



United States Department of the Interior

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December 20, 2004
File No. 1-5-96-F-023R.3

Memorandum

To: Assistant Field Office Manager, Division of Recreation and Renewable Resources, Bureau of Land Management, Las Vegas Field Office, Las Vegas, Nevada

From: Field Supervisor, Nevada Fish and Wildlife Office, Reno, Nevada

Subject: Biological and Conference Opinions for Reinitiation of Consultation on the Las Vegas Valley Programmatic Biological Opinion (File No. 1-5-96-F-023R, as amended) and Previously Reinitiated (File No. 1-5-96-F-023R.2), to Expand the Disposal Boundary, Clark County, Nevada

This document transmits the U.S. Fish and Wildlife Service's (Service) biological and conference opinions based on our review of the previous programmatic biological opinions for the Las Vegas Valley (File Nos. 1-5-96-F-023R & 1-5-96-F-023R.2, as amended) and proposed action described in the September 2004 biological assessment (Bureau of Land Management [BLM] 2004a) and its effects on the federally listed as threatened Mojave desert tortoise (*Gopherus agassizii*) in accordance with section 7 of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*). Your request was dated and received on September 10, 2004, and supplemental information (BLM 2004c) was dated and received on December 2, 2004, at which time formal consultation was initiated.

This document also includes a conference opinion on the Las Vegas buckwheat (*Eriogonum corymbosum* Bentham var. *nilesii* Reveal *in press*), a plant taxon proposed by the State of Nevada for critically endangered status in accordance with Nevada Revised Statutes (NRS) 527.270-.300. While the Service has not proposed the Las Vegas buckwheat for listing as endangered or threatened under the Act or elevated the taxon to candidate status, BLM and the Service agreed conferencing was appropriate to identify pertinent conservation measures that would reduce the level of effects to the species that are likely to occur from implementation of the proposed action and subsequent activities. Should the species be listed during implementation of the subject action, the conference opinion can be adopted as a biological

opinion if requested by BLM, provided no significant new information is obtained (including that identified during the rulemaking process) and no significant changes to the Federal action are made that would alter the contents of the opinion.

The biological and conference opinions are based on information provided in the previous biological opinion, as amended and reinitiated; email from C. Ronning (BLM biologist) to M. Burroughs (Service biologist) dated November 30, 2004; BLM memorandum dated September 10, 2004; biological assessment (BLM 2004a), environmental impact statement (EIS) (BLM 2004b), and supplemental information to the biological assessment (BLM 2004c) for the Las Vegas Valley disposal boundary; discussions between the Service and BLM staff; and our files. A complete administrative record of this consultation is on file in the Southern Nevada Field Office, Las Vegas, Nevada.

Consultation History

File No. 1-5-91-F-112. On September 26, 1991, the Service issued a biological opinion to BLM for implementation of their 1984 Management Framework Plan (MFP) within the boundaries of Clark County's incidental take permit (File No. PRT-756260) in the Las Vegas Valley. As a result of the action, approximately 42,240 acres of BLM-administered land was authorized for disposal by sale, land exchange, mineral leases, rights-of-way (ROW) grants, or recreation and public purpose (R&PP) leases. These lands could be developed for residential, industrial, commercial, and public infrastructure projects to accommodate rapid urban development.

File No. 1-5-96-F-023R (1996 Biological Opinion). BLM requested reinitiation of consultation on their 1991 programmatic biological opinion (File No. 1-5-91-F-112) to implement the MFP and Las Vegas District (formerly Stateline) Resource Management Plan (RMP) within the Las Vegas Valley, and increase the programmatic area of anticipated disturbance or disposal from 42,240 acres to 125,000 acres of BLM lands. On April 11, 1996, the Service issued a biological opinion (1996 Biological Opinion) to BLM's Las Vegas District for implementation of portions of their MFP, and proposed Las Vegas District RMP pertaining to land sales, exchanges, leases, and ROWs within the Valley. As a result of urban expansion, most BLM lands within the Valley are highly fragmented and impacted by human activities, particularly a 4,000-acre "exclusionary" zone. BLM delineated the exclusionary zone within the action area for the programmatic biological opinion, which does not contain suitable desert tortoise habitat. Except for lands within the exclusionary zone, BLM collected a remuneration fee for each acre of disturbance of desert tortoise habitat within the programmatic boundary.

