plan. Three records do exist for Clark County (TNC 1990).

Habitat: Open areas up to timberline. Host plants are *Castilleja* spp. and *Penstemon* spp (Austin, pers. comm. 1993).

Fluminicola avernalis -- **Moapa pebblesnail**

Status: Federal: C2
State: None

Range: Three records exist for Clark County (TNC 1990), all of which occur on private lands.

Habitat: Aquatic.

Hesperopsis gracielae -- **MacNeill sooty-wing skipper**

Status: Federal: C2
State: None

Range: Restricted to Moapa Valley, Clark County, and along the lower Colorado River, California (Austin, pers. comm. 1993). Two occurrences exist for Clark County (TNC 1990), one of which is on private land. No records exist within existing or proposed DWMAs.

Habitat: Desert areas; host plant is *Atriplex lentiformis* (Austin, pers. comm. 1993).

Plejebus shasta charlstonensis -- **Spring Mountain blue**

Status: Federal: C2
State: None

Range: Restricted to the Spring Mountains above 7,500 feet (Austin, pers. comm. 1993) and, as such, is not anticipated to be affected by the implementation of the Clark County Desert Wildlife Conservation Plan. Five records do exist for Clark County (TNC 1990).

Habitat: Montane.

Speyeria zerene carolae -- **Carol's silverspot butterfly**

Status: Federal: C2
State: None

Range: Clark County endemic; restricted to Charleston Mountains and, therefore, this taxon is not anticipated to be affected by the implementation of this conservation plan. Four records do exist for Clark County (TNC 1990).

Habitat: Montane.

Stenelmis caldia moapa -- **Moapa Warm Springs riffle beetle**

Status: Federal: C2
State: None

Range: One record exists in Clark County (TNC 1990), the occurrence of which is on private land.

Habitat: Streambed/Riparian.

Tryonia clathrata -- **grated tryonia**

Status: Federal: C2
State: None

Range: Data unavailable.

Habitat: Data unavailable.

Fish

Crenichthys baileyi maopae -- **Moapa White River springfish**

Status: Federal: C2
State: None

Range: Endemic to the Moapa and White Rivers; 7 recorded occurrences exist for Clark County (TNC 1990), six of which are in springs found on private land.

Habitat: Springs (Lee et al. 1980)

Empetrichthys latos -- **Pahrump killifish**

Status: Federal: FE
State: SP

Range: Originally, three separate springs in Pahrump Valley, Nye County (Lee et al. 1980); currently Manse Spring; Corn Creek Spring, Spring Mountain State Park (Morefield and Knight 1992). This taxon is not anticipated to occur within the area covered by the Clark County Desert Wildlife Conservation Plan.

Habitat: Shallow warm springs (Lee et al. 1980).

Gila elegans -- **Bonytail chub**

Status: Federal: FE
State: SP

Range: Green River and Lake Mojave. This taxon is not anticipated to occur within the area covered by the Clark County Desert Wildlife Conservation Plan.

Habitat: Large, riverine channels (Lee et al. 1980).

Gila robusta seminuda -- **Virgin River roundtail chub**

Status: Federal: FE
State: SP

Range: Restricted to the Virgin River of Utah, Nevada, and Arizona (Lee et al. 1980). One record exists for Clark County (TNC 1990), and it occurs on private land. This taxon has the potential to occur in areas of the Virgin River which are within the proposed northern DWMAs.

Habitat: Warm streams and larger tributaries in association with cover such as boulders, overhanging cliffs, or vegetation (Lee et al. 1980).

Gila robusta **ssp. -- Moapa roundtail chub**

Status: Federal: C2
State: SP

Range: Four records of occurrence exist for this taxon in Clark County, all of which are located on private land.

Habitat: Unknown aquatic habitat.

Lepidomeda mollispinis mollispinis -- **Virgin spinedace**

Status: Federal: C2
State: SP

Range: Restricted to the Virgin River and its tributaries in Arizona, Nevada, and Utah (Lee et al. 1980). Six occurrences are recorded for Clark County (TNC 1990), five of which occur on private land with the sixth occurring on BLM land identified for disposal. This taxon has the potential to occur in areas of the Virgin River which are within the proposed northern DWMAs.

Habitat: Lower to middle reaches of tributaries, most often associated with clear, cool, shaded, relatively swift streams comprised of pools, runs, and riffles (Lee et al. 1980).

Moapa coriacea **-- Moapa dace**

Status: Federal: FE
State: SP

Range: Home Ranch, Muddy River, Moapa Valley, Clark County (Lee et al. 1980)

Habitat: Warm spring; clear pools and outlet streams of moderate to high temperatures (19.5-33.9 degrees C) (Lee et al. 1980)

Plagopterus argentissimus **-- woundfin minnow**

Status: Federal: FE
State: SP

Range: Tributaries of the lower Colorado drainage (Virgin, Gila, and Salt rivers); one record exists from Moapa River, Clark County (Lee et al. 1980). The Nevada Natural Heritage Program record for this species occurs within the proposed northern DWMAs (TNC 1990).

Habitat: Main channels of seasonally swift, highly turbid, and extremely warm streams with sandy, constantly shifting bottoms (Lee et al. 1980).

Ptychochoelius lucius **-- Colorado squawfish**

Status: Federal: FE
State: SP

Range: Extirpated from Clark County (Lee et al. 1980).

Habitat: Quiet backwaters, eddies, and runs of large rivers (Lee et al. 1980).

Rhinichthys osculus moapae **-- Moapa speckled dace**

Status: Federal: C2
State: SP

Range: Muddy River; three records exist for Clark County (TNC 1990). Two records exist on private land and the third occurs on BLM land identified for disposal. This taxon has the potential to occur in areas covered by this Conservation Plan.

Habitat: Cool, flowing intermittent and perennial streams with rocky substrate; also in large and small lakes and outflows of desert streams (Lee et al. 1980).

***Xyrauchen texanus* -- razorback sucker**

Status: Federal: C1
State: None

Range: Large rivers of the Colorado Basin; Lake Mead, Mojave, and Havasu on lower Colorado (Lee et al. 1980). Eight records exist for this species in Clark County (TNC 1990), one of which is in the Piute-Eldorado DWMA.

Habitat: Slow-moving water areas, backwaters, and eddies (Lee et al. 1980).

Amphibians

***Bufo microscaphus microscaphus* -- Arizona southwestern toad**

Status: Federal: C2
State: None

Range: The disjunct distribution for the Arizona toad extends through Arizona, parts of New Mexico, southern Nevada, and into southwestern Utah where it is found in headwaters of tributaries to the Colorado River (Behler and King 1979).

Habitat: Washes, streams, and arroyos (Behler and King 1979).

***Rana onca* (*Rana fisheri*) -- relict (and Vegas Valley) leopard frog**

Status: Federal: Category 3a Candidate
State: None

Range: The only record with location data which exists for this species occurs in what is now Floyd Lamb State Park, which is found in the northern region of the permit area. Formerly present in wetland habitat in the Vegas Valley; as habitat no longer exists, this species is now presumed to be extirpated from this area. Distribution also includes Virgin River drainages.

Habitat: Found in or near water in lowland streamsides and springs surrounded by desert.

Reptiles

Heloderma suspectum cinctum **-- banded Gila monster**

Status: Federal: None
State: SP

Range: Except for the Coyote Springs Valley record, none (Ken Knight, Knight & Leavitt, pers. comm. 1994) of the 17 known localities are within a Tortoise Management Area or proposed Desert Wildlife Management Area. Six to seven of the records are within areas already developed or will be in the near future. Twelve of the records reflect unfavorable encounters with the public; e.g., death, illegal possession, translocation.

Habitat: Most of the records indicate the slopes, hills, and low-elevation, below 5,000 feet, mountains which ring around the Las Vegas Valley and outlying areas as primary habitat. Gila monster habitat does not overlap sufficiently with that of the desert tortoise habitat slated thus far for enhanced beneficial management activities. Hence, the Gila monster is not likely to benefit significantly from mitigation and management supported by either the Short-Term or Long-Term Habitat Conservation Plans as these areas are not included as conserved habitats.

The banded Gila monster in southern Nevada is associated with and restricted to present and historical tributaries, major washes, springs, and desert riparian areas of the Colorado River system (Colorado Hydrographic Unit). Within the Colorado Hydrographic Unit, this lizard seems to have a restricted distribution in and about rocky slopes, primarily sandstone and limestone, where cover sites are readily available and desert riparian zones are likely found (e.g., near water or mesic environments). With these attributes combined, the resultant habitats seem to depict areas highly productive seasonally and are important foraging, nesting, and resting sites relative to outlying desert habitats. Like the desert tortoises, Gila monsters are relatively long-lived and active primarily in the spring to exploit foraging and breeding opportunities. They also spend approximately 98 percent of their lives hidden away underground. Based largely on behavior exhibited in captive situations (lying for prolonged periods in water), Gila monsters may be more vulnerable to water loss than other lizards. The Gila monster is capable of consuming from 35 to 50 percent of its body weight in a single sitting (e.g., bird and reptile eggs, small mammals, and nestling birds). Three or four such feeding events may allow it to retire to its subterranean quarters until the following year.

Sauromalus obesus **-- chuckwalla**

Status: Federal: C2
State: None

Range: Mojave and Sonoran deserts, south along the gulf coast of Baja California, Mexico (Behler and King 1979).