The Service corrected Term and Condition 2.C. of the opinion by memorandum to BLM dated May 7, 1996, to adjust the fees in accordance with the index for inflation, which is consistent with other opinions issued in Nevada. The fees were or will be used to fund management actions

that are expected to provide direct and indirect benefits to the desert tortoise over time. The 1996 Biological Opinion, as amended was replaced by the April 20, 2001, biological opinion described below.

File No. 1-5-96-F-023R, Amendment 1. On August 15, 1996, BLM requested an amendment to their 1996 Biological Opinion for the Valley to not require fees for disposal actions which are typically covered under section 10(a)(1)(B) of the Act. The Service concurred with BLM's request and modified Term and Condition 2.B. as requested, by memorandum dated August 15, 1996.

File No. 1-5-96-F-023R, Amendment 2. On June 2, 1997, BLM requested a second amendment to their 1996 Biological Opinion for the Valley. In their request, BLM proposed to delete the requirement to collect an additional 10 cents per yard of mineral materials excavated under the opinion after the appropriate per-acre fee had been paid (*i.e.*, \$550 per acre as indexed for inflation). The Service concurred with BLM's request and amended Term and Condition 4.d. as requested, by memorandum dated July 18, 1997.

File No. 1-5-96-F-023R.2 (2001 Biological Opinion). On April 20, 2001, BLM requested a second reinitiation of consultation on the Las Vegas Valley biological opinion. The purpose for modifying the 1996 Biological Opinion was to (1) extend the term of the programmatic biological opinion which expired April 11, 2001, to an indefinite period of time, (2) incorporate the previous correction and amendments into this modified opinion, (3) eliminate the numeric cap, by project, on the number of acres that may be disturbed, and (4) delete the discretionary clause addressing possible non-waiver of fees for actions within the urbanized exclusionary zone identified in the 1996 Biological Opinion. On October 31, 2001, the Service issued the 2001 Biological Opinion to BLM which incorporated the proposed modifications. The 2001 Biological Opinion is superseded by the subject biological opinion

File No. 1-5-97-F-251. On November 21, 1997, the Service issued a programmatic biological opinion to BLM for implementation of multiple-use actions within their Las Vegas District, excluding desert tortoise critical habitat, proposed desert tortoise Areas of Critical Environmental Concern (ACECs), and the area covered by the Las Vegas Valley programmatic consultation. BLM may authorize activities within the programmatic area that may result in loss of tortoises or their habitat through surface disturbance, land disposal, and fencing, for a period of five years. The total area covered by this programmatic biological opinion is approximately 2,636,600 acres, which includes approximately 263,900 acres of BLM-withdrawn lands in Clark County. This programmatic consultation is limited to activities which may affect up to 240 acres per project, and a cumulative total of 10,000 acres, of desert tortoise habitat excluding land exchanges and sales. Only land disposals by sale or exchange within the defined disposal areas in Clark County may be covered under this consultation, up to a cumulative total of 14,637 acres. The proposed land sale areas occur outside this disposal area. A maximum total of 24,637 acres

of desert tortoise habitat may be affected by the proposed programmatic activities. BLM collects a remuneration fee which is currently \$660 per acre of disturbance of desert tortoise habitat, as indexed annually for inflation.

File No. 1-5-98-F-053. On June 18, 1998, the Service issued a programmatic biological opinion to BLM for implementation of the Las Vegas RMP. The project area for this consultation covers all lands managed by BLM's Las Vegas Field Office, including desert tortoise critical habitat, desert tortoise ACECs, and BLM-withdrawn lands. The Las Vegas Field Office designated 648 square miles of tortoise habitat as an ACEC in the Northeastern Mojave Recovery Unit, and 514 square miles of tortoise habitat as an ACEC in the East Mojave Recovery Unit, through the final RMP. As identified in the RMP, BLM manages 743,209 acres of desert tortoise habitat within four ACECs specifically for desert tortoise recovery. To accomplish desert tortoise recovery in the Northeastern and Eastern Mojave Recovery Units, the Las Vegas Field Office implements appropriate management actions in these desert tortoise ACECs through the RMP including:

- Manage for zero wild horses and burros within desert tortoise ACECs.
- Limit utility corridors to 3,000 feet in width, or less.
- Do not authorize new landfills or military maneuvers.
- Require reclamation for activities that result in loss or degradation of tortoise habitat, with habitat to be reclaimed so that pre-disturbance condition can be reached within a reasonable time frame.
- Limit all motorized and mechanized vehicles to designated roads and trails within ACECs and existing roads, trails, and defined dry washes outside ACECs.
- Allow non-speed off-highway vehicle (OHV) events within ACECs, subject to restrictions and monitoring determinations.
- Prohibit OHV speed events, mountain bike races, horse endurance rides, four-wheel hill climbs, mini-events, publicity rides, high-speed testing, and similar speed based events.
- Within ACECs, do not allow commercial collection of flora. Only allow commercial collection of fauna within ACECs upon completion of a scientifically credible study that demonstrates commercial collection of fauna does not adversely impact affected species or their habitat. This action will not affect hunting or trapping, and casual collection as permitted by the State.