Habitat: Can be found in rocky areas throughout its range. It retreats into rock crevices and rock piles. The creosote bush is found in most parts of this lizard's range.

Birds

***Accipiter gentilis* -- northern goshawk**

Status: Federal: C2
State: None

Range: This bird ranges throughout most of the northern and western United States and Mexico (National Geographic Society 1983).

Habitat: It occurs in deep, conifer-dominated mixed woodlands (National Geographic Society 1983).

***Aquila chrysaetos* -- golden eagle**

Status: Federal: BEPA
State: None

Range: The golden eagle ranges throughout most of the United States and Mexico (National Geographic Society 1983).

Habitat: It inhabits mountainous or hilly terrain, and nests on cliffs or in trees (National Geographic Society 1983).

***Buteo regalis* -- ferruginous hawk**

Status: Federal: C2
State: None

Range: Western United States; rare wander east to Wisconsin, Illinois, Arkansas, Louisiana in migration (National Geographic Society 1983).

Habitat: Open dry country, perching in trees, on poles, or on the ground (National Geographic Society 1983).

Charadrius alexandrinus nivosus -- **western snowy plover (interior population)**

Status: Federal: C2
State: None

Range: Range includes California, Colorado, Kansas, New Mexico, Nevada, Oklahoma, Oregon, Texas, Utah, and Washington. In Clark County, it is found along the Colorado River system (Hardenbrook 1994).

Habitat: Inhabits barren sandy beaches and flats (National Geographic 1983).

Chilidonias neger -- **black tern**

Status: Federal: C2
State: None

Range: This tern ranges throughout the northern and western United States (National Geographic Society 1983).

Habitat: It occurs along lakeshores and in marshes and coastal areas during migration (National Geographic Society 1983).

Empidonax trailii extimus -- **southwestern willow flycatcher**

Status: Federal: FPE
State: None

Range: In Nevada, may exist along the Virgin River.

Habitat: Riparian habitat.

Falco peregrinus -- **American peregrine falcon**

Status: Federal: FE
State: SP

Range: The Nevada Natural Heritage Program contains two records for these falcons (TNC 1990). Several peregrine falcons have been released in downtown Las Vegas on top of the Hilton Hotel as part of the species recovery plan.

Habitat: Open country near cliffs.

Haliaeetus leucocephalus **-- bald eagle**

Status: Federal: FE
State: None

Range: Unknown at this time.

Habitat: Open country near lakes, rivers, coastlines (National Geographic Society 1983)

Ictinia mississippiensis **-- Mississippi kite**

Status: Federal: None
State: SP

Range: Southeastern United States, west to western Arizona, north to central Colorado and Arkansas; regular straggler far north and west of usual range (rare in Nevada). Winters in South America. One record for this bird exists for Clark County (TNC 1990)

Habitat: Open woodlands and swamps, semiarid rangelands (National Geographic Society 1983).

Ixobrychus exilis hesperis **-- western least bittern**

Status: Federal C2
State: None

Range: The range of this bird includes Arizona, California, Nevada, Oregon, Utah, and Mexico (USFWS 1991).

Habitat: It occurs in brackish and freshwater marshes in the coastal lowland.

Lanius ludovicianus **-- loggerhead shrike**

Status: Federal: C2
State: None

Range: Throughout the United States.

Habitat: Open, scrub habitats.

Mycteria americana -- **wood stork**

Status: Federal: FE
State: SP

Range: Generally the Gulf Coast and Florida; post-breeding dispersal extends to Texas, Nevada, Arizona, California, and Baja California, Mexico.

Habitat: Wet meadows, swamps, muddy ponds, and coastal shallows (National Geographic Society 1983). One record exists for this stork in Clark County (TNC 1990).

Pelecanus occidentalis -- **brown pelican**

Status: Federal: Endangered
State: None

Range: Normal range is coastal United States and Mexico, but is occasionally found inland.

Habitat: Prefers saltwater habitat.

Phainopepla nitens -- **phainopepla**

Status: Federal:
State: SP

Range: This species occurs in Clark County and the Las Vegas Valley; two occurrence records exist in the data base at the Nevada Natural Heritage Progam (TNC 1990). One of these records is on private land. While common in other states such as California and Arizona, this species is uncommon in Nevada due to its highly specific habitat requirements (Clemmer, pers. comm. 1991).

Habitat: The phainopepla occupies only mature stands of mesquite and acacia woodland (Clemmer, pers. comm. 1991).

Plegadis chini -- **white-faced ibis**

Status: Federal: C2
State: None

Range: The range of this bird includes Arizona, California, Colorado, New Mexico, Nevada, Oklahoma, Oregon, South Dakota, Texas, and Utah (USFWS 1991).

Habitat: Occurs in freshwater ponds, irrigated fields, and brackish lagoons.

Sterna antillarum -- **least tern**

Status: Federal: FE
State: SP

Range: Two recent records exist for least tern in Clark County; one near the Las Vegas sewage ponds in 1966 and the other in the Las Vegas Wash in 1986 (TNC 1990). The wash area is being recommended for protection due to its sensitive communities and wildlife habitat values (Clemmer, pers. comm. 1991). The normal range of this species is along the Pacific coast, the tributaries of the Mississippi River, and along the Atlantic coast (National Geographic Society 1983).

Habitat: Sandy beaches and sandbars

Mammals

Euderma maculatum -- **spotted bat**

Status: Federal: C2
State: SP

Range: One of the rarest North American bats, however, distribution ranges from southern California and southern Nevada through southwestern Colorado, Arizona, and western New Mexico. Scattered records exist north to Montana. Four records exist for Clark County (TNC 1990).

Habitat: The spotted bat lives primarily in crevices in rocky cliffs and canyons; most frequently noted in rough desert terrain. The three records for this species in Clark County are from downtown Las Vegas, where several spotted bats are roosting among the buildings. This represents an unusual behavior, as these bats are usually found in pinyon-juniper woodland, pine forest, and other habitat types (Clemmer, pers. comm. 1991). This species seems to be naturally very rare, and few individuals have been observed (only ten records exist for all of Nevada).

Eumops perotis californicus -- **greater western mastiff bat**

Status: Federal: C2
State: None

Range: Mastiff bats occur from central California southward to central Mexico. This bat occurs in the southern portion of Nevada, southwestern Arizona, and extreme southwestern portions of New Mexico and Texas.

Habitat: Mastiff bats favor rugged, rocky areas where suitable crevices are available for day roosts. Characteristically, bat roosts are located in large cracks in

exfoliating slabs of granite or sandstone. Mastiff bats also frequently roost in buildings, provided these have appropriate sheltering spaces with conditions.

Myotis velifer brivis **-- southwestern cave myotis**

Status: Federal: C2
State: None

Range: Southwestern cave myotis is found along the Colorado River east to Oklahoma and Kansas and south to Honduras.

Habitat: Cave myotis are habitual cave dwellers and are highly colonial. They inhabit arid zones in the southwestern United States. During the reproductive season, they form large colonies in warm caves and mines and less often in buildings and other structures. Optimal foraging habitat for this bat appears to be linear stands of mesquite, tamarisk, and catclaw acacia bordering still water of oxbow ponds.

Eutamias palmeri **-- Palmer's chipmunk**

Status: Federal: C2
State: None

Range: Endemic to Clark County; restricted to the Charleston Mountains and, therefore, is not anticipated to be affected by the implementation of this conservation plan.

Habitat: This chipmunk has a very limited distribution, inhabiting coniferous forests with rocky slopes from the yellow pine belt to the timberline.

Eutamias umbrinus nevadensis **-- Hidden Forest Uinta chipmunk**

Status: Federal: C2
State: None

Range: Endemic to Clark County; known only from Sheep Mountains and, therefore, is not anticipated to be affected by the implementation of this conservation plan.

Habitat: Coniferous forests, mixed woods, open areas in yellow and white pines; junipers and scrub oaks.

Lutra canadensis sonora -- **southwestern otter**

Status: Federal: C2
State: None

Range: Southwestern Colorado, southern Utah, New Mexico, Arizona, and in Nevada where the Colorado River joins the Virgin River (Hall 1981). One record exists for Clark County (TNC 1990).

Habitat: This species lives along streams and lake margins.

Macrotus californicus -- **California leaf-nosed bat**

Status: Federal: C2
State: None

Range: Southern California, southern Nevada, western and southern Arizona, Mexico; known in Clark County from the Las Vegas and Searchlight areas (Hall 1981). Two records for this bat are contained within the data base at the Nevada Natural Heritage Program (TNC 1990).

Habitat: Roosts by day in caves and mine tunnels within creosote bush scrub habitat; roosts with high temperatures and humidity appear to be a limiting factor (Brown 1990).

Ovis canadensis nelsoni -- **desert bighorn sheep**

Status: Federal: None
State: Game Animal, NAC 503.020

Range: Southern California from Coast ranges to Colorado River and southwestern Nevada.

Habitat: Desert and grasslands. Distribution is dependent upon available water sources and can be limited by human harassment in vicinity of water sources and foraging areas.

Plecotus townsendi townsendi -- **pacific western big-eared bat**

Status: Federal: C2
State: None

Range: Ranges throughout the western United States and Canada in Clark County. It is known from the Spring Mountains, Red Rock Escarpment, Desert National Wildlife Range, and the Newberry Range (Thomlinson 1994).

Habitat: This bat inhabits caves, mines, and buildings in a variety of arid and mesic environments.

Status

FE = Federally listed as an endangered species; in danger of extinction in all or significant portions of their ranges.

FPE = Federally proposed for listing as endangered.

C1 = Candidate taxa for which enough substantial information exists to support a proposal for threatened or endangered listing. Also included in this category are taxa of known vulnerable status that may already have become extinct (indicated by placement of an asterisk after the number); these taxa retain a high priority for addition to the federal threatened/endangered lists if extant populations are identified

C2 = Candidate taxa for which there is some evidence of vulnerability, but for which there are not enough current data to support a threatened or endangered listing proposal

C2* = Candidate taxa for which there is some evidence of vulnerability, but for which there are not enough current data to support a threatened or endangered listing proposal; lacking known occurrences at this time

C3A = Candidate taxa for which the U.S. Fish and Wildlife Service has persuasive evidence of extinction. If rediscovered, such taxa might acquire high priority for listing

C3B = Names that, on the basis of current taxonomic understanding, do not represent distinct entities meeting the endangered species act's definition of "species." Such supposed taxa could be reevaluated in the future on the basis of new information.

C3C = Candidate taxa that have been proven to be more abundant or widespread than previously believed and/or those that are not subject to any identifiable threat. If further research or changes in habitat indicate a significant decline in these taxa, they may be reevaluated for possible inclusion in Categories 1 or 2

BEPA = Federal Bald and Golden Eagle Protection Act

CE = State listed as Critically Endangered; taxa threatened with extinction, whose survival requires assistance because of overexploitation, disease, or because their habitat is threatened with destruction, drastic modification, or severe curtailment (NRS 527.260-.030)

CE# = Recommended for state listing as Critically Endangered, pending formal listing (NRS 527).

CY = Protected as a cactus, yucca, or Christmas tree (NRS 527.060-.020)

SP = Protected by the State of Nevada, Division of Wildlife (NDOW) (NRS 501.331, 501.375, 501.386)

E = Considered endangered by the Northern Nevada Native Plant Society

T = Considered threatened by the Northern Nevada Native Plant Society

W = Considered potentially vulnerable by the Northern Nevada Native Plant Society; in need of monitoring or further data collection to determine status

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APPENDIX D

Cost Estimates for Tortoise Handling Alternatives for the Clark County Habitat Conservation Plan

The following discussion provides cost estimates for alternatives for handling tortoises taken incidentally pursuant to Section 10(a)(1)(B) of the Endangered Species Act and in accordance with the Clark County Short-Term Habitat Conservation Plan (HCP). Handling includes three major activities:

1. Survey for tortoises located on lands to be developed.

2. Removal of tortoises located on lands to be developed or on exclusionary lands.

3. Management of tortoises removed from lands to be developed or from exclusionary lands.

These costs have been projected over thirty (30) years for the purpose of evaluating the relative costs of various options for handling tortoises taken during a long-term HCP currently under consideration. One or a combination of these options will need to be incorporated in the long-term plan to deal with tortoises collected in developing areas.

The following discussion is divided into three parts: (1) costs associated with tortoise survey; (2) costs associated with tortoise collection/pick-up; and (3) costs associated with the management of collected tortoises. In summary, the costs for the collection and management alternatives depend directly upon the number of tortoises handled. The costs of alternative combinations range from nearly zero if no tortoises are collected or accepted from the public to over $14,000,000 for the 30-year program if survey and removal occurs throughout the county and animals are maintained in captivity (not euthanized).

The factor which has the greatest effect on total costs is the requirement to maintain all tortoises which have been collected but which cannot be directed to the other management programs. The cost of maintaining tortoises for 30 years could amount to $10,000,000 (or $15,000,000 if Section 7 tortoises are included).

A. Costs Associated with Tortoise Survey

1. Required Tortoise Survey

Under this alternative, all nonfederal lands to be developed within the permit area would require a survey for the presence of tortoises. It is estimated that up to 128,000 acres

may be developed over the next 30 years; however, since about 20 percent of this land is not tortoise habitat, only 102,400 acres would require tortoise survey work. If it costs about $15 per acre to survey property to be developed, the total cost of tortoise survey over the 30-year permit period will be about $1.5 million in 1994 dollars.

2. Required Tortoise Survey on Parcels Larger Than Five Acres

Under this alternative, only nonfederal lands to be developed within the permit area over five acres in size would require a survey for the presence of tortoises. It is estimated that about 90 percent of the land to be developed over the next 30 years is in parcel sizes larger than five acres (Clark County Department of Comprehensive Planning). This is approximately 115,000 acres. If only 80 percent of this land is desert tortoise habitat (92,000 acres), and using the above tortoise survey rate of $15 per acre, the total cost for this alternative will be $1.38 million in 1994 dollars. This is not a significant reduction; however, the number of transactions would be reduced, saving some administrative costs.

3. No Tortoise Survey Required

Under this alternative, tortoise surveys would not be required for nonfederal lands to be developed within the permit area; however, developers may choose to survey their lands if they wish. The cost of tortoise survey for this alternative ranges from nothing (if no developer surveys) to the same cost as Alternative 1 (if every developer surveys all developable land).

B. Costs Associated with Tortoise Collection/Pick-up

1. Estimated Numbers of Displaced ("Taken") Tortoises

If the permit area is expanded to include the entire county, the total number of tortoises that will potentially be encountered in 30 years is estimated at 21,000: 700 animals per year for 30 years.

This estimate is based on the following assumptions. The total number of tortoises to be collected from private land for the next 30 years is estimated at 15,000: 500 animals per year for 30 years. This estimate includes 8,250 animals, or 275 per year, from the clearing of 3,500 acres per year (5.5 square miles times 50 animals per square mile) and 6,750 animals, or 225 per year, from the exclusionary zone and other strays.

The total number of tortoises displaced by Section 7 consultations over the next 30 years is estimated at 6,000: 200 animals per year for 30 years. This number includes both BLM-initiated Section 7 consultations resulting in displacement of 4,110 to 4,980 tortoises—137 to 166 animals per year for the next 30 years—and non–BLM-initiated Section 7 consultations resulting in displacement of 1,020 to 1,890 tortoises—34 to 63 animals per year for the next 30 years.

The cost estimates of various alternative combinations assumes that the permit area will be expanded to include the entire county. Therefore, the program must anticipate the need to handle up to 700 tortoises.

2. Required Survey and Removal

Approximately 275 tortoises per year would be collected as a result of required survey and removal actions. Figure 1 illustrates the number of tortoises handled and the costs associated with requiring survey and removal of tortoises from disturbed lands in the permit area. The tortoises with fate unknown are those which might be picked up by the public and released into the wild. These animals are of concern because of the implication of released animals in the spread of the upper respiratory disease affecting wild tortoise populations. The assumptions used in the figure are discussed below.

All collection options will require that tortoises be picked up, held, and accounted for. Clark County estimates the current cost of this operation to be approximately $50,000 annually (400 tortoises for first year). Collected tortoises which are sickly will require euthanasia by a licensed veterinarian. This cost is estimated at $10,000. The total cost for 400 tortoises is $60,000 per year, or $150 per tortoise. If the permit area is expanded, the cost to pick up, hold, and care for 700 tortoises could increase to $105,000 annually.

The cost to developers or project proponents of survey and removal would be approximately $10 to $20 per acre. With clearing of 3,500 acres per year, this would amount to $35,000 to $70,000 per year or $1,050,000 to $2,100,000 over 30 years.

3. Voluntary Survey and Removal

Under this alternative, developers may choose to pick up tortoises at their own cost. These animals would be adopted, maintained, or euthanized. Figure 2 illustrates the likely number of tortoises handled and the costs associated with voluntary survey and removal of tortoises from disturbed lands in the permit area. The assumptions used in the figure are discussed below.

The cost of this alternative to the HCP would depend upon the area from which animals are collected. If the HCP program is responsible for handling the collected tortoises, the cost would be approximately $150 per tortoise.

The cost to developers or project proponents to survey and remove tortoises would be approximately $15 per acre, as with the required survey and removal procedure; however, not all disturbed lands would be surveyed under this alternative. It is estimated that perhaps only 30 percent of the disturbed land would be voluntarily surveyed (30 percent of 128,000 acres is 38,400 acres). At $15 per acre this amounts to about $768,000.

Figure 1. Survey and removal alternatives and estimated annual numbers of tortoises handled through HCP or with unknown fates.

	Survey and Removal	Survey and Removal	Survey and Removal	Survey and Removal
	Pick-up Program	Pick-up Program	No Pick-up Program	No Pick-up Program
	Turn-in Program	No Turn-in Program	Turn-in Program	No Turn-in Program
Tortoises Handled	500	400	400	275
Tortoises Fate Unknown	0	100	100	225
Annual Cost to HCP	$75,000	60,000	60,000	41,250
30-yr Cost to Developers	$1,500,000	1,500,000	1,500,000	1,500,000
30-yr HCP Cost	$3,750,000	$3,300,000	$3,300,000	$2,737,500

Figure 2. Alternatives with voluntary survey and removal and estimated annual numbers of tortoises handled through HCP or with unknown fates unknown fates.