BLM collects a remuneration fee which is currently \$660 per acre of disturbance of desert tortoise habitat, as indexed for inflation.

File No. 1-5-04-SP-408. On October 14, 2003, the Service received BLM's request for a species list for the Las Vegas Valley disposal area. On November 12, 2003, the Service provided a species list to BLM as requested that identified the desert tortoise and the federally threatened bald eagle (*Haliaeetus leucocephalus*) as potentially occurring in the area. In the biological assessment (BLM 2004a), BLM determined that the proposed action for this consultation would result in *no effect* to the bald eagle because the bald eagle is a seasonal migrant to the area and suitable habitat for the bald eagle does not exist within the disposal boundary.

In the November 12th response, the Service informed BLM that the State-protected Gila monster (*Heloderma suspectum cinctum*) may occur within the project area and important plant populations are known to occur in the northern portion of the expanded disposal area, including the Las Vegas buckwheat and the State-listed (critically endangered) Las Vegas bearpoppy (*Arctemecon californica*). Further, the Service advised BLM that conservation efforts and coordination with the State should be conducted to avoid the need to list the buckwheat under the State NRS or the Act as a result of the disposal of lands supporting habitat occupied by or suitable for these plants.

File No. 1-5-96-F-023R.3. On September 10, 2004, the Service received BLM's request to reinstate consultation on proposed actions within the Las Vegas Valley, including expansion of disposal area delineated in the 1996 Biological Opinion. In the memorandum dated November 10, 2004, the Service requested that BLM and the Service conference on the potential effects to the Las Vegas buckwheat that may result from disposal of BLM-administered lands in the northern Las Vegas Valley as proposed in the biological assessment. On December 1, 2004, the Service received the memorandum stating that BLM agreed to conference on the Las Vegas buckwheat. According to the memo, BLM is taking the following steps to facilitate conservation of the species:

- BLM has set up a task force with representatives of the local municipalities, the Service, and other stakeholders to discuss the management of the Conservation Transfer Alternative area (see Description of the Proposed Action below).
- The City of North Las Vegas has withdrawn their nomination of 2,300 acres that support populations of the Las Vegas buckwheat until an agreement for the management of the North Las Vegas sale parcel is in place.
- In the interim, BLM will not process ROW applications or any ground disturbing actions proposed within the Conservation Transfer Alternative area or the North Las Vegas sale parcel until the Record of Decision for the EIS has been signed. In some cases, BLM

would not issue a ROW until the conservation agreement has been negotiated and executed.

- BLM is compiling all the best available data on the species to supplement the biological assessment for the disposal boundary.
- BLM and the Service have agreed that the Conservation Transfer Alternative boundary as mapped in the Draft EIS (BLM 2004b) will not be altered for the Final EIS; however, the boundary may be adjusted as the stakeholders develop the conservation agreement. BLM's Record of Decision will contain language that will reflect flexibility to revise the boundary.

On December 2, 2004, BLM submitted supplemental information to the September 2004 biological assessment specific to the Las Vegas buckwheat.