	Voluntary Survey and Removal	Voluntary Survey and Removal	Voluntary Survey and Removal	Voluntary Survey and Removal
	Pick-up Program	Pick-up Program	No Pick-up Program	No Pick-up Program
	Turn-in Program	No Turn-in Program	Turn-in Program	No Turn-in Program
Tortoises Handled	425	325	325	200
Tortoises Fate Unknown	0	100	100	225
Annual Cost to HCP	$63,750	48,750	48,750	30,000
30-yr Cost to Developers	$768,000	768,000	768,000	768,000
30-yr HCP Cost	$2,680,500	$2,230,500	$2,230,500	$1,668,000

4. No Survey and Removal

Under this alternative as development occurs, tortoise surveys would not be required and no tortoises would be removed from land in the Exclusionary Zones or on public or private land which is developed.

This option has no direct costs.

5. Collection of Stray Tortoises

Pick-up Program

Under this alternative, animals picked up or reported in urban areas would be collected to remove them from harm's way. Approximately 225 animals per year could be expected to be encountered in urban areas. Figure 3 illustrates the number of tortoises handled and the costs associated with collecting tortoises encountered in urban areas but no survey and removal of tortoises from disturbed lands in the permit area. The cost of this alternative would be half that of the voluntary survey and removal alternative above, approximately $150 per tortoise or $33,750 per year.

Turn-in Program

This alternative would provide for facilities to accept tortoises picked up by the public anywhere within the permit area. Figure 3 illustrates the number of tortoises handled and the costs associated with collecting tortoises turned in from urban areas but no survey and removal of tortoises from disturbed lands in the permit area.

The number of tortoises handled and cost of this program would be similar to that of the pick-up service. The number of tortoises handled with either of these programs implemented separately is not known. For the purposes of this analysis it is assumed that either of the programs implemented separately would account for 125 of the 225 tortoises. Implemented together, the programs would account for the total of 225 tortoises.

C. Management of Collected Tortoises

1. Translocation Study

Under this alternative, all tortoises displaced in Clark County for up to five years would be used in a translocation study. This would account for up to 700 tortoises annually. After five years it is not known how many tortoises could continue to be translocated.

The cost of translocation of collected tortoises is $1,008,000 for the first three years of an experimental program and approximately $500,000 for two additional years.

Figure 3. Alternatives with no survey and removal and estimated annual numbers of tortoises handled through HCP or with unknown fates.

	No Survey and Removal	No Survey and Removal	No Survey and Removal	No Survey and Removal
	Pick-up Program	Pick-up Program	No Pick-up Program	No Pick-up Program
	Turn-in Program	No Turn-in Program	Turn-in Program	No Turn-in Program
Tortoises Handled	225	125	125	0
Tortoises Fate Unknown	$0	100	100	225
Annual Cost to HCP	$33,750	18,750	18,750	0
30-yr Cost to Developers	$0	0	0	0
30-yr HCP Cost	$1,012,500	$562,500	$562,500	$0

2. Translocation Program

After completion of the translocation study, it is unknown how many tortoises could continue to be translocated. It is assumed that up to 100 tortoises could be translocated per year.

The estimated cost of continuing a translocation program beyond five years is $75,000 annually.

3. Adoption

In Las Vegas, the Tortoise Group placed about 50 HCP-collected tortoises. Assuming a stable tortoise pet market, this number is not expected to increase in time. The Reno Turtle and Tortoise Club estimates placement of 400 tortoises during the second year of the permit. This number would decrease over time in the following manner: 300 the third year, 200 the fourth year, 100 the fifth through tenth years, and none thereafter. Therefore, approximately 350-700 tortoises would have to be held or euthanized after 10 years.

In Las Vegas, the Tortoise Group placed about 50 HCP-collected tortoises in the first year of the permit at a cost of $10,600. Assuming a stable tortoise pet market, this number is not expected to increase in time.

The Reno Turtle and Tortoise Club estimates placement of 400 tortoises during the second year of the permit. This number would decrease over time in the following manner: 300 the third year, 200 the fourth year, 100 in the fifth through tenth years, and none thereafter. Their reimbursement rate is estimated at approximately $70 per tortoise. This amounts to $28,000, $21,000, $14,000, and $7,000 annually thereafter.

4. Research, Zoos, and Education

One educational proposal requests that 100 tortoises be freeze-dried. Similar proposals may occur every few years during the life of the permit. Up to 15 tortoises per year may be requested by zoos. Other options in this category are unknown; however, for the purposes of estimating costs, it is assumed that up to 50 tortoises per year would be required.

The estimated cost of providing collected tortoises for research, zoos, and education is unknown. For example, freeze-drying a tortoise costs approximately $200 per tortoise. This cost is used to determine total costs.

5. Long-term Maintenance in a Holding Facility

The current holding facility contains five blocks of 20 pens each. The maximum capacity of a 20-pen block is 63 tortoises. The holding facility would have a maximum

capacity of about 300. This facility would have to be expanded when its capacity is reached. The cost of constructing holding pens for collected tortoises is approximately $25,000 for a block of 20 pens.

For a maximum of 250 tortoises, the estimated maintenance cost is $156 per tortoise per year. For more than 250 tortoises, the estimated maintenance cost is $100 per tortoise per year for 10 years and $80 per tortoise per year for the remainder of the permit.

6. Euthanasia

Under this option all collected tortoises not directed to other management alternatives would be euthanized.

The estimated cost of euthanizing and disposing of collected tortoises is $10,000 annually for veterinarian time.

D. Combined Alternatives

There are many potential combinations of these alternative methods of collecting and managing tortoises in the plan area. The potential collection alternatives for tortoises encountered in the HCP plan area (exclusive of Section 7 consultations) are shown in Figures 1-3.

The numbers of tortoises handled and costs of some of the potential combination of management alternatives are estimated in Tables 1, 2, and 3. The numbers of tortoises handled in Table 1 assume the required survey and removal of animals through the HCP, but do not include the costs of management of animals collected through the Section 7 Consultation process. The numbers of tortoises handled in Table 2 assume a voluntary survey and removal of animals through the HCP, but do not include the costs of management of animals collected through the Section 7 consultation process. The numbers of tortoises handled in Table 3 assume the required survey and removal of animals through the HCP, including the costs of management of animals collected through the Section 7 consultation process.

The costs outlined above are exclusive of a more comprehensive public education and awareness program associated with the public policy implications of the alternatives. A program of this type could significantly increase the public awareness of the key issues involved in the conservation and management of wild tortoise populations and, therefore, the effectiveness of the HCP.

Table 1
Cost of Alternative Management Combinations with Required Survey and Removal

			Number of Tortoises Handled			
Alternative	Capacity	Cost Per Tortoise	Combination 1	Combination 2	Combination 3	Combination 4
Translocation Study	2,000	$205	2,000	2,000		
Translocation Program	1,500	$205	1,500	1,500		
Adoption	2,550	$122	2,550	2,550	2,550	2,550
Research, Zoos, Education	1,000	$200	1,000	1,000	1,000	1,000
Long-term Maintenance	unknown	$854	7,950	300	11,450	300
Euthanasia	unknown	$44		7,650		11,150
Total Tortoises Handled			15,000	15,000	15,000	15,000
Survey/Removal Costs Per Year			$75,000	$75,000	$75,000	$75,000
Developer Costs Per Year			$50,000	$50,000	$50,000	$50,000
Total Thirty Year *Collection Cost*			$3,750,000	$3,750,000	$3,750,000	$3,750,000
Annualized Management Costs Per Year			$330,847	$104,537	$342,980	$33,830
Total Thirty Year Management Cost			$8,017,900	$1,484,800	$10,289,400	$1,001,700
Annualized Total HCP Cost			$392,263	$174,493	$467,980	$158,390
Total Thirty Year HCP Cost			$11,767,900	$5,234,800	$14,039,400	$4,751,700
Cost Per Acre			$115	$51	$137	$46

Table 2
Cost of Alternative Management Combinations with Voluntary Survey and Removal

			Number of Tortoises Handled			
Alternative	Capacity	Cost Per Tortoise	Combination 1	Combination 2	Combination 3	Combination 4
Translocation Study	2,000	$205	2,000	2,000		
Translocation Program	1,500	$205	1,500	1,500		
Adoption	2,550	$122	2,550	2,550	2,550	2,550
Research, Zoos, Education	1,000	$200	700	700	1,000	1,000
Long-term Maintenance	unknown	$854	0	0	3,200	300
Euthanasia	unknown	$44		0		2,900
Total Tortoises Handled			6,750	6,750	6,750	6,750
Survey/Removal Costs Per Year			$63,750	$63,750	$63,750	$63,750
Developer Costs Per Year			$2,560	$2,560	$2,560	$2,560
Total Thirty Year Collection Cost			$1,989,300	$1,989,300	$1,989,300	$1,989,300
Annualized Management Costs Per Year			$330,847	$104,537	$342,980	$33,830
Total Thirty Year Management Cost			$1,168,600	$1,168,600	$3,243,900	$638,700
Annualized Total HCP Cost			$105,263	$105,263	$174,440	$87,600
Total Thirty Year HCP Cost			$3,157,900	$3,157,900	$5,233,200	$2,628,000
Cost Per Acre			$31	$31	$51	$26

Table 3

Cost of Alternative Management Combinations with Required Survey and Removal and Section 7 Tortoises

			Number of Tortoises Handled			
Alternative	Capacity	Cost Per Tortoise	Combination 1	Combination 2	Combination 3	Combination 4
Translocation Study	2,000	$205	2,000	2,000		
Translocation Program	1,500	$205	1,500	1,500		
Adoption	2,550	$122	2,550	2,550	2,550	2,550
Research, Zoos, Education	1,000	$200	1,000	1,000	1,000	1,000
Long-term Maintenance	unknown	$854	13,950	300	17,450	300
Euthanasia	unknown	$44		13,650		17,150
Total Tortoises Handled			21,000	21,000	21,000	21,000
Survey/Removal Costs Per Year			$75,000	$75,000	$75,000	$75,000
Developer Costs Per Year			$50,000	$50,000	$50,000	$50,000
Total Thirty Year Collection Cost			$3,750,000	$3,750,000	$3,750,000	$3,750,000
Annualized Management Costs Per Year			$330,847	$104,537	$342,980	$33,830
Total Thirty Year Management Cost			$13,141,900	$1,484,800	$15,413,400	$1,265,700
Annualized Total HCP Cost			$563,063	$174,493	$638,780	$167,190
Total Thirty Year HCP Cost			$16,891,900	$5,234,800	$19,163,400	$5,015,700
Cost Per Acre			$165	$51	$187	$49

RECORDING REQUESTED BY:
MAIL TO:
Clark County
225 Bridger Avenue
Las Vegas, NV 89155
Attn:_____

Above Space for Recorder's Use

CONSERVATION EASEMENT GRANT

THIS CONSERVATION EASEMENT GRANT ("Easement") is made this ___ day of _____, 199__, by the **CITY OF BOULDER CITY, NEVADA** ("Grantor"), in favor of **CLARK COUNTY, NEVADA** ("Grantee").

WITNESSETH:

WHEREAS, Grantor is the sole owner in fee simple of approximately eighty-five thousand (85,000) acres of real property located in Clark County, Nevada, more particularly described in Exhibit "A" attached hereto and by this reference made a part hereof (the "Property"); and,

WHEREAS, the Grantee is a governmental entity formed under the laws of the State of Nevada and is authorized to hold conservation easements for the conservation and protection of natural resources; and,

WHEREAS, the Property contains significant natural resource, ecological and native habitat values as well as various flora and fauna indigenous to the Property (collectively, the "Natural Resource Values") of great importance to Grantor and Grantee; and,

WHEREAS, significant portions of the Property provide habitat for the desert tortoise (Gopherus agassizii), a federally listed threatened species as well as habitat for other flora and fauna, indigenous to the Property which Grantor and Grantee desire to preserve, protect, maintain and enhance; and,

WHEREAS, the purchase of this Easement has been offered as a mitigation measure to induce the United States Fish and Wildlife Service ("Service") to issue a permit to allow Desert tortoises to be incidentally taken within Clark County pursuant to the provisions of the federal Endangered Species Act; and,

WHEREAS, by execution of this easement, Grantor covenants and agrees that it shall manage the Property in a manner which will assure that the Natural Resource Values will be preserved, protected, maintained and enhanced; and,

WHEREAS, in consideration of the payment of the purchase price and in order to assure that the Natural Resource Values of the Property are preserved, protected, maintained and enhanced during the entire term of this Easement, Grantor is willing to convey this Easement to Grantee.

NOW, THEREFORE, in consideration of the foregoing, and the mutual covenants, terms, conditions, and restrictions contained herein, and for other good and valuable consideration, receipt of which is hereby acknowledged:

1. **GRANT OF EASEMENT**.

Grantor hereby voluntarily grants and conveys this Easement to Grantee for the purposes and on the terms and conditions hereinafter set forth.

2. **PURPOSE**.

It is the purpose of this Easement to assure that the Property will be retained in a natural condition and to prevent any use of the Property that will impair or interfere with its Natural Resource Values. Grantor covenants and agrees that it shall manage, use and allow the use of the Property for only such activities which do not impair the conservation, protection, restoration and enhancement of the Natural Resource Values, including, without limitation, those involving the preservation and enhancement of the habitat of the Desert tortoise and other flora and fauna indigenous to the Property.

3. **RIGHTS OF GRANTEE**.

To accomplish the purpose of this Easement the following rights are conveyed to Grantee by this Easement:

(a) To enforce the terms of this Easement, and to the extent it deems advisable, to institute measures to preserve, protect, manage and study the Natural Resource Values of the Property, and in particular the habitat of the desert tortoise, in a manner consistent with any habitat conservation plan for the Desert tortoise affecting the Property to which Grantee is a party and which has been executed or approved by the Service.

(b) To enter upon and traverse all portions of the Property other than improved structures at all times in order to monitor Grantor's compliance with and otherwise enforce the terms of this Easement; provided that such entry shall not unreasonably impair or interfere with Grantor's use and quiet enjoyment of the Property or unreasonably disturb other natural resources existing on the Property.

(c) To prevent any activity on or use of the Property that is inconsistent with the purposes of this Easement and to require the restoration of such areas or features of the Property that may be materially damaged by any inconsistent activity or use.

(d) Notwithstanding the foregoing, Grantee shall not construct any trails or other access facilities, or any other improvements on the Property without the prior written approval of Grantor and the Service.

4. **PROHIBITED USES**.

Any activity on or use of the Property inconsistent or incompatible with the purposes of this Easement is prohibited. Without limiting the generality of the foregoing, the following activities shall be prohibited, except with the express written consent of the Grantee and the Service:

(a) All motorized vehicle activity, including all competitive and organized events, except on designated roads and trails, which designated roads and events have been approved by the Service in cooperation and consultation with the Clark County Desert Tortoise Implementation and Monitoring Committee or any successor Committee or entity formed or established by Clark County in connection with any Habitat Conservation Plan to benefit the Desert tortoise. ("Monitoring Committee");

(b) All military maneuvers, clearing for agriculture, land fills, and any other surface disturbance that diminishes the capacity of the land to support Desert tortoises and other native flora and fauna;

(c) Grazing by cattle, burros, horses, and domestic sheep;

(d) Commercial flora harvest and fauna collection;

(e) Non-commercial vegetation harvest, except by permit issued by Grantor and relevant State and Federal agencies;

(f) Non-commercial collection of biological specimens, except by permit issued by Grantor and relevant state and federal agencies;

(g) Dumping, refuse disposal, littering and use of herbicides or biocides;

(h) Depositing of captive or displaced desert tortoises or other animals, except pursuant to translocation research projects authorized by the Service;

(i) Uncontrolled dogs out of vehicles;

(j) Except as provided in Section 6 hereof, the construction of any physical improvement without the written consent of the Grantor and the Service; and,

(k) Discharge of firearms, except in connection with hunting or trapping from September through March.

5. **LAW ENFORCEMENT**.

(a) Grantor shall enact, and at all times keep in full force and effect, all such ordinances, resolutions, orders or regulations as are necessary or convenient to restrict the use of the Property as herein provided, and to allow peace officers as defined in Nevada Revised Statutes, provided by Grantee to cite those violating such ordinances, resolutions, orders or regulations.

(b) Grantor shall allow Grantee to post sufficient signs on and about the Property to adequately inform the public of those uses which are prohibited and permitted on the Property.

(c) Grantee shall contract with state and/or federal land managers or resource agencies to provide peace officers to patrol the Property on a regular basis in order to enforce applicable ordinances, resolutions, orders or regulations adopted pursuant hereto, and, at its discretion, shall cite and prosecute those that engage in such prohibited uses or activities. Grantor shall provide peace officers to monitor activities which it specifically permits to occur on the Property, such as organized off highway vehicle events on designated roads and trails, and at its discretion, shall cite and prosecute those that violate any term or condition of such permitted use.

6. **RESERVED RIGHTS**.

(a) Grantor reserves to itself, and to its successors, assigns, agents and lessees all rights accruing from its ownership of the Property, including the right to engage in or permit or invite others to engage in all uses of the Property that are not prohibited herein and are not inconsistent or incompatible with the purpose of this Easement. Without in any way limiting the foregoing, Grantor reserves the right to permit the following activities on the Property:

(1) Non-intrusive monitoring of Desert tortoise population dynamics and habitats;

(2) Travel on and maintenance of designated and signed roads and trails;

(3) Non-consumptive recreation activities including, without limitation, hiking, bird watching, casual bicycling, casual horseback riding, and photography;

(4) Parking and camping in designated areas approved by the Service in consultation with the Monitoring Committee;

(5) Fire suppression;

(6) Permitted or otherwise controlled maintenance of utilities and ancillary structures;

(7) Surface disturbances that enhance the quality of habitat for wildlife, enhance watershed protection, or improve opportunities for non-motorized recreation including, without limitation, construction of visitors centers, wildlife water projects, and camping facilities;

(8) Population enhancement of native species; and,

(9) Non-manipulative and non-intrusive biological or geological research, by permit.