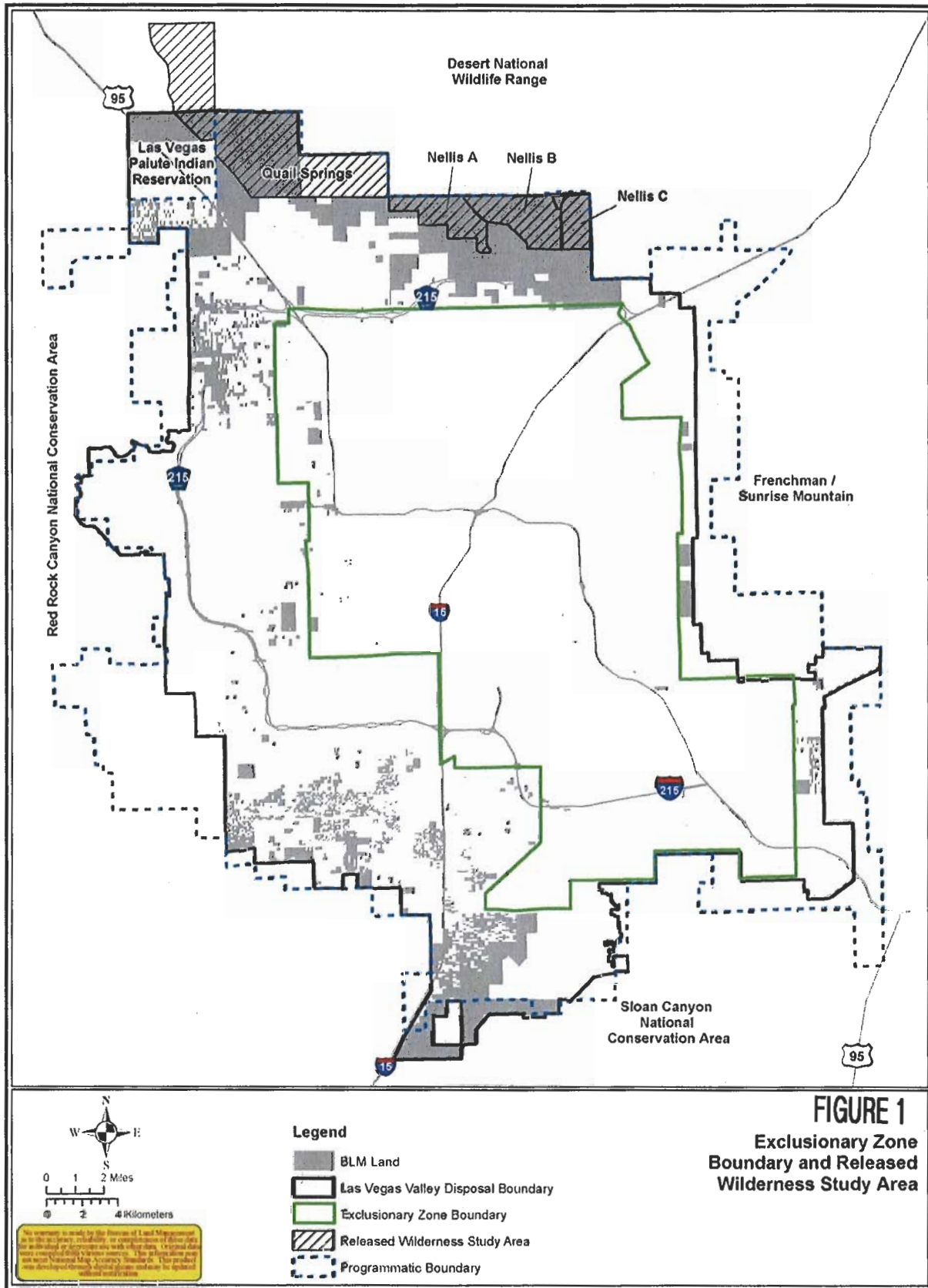
A. BIOLOGICAL OPINION

I. Description of the Proposed Action

a. Proposed Action and Action Area

BLM proposes to continue implementing actions described in the 1996 and 2001 biological opinions, as amended, within the programmatic boundary identified in Figure 1. These two biological opinions were issued for actions proposed under BLM's 1984 MFP, which was superseded by the Las Vegas District RMP when it was finalized in 1998. A complete description of the resource management objectives and directions can be found in the Las Vegas District RMP (BLM 1998a) and the corresponding Record of Decision (BLM 1998b). No reinitiation requirements have been met under the 1996 or 2001 biological opinions.

The purpose of this reinitiation and conference opinion is to address potential effects to the desert tortoise and Las Vegas buckwheat from the expansion of the land disposal boundary established in the 1996 Biological Opinion for the Las Vegas Valley (Figure 1) consistent with the Southern Nevada Public Land Management Act (SNPLMA) of 1998 (Public Law [PL] 105-263), as amended by Title IV of the Clark County Conservation of Public Land and Natural Resources Act of 2002 (Clark County Act [PL 107-282]). The SNPLMA requires the Secretary of Interior to select lands for disposal based on consultations with and nomination by local governments, consistent with community land use plans. As of June 2004, there are 46,701 acres of public lands available for disposal within the boundary designated by SNPLMA and expanded by the Clark County Act. The proposed action would minimize or eliminate land management challenges associated with unconsolidated ownership patterns (BLM 2004a).