(b) In addition to the foregoing, Grantor reserves the following limited rights to use the Property which may have adverse impacts upon the Natural Resource Values; provided, however, that any of the following uses shall be allowed only after it has informed the Service of the proposed use and its location and have incorporated such reasonable measures as may be recommended by the Service to minimize and mitigate any adverse impacts on the Natural Resource Values to the greatest extent practicable:

(1) Grantor may discharge effluent onto the Property from its existing waste water treatment plant or any expansion thereof.

(2) Grantor may construct electrical, water, sewer, gas, drainage and other utilities necessary to service that site described on Exhibit B, attached hereto and by this reference made a part hereof; provided, however, that to the greatest extent practicable, it shall utilize existing rights of way and roads for such purposes.

(c) Commencing fifty years from the date hereof, Grantor may petition the Grantee and the United States Fish and Wildlife Service to remove this Easement from the Property. Grantee and the Service may, but need not, agree to remove the Easement from the Property, but only if they each make the following factual findings after a noticed public hearing:

(1) The Property is no longer required for the survival and recovery of the desert tortoise or any other species located on the Property; and,

(2) Development of the Property will not have a substantial adverse impact upon the Natural Resource Values; and,

(3) Development of the Property will not have a significant adverse effect upon air and water quality in the El Dorado and Piute Valleys; and,

(4) Development of the Property will not have a substantial adverse impact upon the open space and recreational uses allowed on the Property pursuant to the terms of this easement.

In the event Grantee and the Service make each of the foregoing findings, Grantee shall, no sooner than three months after the date of making such findings reconvey the Easement to Grantor. During such three month period, any Nevada state, federal or local governmental entity, or any charitable corporation, charitable association or charitable trust which would be qualified to be a holder of the easement pursuant to the provisions of NRS 111.410, et.seq. may challenge such findings and the intention to reconvey the Easement in any state and/or federal court of competent jurisdiction.

7. **REMEDIES.**

(a) In the event of a dispute regarding whether or not any activity or use is inconsistent with the purposes of this Easement, the parties, or either of them, may submit the question to the Service for a determination; provided, however, that the determination of the Service shall not bind either party. It is the intention of the parties that the final arbiter of consistency with the purposes of this Easement shall lie with the court having jurisdiction over the matter.

(b) If either party determines that the other party is in violation of the terms of this Easement or that a violation is threatened, such party shall give written notice to the other party of such violation and demand corrective action sufficient to cure the violation and, where the violation involves injury to the Property resulting from any use or activity inconsistent with the purposes of this Easement, to restore the portion of the Property so injured. If a party fails to cure a violation within sixty (60) days after receipt of notice thereof from the other party, or under circumstances where the violation cannot reasonably be cured within a sixty (60) day period, fails to begin curing such violation within the sixty (60) day period, or fails to continue diligently to cure such violation until finally cured, the aggrieved party may bring an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation by temporary or permanent injunction, to recover any damages to which it may be entitled for violation of the terms of this Easement or injury to any Natural Resource Values protected by this Easement, and to require the restoration of the Property to the condition that existed prior to any such injury. Without limiting Grantor's liability therefor, Grantee, in its sole discretion, may apply any damages recovered from Grantor to the

cost of undertaking any necessary corrective action on the Property. If a party, in its good faith and reasonable discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the Natural Resource Values of the Property, such party may pursue its remedies under this paragraph without prior notice to the other party or without waiting for the period provided for the cure to expire. Each party's rights under this paragraph apply equally in the event of either actual or threatened violations of the terms of this Easement, and each party agrees that the other party's remedies at law for any violation of the terms of this Easement are inadequate and that such party shall be entitled to the injunctive relief described in this paragraph, both prohibitive and mandatory, in addition to such other relief to which such party may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. Each party's remedies described in this paragraph shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity.

(c) Any costs incurred by either party in enforcing the terms of this Easement against the other, including, without limitation, costs of suit and attorneys' fees, and any costs of restoration necessitated by a violation of the terms of this Easement shall be borne by the breaching party. If a party prevails in any action to enforce the terms of this Easement, such party's costs of suit including, without limitation, attorneys' fees, shall be borne by the other party.

(d) Any forbearance by Grantee to exercise its rights under this Easement in the event of any breach of any term of this Easement by Grantor shall not be deemed or construed to be a waiver by Grantee of such term or of any subsequent breach of the same or any other term of this Easement or of any of Grantee's rights under this Easement. No delay or omission by Grantee in the exercise of any right or remedy upon any breach by Grantor shall impair such right or remedy or be construed as a waiver.

(e) Nothing contained in this Easement shall be construed to entitle Grantee to bring any action against Grantor for any injury to or change in the Property resulting from causes beyond Grantor's control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken by Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes.

8. **ACCESS**.

Grantee, its successors, assigns, agents, invitees and licensees shall have the right of access to the Property at all times as provided in Section 2 (b) hereof. No right of access by

the general public to any portion of the Property is conveyed by this Easement.

9. COSTS AND LIABILITIES.

Except as set forth in this Easement or as otherwise agreed in writing between the parties hereto, Grantor retains all responsibilities related to the ownership, management, operation, upkeep, and maintenance of the Property, and shall hold Grantee free and harmless from and against any and all claims, demands, lawsuits, damages or liability arising out of or in any way connected to the Property, except for those claims, demands, lawsuits, damages or liabilities caused by the negligent or malicious actions or inaction of Grantee or its agents. Grantee shall hold Grantor free and harmless from and against any and all claims, demand, lawsuits, damages or liability arising out of or in any way connected to negligent or malicious actions or inactions of Grantee or its agents in connection with this Easement.

10. ASSIGNMENT.

This Easement is transferable, but only with the written consent of the Grantor and the Service, which consents shall not be unreasonably withheld. Grantee may transfer this easement only to entities authorized to acquire and hold conservation easements under the laws of the state of Nevada. As a condition of such transfer, the transferee shall agree to enforce the terms of the easement and to commit itself to assuring that the conservation purposes that this grant is intended to advance are carried out.

11. SUBSEQUENT TRANSFERS.

Grantor agrees to incorporate the terms of this Easement in any deed of other legal instrument by which Grantor divests itself of any interest in all or a portion of the Property, including, without limitation, a leasehold interest. Grantor further agrees to give written notice to Grantee and the Service of the transfer of any interest at least fifteen (15) days prior to the date of such transfer. The failure of Grantor to perform any act required by this paragraph shall not impair the validity of this Easement or limit its enforceability in any way.

12. ESTOPPEL CERTIFICATES.

Upon request by Grantor, Grantee shall within fifteen (15) days execute and deliver to Grantor any document, including an estoppel certificate, which certifies Grantor's compliance with any obligation of Grantor contained in this Easement and otherwise evidences the status of this Easement as may be requested by Grantor.

13. NOTICES.

Any notice, demand, request, consent, approval, or communication that either party desires or is required to give to the other shall be in writing and either served personally or sent by first class mail, postage prepaid, addressed as follows:

To Grantor: City of Boulder City
900 Arizona Street
Boulder City, NV 89005
Attn: City Manager

To Grantee: Clark County
225 Bridger Avenue
Las Vegas, NV 89155
Attn: County Manager

To Service: United States Fish and Wildlife Service
4600 Kietzke Lane, Building C-125
Reno, NV 89502-5093
Attn: Field Supervisor

or to such other address as either party from time to time shall designate by written notice to the other.

14. RECORDATION.

Grantee shall promptly record this instrument in the official records of Clark County, Nevada and may re-record it at any time as may be required to preserve its rights in this Easement.

15. GENERAL PROVISIONS.

(a) The interpretation and performance of this Easement shall be governed by the laws of the State of Nevada.

(b) Any general rule of construction to the contrary notwithstanding, this Easement shall be construed in favor of the grant to effect the purpose of this Easement. If any provision in this instrument is found to be ambiguous, an interpretation consistent with the purposes of this Easement that would render the provision valid shall be favored over any interpretation that would render it invalid.

(c) If any provision of this Easement, or the application thereof to any person or circumstances, is found to be invalid, the remainder of the provisions of this Easement, or the application of such provision to persons or circumstances other than those as to

which it is found to be invalid, as the case may be, shall not be affected thereby.

(d) This instrument sets forth the entire agreement of the parties with respect to the Easement and supersedes all prior discussions, negotiations, understandings, or agreements relating to the Easement, all of which are merged herein.

(e) Nothing contained herein will result in a forfeiture or reversion of Grantor's title in any respect.

(f) The covenants, terms, conditions, and restrictions of this Easement shall be binding upon, and inure to the benefit of, the parties hereto and their respective successors, and assigns and shall run in perpetuity with the Property, unless terminated pursuant to Section 6(c) hereof.

(g) The captions in this instrument have been inserted solely for convenience of reference and are not a part of this instrument and shall have no effect upon construction or interpretation.

(h) The parties may execute this instrument in two or more counterparts, which shall, in the aggregate, be signed by both parties; each counterpart shall be deemed an original instrument as against any party who has signed it. In the event of any disparity between the counterparts produced, the recorded counterpart shall be controlling.

IN WITNESS WHEREOF, Grantor and Grantee have entered into this Easement effective as of the day and year first above written.

GRANTOR: CITY OF BOULDER CITY

By:_____

GRANTEE: CLARK COUNTY

By:_____

EXHIBIT A

DESCRIPTION OF THE DESERT TORTOISE CONSERVATION EASEMENT

In T. 23 S., R. 63 E.

The South half, and the South half of the North half of Section 25.

Section 36.

Those portions of Section 35 southeast of the right-of-way of US 95.

The South half of Section 26 southeast of the right-of-way of US 95, and the South half of the Northeast quarter, and the South half of the Northwest quarter southeast of the right-of-way of US 95.

In T. 23 S., R. 64 E.

The South half, and the South half of the North half of Sections 31 and 32.

The South half, and the Southwest quarter of the Northeast quarter, and the South half of the Northwest quarter of Section 33.

The Southwest quarter of the Southeast quarter, the South half of the Southwest quarter, and the Northwest quarter of the Southwest quarter of Section 34.

In T. 23 1/2 E., R. 64 E.

Fractional Sections 31, 32, 33, 34, and 35.

In T. 24 S., R. 62 E.

Sections 34, 35, and 36.

The South half of Sections 25, 26, and 27.

In T. 24 S., R. 63 E.

Sections 1, 11, 12, 13, 14, 23, 24, 25, 26, 28 and 36.

That portion of Section 2 southeast of the right-of-way of US 95.

The East half of Sections 15 and 22.

The portion of the east half of Section 27 east of the right-of-way of US 95.

The South half of Sections 29 and 30.

The North half and the Southwest quarter of Section 31.

The North half and the Southeast quarter of Section 32.

The Southwest quarter and the North half of Section 33.

The North half of Section 34.

The North half of Section 35.

In T. 23 S., R. 63 1/2 E.

The South half, and the South half of the North half of Fractional Section 36.

In T. 24 S., R. 64 E.

Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 26, 27, 28, 29, 30, 31, 32, 33, 34, and 35.

In T. 25 S., R. 62 E.

Sections 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36.

In T. 25, S., R. 63 E.

Sections 17, 18, 19, 20, 21, 28, 29, 30, 31, 32, and 33.

The West half of Sections 4 and 9.

The East half of Section 5.

The Northwest quarter of Section 6.

The South half and the Northwest quarter of Section 16.

The Southwest quarter of Section 15.

The West half of Sections 22 and 27.

The West half of Section 34.

In T. 25 S., R 64 E.

Sections 1, 2, 3, 4, 5, and 6.

In T. 26 E., R. 62. E.

Sections 1, 2, 11, 12, 13, and 14.

In T. 26 S. R. 63 E.

Sections 4, 5, 6, 7, 8, 9, 16, 17, and 18.

All in the State of Nevada. Range references above are with respect to Mount Diablo Base and Meridian.

COMMENTS

OF CLARK COUNTY
AND
THE DESERT TORTOISE HABITAT CONSERVATION PLAN
STEERING COMMITTEE
REGARDING
PROPOSED CRITICAL HABITAT FOR THE DESERT TORTOISE

INTRODUCTION

Since the Fall of 1989, when the desert tortoise was listed on an emergency basis, Clark County has sponsored a dialogue among varied social, environmental and economic interests within the County for the purpose of generating a Habitat Conservation Plan (HCP) for the desert tortoise with the goal of securing an Incidental Take Permit pursuant to Section 10(a)1(B) of the Endangered Species Act. Meetings of the HCP Steering Committee, which has members from virtually every group interested in the outcome of the plan and the effects of the listing and designation, have been held on a regular basis for the past four years. It has reviewed both the proposed Recovery Plan as well as the proposal for Critical Habitat. After consideration of Proposed Habitat within Clark County, and after considerable debate and consideration of the economic and biological impacts resulting from the proposal, and after receiving input from both the Fish and Wildlife Service and the Bureau of Land Management which is the federal land manager for all of the affected lands, it has directed that this comment be forwarded to you with the hope and expectation that its thoughts will be given serious consideration.

As indicated on Exhibit "A" to this document, we are suggesting two relatively small adjustments to Critical Habitat as proposed by the Service. Each of these adjustments occur within close proximity to rural communities in Clark County, and failure to make the requested modifications could result in significant economic impacts upon those communities. Our position is that the current proposed boundaries are too close to existing communities to allow room for reasonable economic growth and that the Economic Analysis did not consider the economic effects of placing the boundaries in close proximity to those communities. In addition, the requested modifications will have little effect upon the ability of the remaining areas designated as Critical Habitat to function as meaningful wildlife management areas.

ECONOMIC ANALYSIS

While the Economic Analysis of Critical Habitat Designation for the Desert Tortoise may accurately portray the cumulative economic impacts to the sectors and industries surveyed in the analysis with respect to the designation of Critical Habitat as a whole or on a county-by-county basis, it does not provide a basis for meaningful comment with respect to the type of proposed minor adjustments we are proposing which may result in an insignificant economic differential when viewed on a County-wide or Regional basis, but which could very well have a dramatic and drastic effect upon small rural communities.

Section B.1 of the Economic Analysis recognizes that:

> "The economic influence of urban centers in the regions...and highly productive irrigated agriculture overwhelm the effects of habitat designation on small rural communities likely to be affected by designating CHU's." (pg. 12); and

> "....important activities in rural areas may appear to be insignificant when compared to the entire regional economy. For example, mining does not appear to be an important employer in the seven counties but may contribute to the economic stability of a small rural community that offers few other employment opportunities." (pg. 11)

However, after recognizing that the economic effects upon rural communities may not be

statistically relevant when the problem is viewed on a macroeconomic scale, but that the proposed designation may have a significant effect upon rural areas which would be virtually encircled by Critical Habitat, the report makes no attempt to analyze any aspect of those effects, with the exception of the effects of grazing, mining and recreation. Furthermore, the grazing, mining and recreational use analysis was done on a County-wide basis, and thus, the effects upon any individual community were overlooked entirely.

In fact, the Economic Analysis incorrectly notes that "there are no towns adjacent to the Mormon Mesa CHU, except unincorporated Carp (population about 8 to 10 people)." (pg. 43-44). In fact, as illustrated on Exhibit B, the unincorporated towns of Bunkerville, Glendale, Moapa and Moapa Valley are all adjacent to the Mormon Mesa CHU. Indeed, the Mormon Mesa CHU encompasses a large portion of the boundaries of the unincorporated town of Moapa.

The Economic Analysis also notes "...that there are no towns contiguous to (the Gold Butte-Pakoon CHU) and no economic base of activities in the area." (pg. 43). In fact, the City of Mesquite, with rapidly growing population of 3,000, will be directly affected by the proposed Gold Butte-Pakoon CHU. While this comment makes no specific recommendation with respect to the boundaries of Critical Habitat in that area, we would respectfully suggest that the Service assure itself that the community has adequate and reasonable space into which to grow.

Each of the two requested exclusions from Critical Habitat reflect modifications which will allow a reasonable area into which the communities to which they are adjacent may grow. Each of

the communities mentioned are islands of private property in a sea of BLM administered land, as shown on Exhibit "A".

It is our belief that designation of Critical Habitat will most likely result in those areas being designated DWMA's in the BLM's Resource Management Plan, and that those lands will be set aside in perpetuity primarily for the benefit of the natural resources located therein. Once designated as Critical Habitat, the BLM will be prohibited, pursuant to the provisions of Section 7 of the Endangered Species Act, from ever designating any portion of those lands as available for disposition to allow economic growth because such growth would undoubtedly result in the destruction or adverse modification of Critical Habitat. Thus the growth and economic opportunities available to those communities would be limited to their little islands of private lands.

During the period of 1982 through 1992, the population of Clark County increased by a whopping 68 percent, one of the largest percentage increases anywhere in the United States. During the same time span, the populations of the unincorporated towns increased by over 77 percent. (Clark County Department of Comprehensive Planning). This type of growth can be expected to continue as urban dwellers tire of the various ills which plague most metropolitan areas. Unfortunately, because of their relatively remote locations, these communities will not be able to reap the economic benefits associated with employment in the major industries of Clark County, outlined in the Economic Analysis, which are for the most part located in the Las Vegas Valley. Instead, they will have to rely upon economic and physical growth within their

own communities, which will be precluded if surrounded by Critical Habitat without intervening lands which have not been so designated, and which would otherwise be available for disposal by the BLM. Neither the economic effects upon those communities nor the possible economic benefits to the Treasury of the United States as a result of disposal and development of that land was analyzed, notwithstanding the statement made by the authors that:

> "Costs of designating CHU's are the net economic costs of precluding or significantly restricting land uses over the period of analysis." (pg. 12)

The Economic Analysis notes that agriculture and mining account for only 0.1 percent of the total earnings for Clark County. However, according to the Nevada Statistical Abstract, 1992, mining accounted for 2.1 percent of total employment. Furthermore, for the rural communities in question, the impact is significantly more important, as agriculture and mining are currently the major industries of those rural communities. The annual payroll for the mining industry doubled between 1984 ($6,240,000) and 1989 ($12,592,000). (Nevada Statistical Abstract, 1992, pg. F-12).