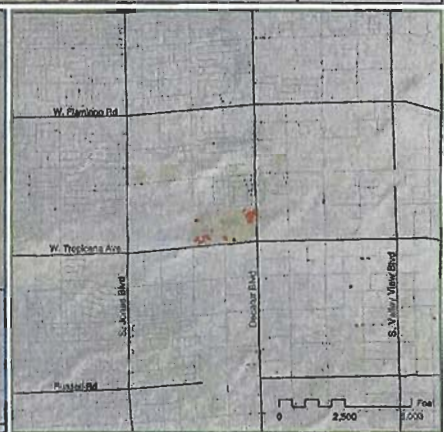
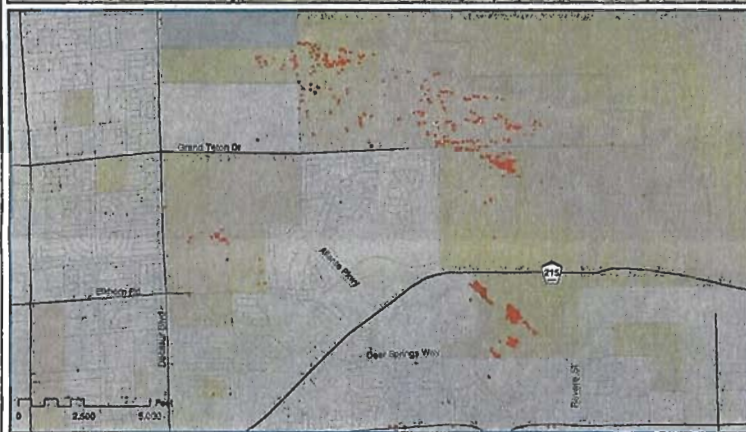
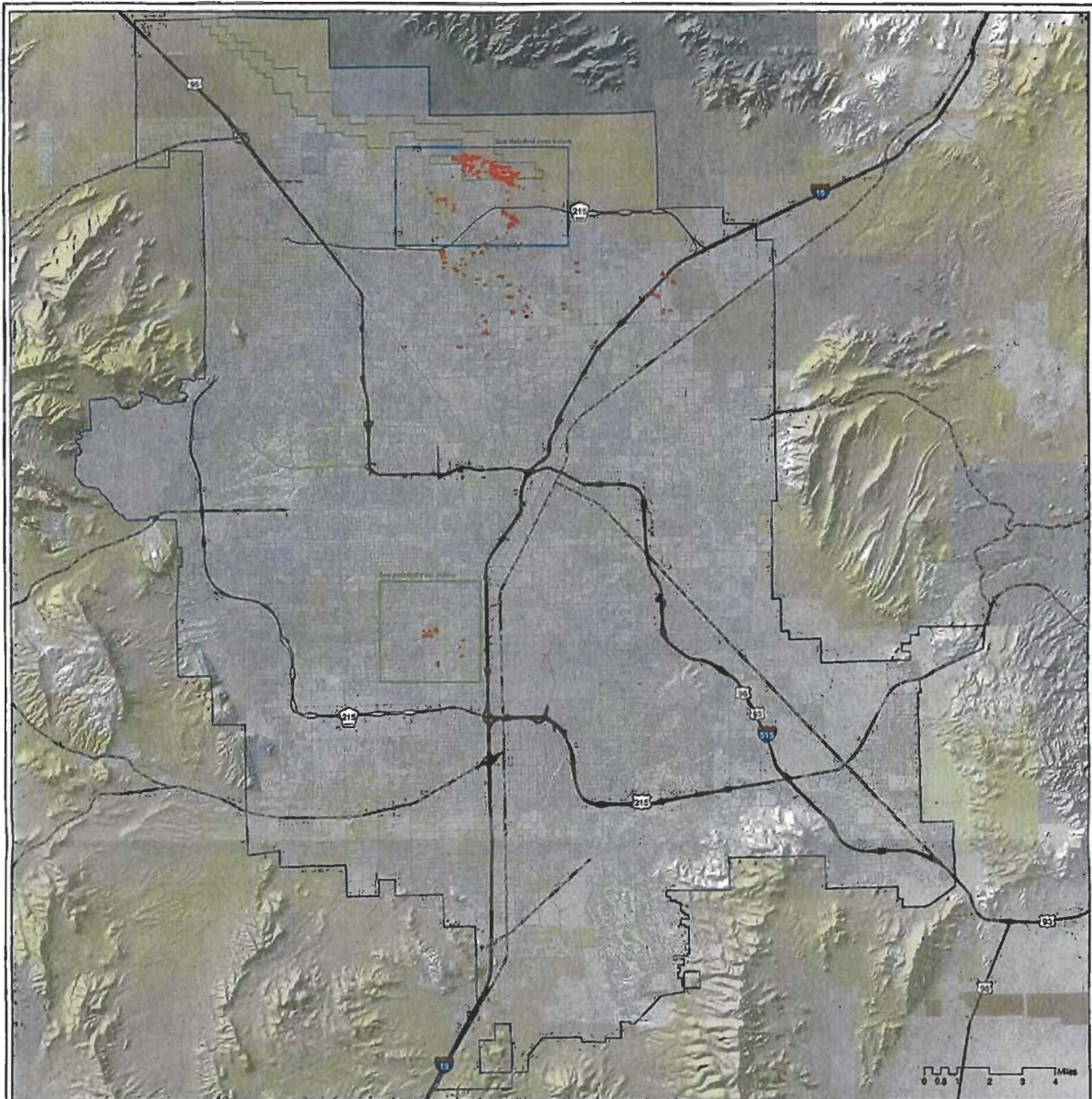