A large portion of Clark County is underlain by a geologic environment known to host precious metal deposits. This is indicated by the historic precious metal discoveries at Searchlight, Eldorado Canyon, Moapa, Goodsprings and Gold Butte. Only the exposed rock areas have thus far been exploited. Many believe that great potential may exist in the unexplored ground underlying the overburden alluvial fill in many of the county's valleys. It is this type of ground

that is now being exploited in the northern part of the state and could hold great potential for Clark County as well. The application of new technologies to the exploration and extraction of precious metals deposits is allowing the mining industry to look to old mining areas with new eyes, and mining industry officials are now viewing Clark County with renewed interest. While the Critical Habitat designation will not preclude mining, it will undoubtedly increase the cost of development, and thus discourage mining ventures from even looking at these areas. Unlike many other uses of public lands, mining is a commercial endeavor that generates employment and economic growth in rural areas. The modifications proposed by this comment on Critical Habitat represents an attempt to balance the economic interests of those communities with preservation of the desert tortoise and other natural resources in the area. Designating Critical Habitat over the entire area will discourage mining and will cause adverse economic impacts both immediate and long term to the potential employment growth and economic development of towns such as Searchlight, Moapa and Mesquite as well to the tax revenues that would flow to Clark County and the State of Nevada from having productive mines in the area.

While the Service is correct in noting that the "Piute and Eldorado Valleys already have been designated as Tortoise Management Areas..." (pg. 43), the proposed Piute-Eldorado CHU contains additional land which is not currently included in the Tortoise Management Area. One such area includes the currently existing Jetco Enterprise Inc. mining operation. Exhibit "C" attached hereto sets forth the possible effects upon that enterprise by being included in Critical Habitat.

Furthermore, the Economic Analysis did not take into consideration the likely increased costs of enforcement resulting from establishing the boundaries of Critical Habitat in close proximity to these rural communities. The custom and culture of these communities has included the use of the lands in question for extensive recreational use for many years. While the proposed restrictions within Critical Habitat as set forth in the recovery plan do not preclude some recreational uses, it will restrict and prohibit some uses which have traditionally occurred on those lands. Of particular interest are issues associated with the Meadow Valley Wash and its traditional use as a recreation area for these rural communities. By placing the boundaries in close proximity to populated centers, the cost of policing and enforcing those restrictions will increase significantly. The experience of the Steering Committee has been that the BLM and other land managers have precious few dollars available to adequately manage their lands under the current conditions, and that the expected increased cost of law enforcement within areas in close proximity of these communities will mean that fewer dollars will be available for other, more meaningful conservation measures within the balance of the reserves. As noted above, Clark County is in the final stages of preparation of a long term Habitat Conservation Plan (HCP) for the desert tortoise. Exhibit "D" is a draft chapter from the Long-Term HCP which includes the major issues relative to rural interests in Clark County.

BIOLOGICAL ANALYSIS

Finally, the exclusions requested in this comment will have no significant effect upon either existing desert tortoise populations in the area nor the ability for the remaining areas to be effectively managed wildlife management areas.

The proposed exclusion in the Moapa/Glendale areas suggests moving the boundary approximately three miles to the North. The key biological issue related to this proposal has to do with the potential adverse effects on the function of this area as a corridor between Mormon Mesa and Coyote Springs. The area that was proposed to be excluded is just over 50 square miles and would result in the narrowing of the width of the potential corridor within Critical Habitat from 9.5 miles to 5.5 miles at its narrowest point. For the most part, the corridor would still be greater than 7 miles wide. Furthermore, the entire corridor supports tortoises in low densities. A total of 15 study plots were surveyed by the BLM for tortoise sign within the area proposed for exclusion and another 20 study plots were surveyed in the portion of the corridor which would remain to the north, as set forth on Exhibit "E". Based on the distribution indicated by the study plots, there appears to be a continuous low density populations of tortoises on either side of Meadows Valley Wash as it runs northward into Lincoln County. The narrowing of the corridor would not be likely to preclude movement between the populations, especially if BLM implements the recommendations of the recovery plan in the remaining designated areas.

The proposed exclusion in the Searchlight area consists primarily of terrain that does not support tortoises, and while there have not been study plots in this area, the experience of the mine operator, and previous comments by officials of the Service as set forth in the comments of Mr. L. R. Tinnel, attached as Exhibit "C" would indicate that its exclusion would not have an adverse effect upon the species.

CONCLUSION

Clark County and the Steering Committee of the Desert Tortoise HCP believe that the proposed exclusions represent a balance between the adverse economic impacts associated with the proposed designation and the needs of the desert tortoise. We are of the opinion that the Economic Impact Analysis is defective because is gave no attention to the impacts on our rural communities, but instead looked only at the overall effects upon the County and the Region. Our efforts to respond to the Economic Analysis with specific economic consequences has led us to recognize that the collection of economic data to calculate the precise impacts may have effectively precluded a detailed report of impacts on those communities. However, the fact that existing data is not available does not mean that the types of adverse economic consequences described in this comment are not real and should not be considered.

Based upon the foregoing economic and biological conclusions, we would respectfully request that the Fish and Wildlife Service exclude those areas set forth on Exhibit "A" from the final designation of Critical Habitat.

Clark County

Office of the County Manager

DONALD L. "Pat" SHALMY
COUNTY MANAGER

DALE W. ASKEW, CMA
ASSISTANT COUNTY MANAGER

JAMES L. LEY
ASSISTANT COUNTY MANAGER

CLARK COUNTY BRIDGER BUILDING
225 BRIDGER AVENUE
LAS VEGAS, NEVADA 89155
(702) 455-3530

June 29, 1993

Mr. David Harlow
U.S. Fish and Wildlife Service
4600 Kietzke Lane, Building C, Room 125
Reno, Nevada 89502

Dear Mr. Harlow:

Clark County values the existence of all plant and animal species within our borders that may be threatened with extinction. The Draft Recovery Plan for the Desert Tortoise (Mojave Population) is a comprehensive document that, if reasonably implemented, should not only aid in the recovery of the desert tortoise, but could also be used to protect other species throughout the range of the Mojave Desert that may be threatened in the future. In a spirit of cooperation, the County would like to work with the U.S. Fish and Wildlife Service and the BLM to achieve the goal of protecting the tortoise while balancing the needs of the public by providing a diversity of activities on the land.

The Clark County Desert Tortoise Habitat Conservation Plan Steering Committee has representatives from a wide range of groups interested in the protection of the desert tortoise. The Steering Committee members have reviewed the Draft Recovery Plan and are submitting the enclosed comments. Staff from the County have provided further comments on the plan. Additionally, enclosed is a copy of the comments the County submitted to the BLM for the Stateline Resource Area's Draft Resource Management Plan because many of these comments relate to possible actions the BLM may implement within Desert Wildlife Management Areas.

If you have any questions about any of these comments, please contact Terry Murphy of my staff at (702) 455-3530.

Sincerely,

JAMES L. LEY
Assistant County Manager

/RG:hh:md
Enclosures
cc: Paul Selzer, Best, Best & Krieger

COMMENTS ON THE DRAFT RECOVERY PLAN FOR THE DESERT TORTOISE
(MOJAVE POPULATION)

SUBMITTED BY CLARK COUNTY, NEVADA
JUNE 25, 1993

STEERING COMMITTEE COMMENTS:

- The Draft Recovery Plan (DRP) does not address preventative measures that should be implemented to deter the release of domesticated and/or "taken" desert tortoises into DWMA's .

- DWMA's should be designed so they do not restrict the growth potential of rural communities. Boundaries should be established which leave enough area to allow for continued growth within all developed rural areas.

- The DRP does not adequately address public education.

- Local uses and customs should be considered when designating roads and trails within the DWMA's.

- On page 71, the statement that prohibits the "discharge of firearms, except for hunting of big game or upland game birds from September through February" should be deleted from the DRP. This provision is irrelevant to the protection of the desert tortoise.

ADDITIONAL COMMENTS FROM CLARK COUNTY

- The DRP should be coordinated with the Stateline Resource Area's Resource Management Plan currently being prepared by BLM.

- The DRP should provide a balance of multiple uses within DWMA's. To the greatest extent practical, these management areas should allow all activities that will not negatively impact desert tortoises.

- Clark County will not support any actions that will establish a DWMA within any portion of the Las Vegas Valley Hydrographic Basin (HB 212). Although the text does not describe this as a possibility, the map on page 48 appears to include portions of the Las Vegas Valley in the Coyote Spring DWMA.

- The maps in the DRP are too generalized. While it is understood that the maps need to be somewhat vague since no specific DWMA boundary lines have been established, these maps need to include enough landmarks to give the reader a reasonable number of reference points to determine affected areas.

- The DRP should allow some flexibility for utility corridors or temporary land disturbances initiated by public agencies.

- On page 71, the prohibition of rock hounding and minor collection of mineral specimens seems to be an extreme limitation since mining operations will be allowed within the DWMA's. This provision should be deleted from the DRP.

- On page vi, the budget numbers shown under "Need 1" are in three year increments after 1995. Does this mean that all the money will only be spent every third year? Additionally, these numbers do not appear to be consistent with the ten year budget tables in the supplementary document entitled: "Proposed Desert Wildlife Management Areas for Recovery of the Mojave Population of the Desert Tortoise."

- On page vi, the education budget listed under "Need 2" should be revised to allow some expenditures for public education throughout the term of the recovery plan, rather than spending all the money during the first year.

- On page 63, the text indicates that private and State owned lands should be acquired whenever possible. The cost/benefit of acquiring small parcels of private property within DWMA's should be analyzed to determine if the money spent to acquire these private inholdings would be better utilized in other recovery efforts.