The lands may be transferred to local governments or offered for sale at fair market value in accordance with the procedures for land transfers specified by the Federal Land Policy and Management Act (FLPMA). These lands would be developed for residential, industrial, commercial, and public infrastructure projects to accommodate the rapid urban development in the Las Vegas Valley. Based on the historic rate of development, it is assumed that approximately half of the lands available for disposal (20,000 acres) would be transferred from Federal administration and built out by the end of the planning period which is 2018 (BLM 2004a).

Under the proposed action, the land disposal would not preclude other existing authorized uses of public lands, and BLM would continue to implement realty actions such as ROW grants and R&PP leases. There are 6,469 acres of public land within the disposal boundary area authorized or pending authorization by BLM for R&PP leases, and approximately 520 acres of ROWs have been recorded in the BLM database. The number of ROW grants and R&PP leases is projected to decrease on an annual basis as the remaining BLM lands are transferred or sold; however, approximately 4,500 acres are expected to be granted for ROW uses, and 1,500 acres for R&PP leases through 2015 (BLM 2004a).

In addition to the proposed action, a conservation transfer alternative was developed to address potential effects to unique paleontological resources, cultural resources, and special status species that were located during field surveys conducted in support of the EIS for the disposal boundary. Under this alternative, lands within the conservation transfer area (CTA) (Figure 2) may be nominated for transfer to local or regional government agencies through the same process as other disposal lands; however, BLM would not transfer title to any lands within the CTA until a conservation agreement has been negotiated and executed. The agencies would be required to manage the lands consistent with the approved conservation agreement to ensure protection of sensitive resources. As stated above, BLM would establish an interagency steering committee to address options on how best to conserve the sensitive resource values within the CTA, consistent with the intent of SNPLMA while meeting the land development expectations of local governments (BLM 2004b). Similar to the proposed action, BLM would continue to implement realty actions under the Conservation Transfer Alternative. Approximately 1,200 acres are projected to be transferred under R&PP leases and 3,500 acres are targeted for ROW grants (BLM 2004b).

The modified disposal boundary lies within the programmatic boundary of the biological opinion with the exception of 4,654 acres that are contiguous with the programmatic boundary and includes a total of 41,484 acres of desert tortoise habitat. Surveys documented approximately 600 acres of occupied Las Vegas buckwheat habitat within the disposal boundary. The Las Vegas Valley comprises approximately 35 percent of the overall population of the species in Clark County.



Eriogonum corymbosum
Known Locations

FIGURE 2

- | | | | | |
|------------------|---------------------------------------|---------------------------|---------------------------|-----------------------|
| • Buckwheat | — Major Streets | Land Status | Clark County, Nevada | Forest Service |
| — Interstates | — Streets | Bureau of Indian Affairs | Department of Defense | National Park Service |
| — US Highways | ■ Buckwheat Areas | Bureau of Land Management | Department of Energy | Nevada State |
| — State Highways | □ Proposed Conservation Transfer Area | Bureau of Reclamation | Fish and Wildlife Service | Private |
| — County Roads | □ So. NV Public Lands Mgmt Area | | | |

BLM requests the removal of reference to the graphic representation of the exclusionary zone established by BLM in 1996 and identified in the 1996 and 2001 biological opinions. Most of the lands inside the exclusionary zone formerly managed by BLM have since been sold or transferred to private entities or local governmental agencies. The remaining BLM lands within the exclusionary zone have been surveyed and habitat and tortoise density recorded (BLM 2004a). Very few acres remain within the exclusionary zone on which tortoise sign was located during field surveys. This site-specific data will be evaluated for future actions instead of assuming the area is too urbanized to support a viable population of desert tortoise; therefore, the need for a designated exclusionary zone is no longer warranted. Because this analysis is programmatic, for future activities, BLM will make project-level determinations of effects to the desert tortoise and follow the appropriate procedures under section 7 of the Act, which may require preparation of a project-level biological assessment and implementation of additional minimization measures. The Service concurs with BLM's request, and hereby removes the exclusionary zone delineation from consideration for this biological opinion and future programmatic actions covered therein.

The term of this biological opinion is limited and will cover BLM programmatic activities within the action area through December 31, 2006, during which time BLM will prepare a biological assessment for activities proposed on lands administered by the Las Vegas Field Office. The biological assessment will be submitted to the Service with a request to reinstate this biological opinion, as well as other applicable programmatic biological opinions and biological opinions 1-5-97-F-251 and 1-5-98-F-053. The Service will prepare a single programmatic biological opinion under the most recent guidance for programmatic consultations, which will supercede any previous opinions issued to the Las Vegas Field Office, as appropriate. During the term of this biological opinion, BLM activities that would involve disturbance or disposal of 40 acres or less, may proceed without further consultation under this programmatic biological opinion, unless BLM lands have been identified to contain or are adjacent to occupied Las Vegas buckwheat habitat. For those actions that would involve disturbance or disposal of more than 40 acres or have been identified to contain or are adjacent to occupied Las Vegas buckwheat habitat, BLM shall submit action-specific information described in Attachment A to the Service with a request to append the action to this programmatic biological opinion. Within 30 days the Service will respond to BLM's request and append the action to this programmatic biological opinion, as appropriate. Once the proposed action is appended, BLM may proceed with the action.

The action area for this consultation includes those geographic areas within which the direct, indirect, and interrelated/interdependent effects of BLM's programmatic activities are anticipated to occur. For land sales, our effects analysis includes the areal extent of the sale, infrastructure, roads, and adjacent lands that are impacted by the change in use or development of the land such as recreation, and the extent to which the attraction and presence of domestic pets and subsidized predators (*e.g.*, common ravens [*Corvus corax*]) affect the desert tortoise. For ROW grants and

R&PP leases, the action area includes the footprint of disturbance, areal extent of the grant or lease, and may extend into adjacent areas to encompass sound and vibration effects. For all programmatic actions, the action area also includes the home ranges of all desert tortoises that overlap the boundary of the action (*i.e.*, zone-of-influence).

b. Affects Determination Criteria

BLM staff biologists will utilize the extensive survey data gathered during preparation of the biological assessment (BLM 2004a, 2004c) and EIS (BLM 2004b) to determine whether a proposed action within the Las Vegas Valley "may affect," is "not likely to adversely affect" or will have "no affect" on the Mojave population of the desert tortoise and the Las Vegas buckwheat. Only those actions that may affect these species fall under purview of this biological opinion.

Desert tortoise:

1. **May affect:** This determination is appropriate when a BLM biologist finds that desert tortoise may be harmed by the project activity and one or more of the following conditions exist:
 - the presence, or sign of desert tortoise was found within the project footprint;
 - the presence, or sign of desert tortoise was found within one mile of the project footprint where there is contiguous Mojave Desert scrub habitat between the project footprint and the presence or sign of desert tortoise (one mile being the general extent of a tortoise's home range); or
 - no tortoise sign was found on the project footprint, and the project footprint and adjacent unsurveyed area (private property) contains suitable Mojave Desert scrub desert tortoise habitat. (Note: Private property was not surveyed, therefore, BLM does not know if those adjacent parcels contain desert tortoises or their sign. However, based on the quality of the vegetation as observed in visual inspections from the property line or photos of the area, a BLM biologist may determine it is likely that tortoise occur on the private property that could wander into harm's way within the project footprint. Suitable Mojave Desert scrub habitat ranges from undisturbed to moderately disturbed vegetation and soil that has adequate cover and forage to support at least one desert tortoise.)
2. **Not likely to adversely affect:** This determination is appropriate when a BLM biologist finds that tortoise habitat characteristics exist in the project footprint and/or adjacent area(s), but desert tortoises are not likely to be present; the conditions do not meet the "may affect" criteria above; the project footprint and area directly adjacent to the footprint has Mojave Desert scrub habitat, but it is not of a quality or quantity to support desert tortoises; or a BLM

biologist determines that marginal or poor potential habitat exists and it is unlikely that a tortoise could wander into harm's way during project activities. This determination requires informal consultation. No remuneration fees would be required and the disturbance would not apply towards the acreage in the Description of the Proposed Action for this biological opinion if the Service concurs with the determination.

- 3. No affect:** This determination is appropriate when a BLM biologist finds that no take of desert tortoise will occur as a result of the proposed action; and desert tortoise habitat does not exist within or adjacent to the project footprint, or the project footprint and adjacent area are completely disturbed. These areas typically have been denuded by previous activity and no longer support suitable desert tortoise habitat. This determination is common for interior city parcels (empty lots) and along road margins. Consultation is not required with the Service.

Las Vegas buckwheat:

- 1. May affect:** This determination is appropriate when a BLM biologist finds that Las Vegas buckwheat may be adversely or beneficially affected by the project activity and occupied habitat was located within the project area and/or adjacent area(s).
- 2. Not likely to adversely affect:** This determination is appropriate when a BLM biologist finds that Las Vegas buckwheat habitat characteristics exist in the project footprint and/or adjacent area(s), but the species was not observed, or suitable habitat exists but the species is not likely to be present because of marginal or poor habitat quality.
- 3. No affect:** This determination is appropriate when a BLM biologist finds that no impacts to Las Vegas buckwheat will occur as a result of the proposed action; suitable habitat does not exist within or adjacent to the project footprint; or the project footprint and adjacent area have been denuded of native vegetation by a previous activity and no longer support suitable habitat. This determination is common for interior city parcels (vacant lots) with existing disturbance and along road margins.

c. Proposed Minimization Measures

Desert tortoise:

BLM proposes the same measures in the 1996 and 2001 biological opinions to minimize potential effects to the desert tortoise as a result of actions included in this consultation. Surface disturbance of the lands following transfer out of Federal administration shall fall under purview of the Clark County Desert Conservation Program and incidental take permit, and may include a fee of \$550 per acre impacted.

Las Vegas buckwheat:

The following describes avoidance and minimization strategies for BLM lands within the disposal boundary that support the Las Vegas buckwheat (BLM 2004c). These measures will be implemented in an effort to avoid a potential listing action by the Service.

1. Conservation Transfer Area

The Upper Las Vegas Wash has been identified as a unique feature within the Las Vegas Valley disposal boundary. Because of the significant paleontological resources, cultural resources, and special status species occurring within this area, the CTA was proposed (Figure 3). The CTA also provides for natural flood control, which is critical to maintaining the sensitive resources over time as adjacent areas are developed.

BLM has initiated a process to ensure appropriate management of the sensitive resources, including the Las Vegas buckwheat, within the CTA. This process will culminate in the development of a conservation agreement, which would be signed by BLM, the Service, and local governments. The conservation agreement would define the allowable uses inside the CTA and provide for the long-term protection of Las Vegas buckwheat prior to the transfer of lands within the boundaries defined by the CTA.

BLM has established a steering committee to provide input into the formulation of the conservation agreement. The committee consists of representatives from the local, county, and state governments, utility companies, environmental and special interest groups, and developers. This committee is advisory in nature and will work together to devise a strategy that balances land use and resource protection within the CTA. BLM will develop the agreement in a manner that addresses the needs of the community and conserves the habitat for the Las Vegas buckwheat as well as other sensitive resources. The following measures shall apply to lands within the CTA:

- BLM would not transfer title to any lands within the CTA (portions north of T.19S, R.61E, sections 15 and 16) until all parties have signed the conservation agreement. This agreement would provide for the long-term protection of sensitive resources within the CTA boundary. The process for defining the CTA boundary will be articulated in the Record of Decision.
- After the land is transferred, the owners would be required to manage the lands consistent with the approved conservation agreement to ensure long-term protection of sensitive resources.
- The conservation agreement will guide land and resource management activities within the CTA consistent with the intent of SNPLMA, while meeting the land development

expectations of local governments. Some actions, including educational and compatible recreational opportunities, may be explored in the CTA.

- In the Draft EIS, the CTA encompasses 5,000 acres; however, this could be increased up to 8,000 acres, depending on the results of the steering committee meetings.

The steering committee would consider compatible uses of the area, funding mitigation or conservation efforts, designations for R&PP leases, long-term management and maintenance, and activities that support public appreciation of the resources, such as educational and interpretive facilities.

- Some lands within the CTA may be offered for limited development, provided that such actions are consistent with the conservation agreement and that protection measures for the Las Vegas buckwheat are in place prior to approval of development within the area.
- Mitigation and resource protection requirements for any development in the area would be determined through a consultative process among the steering committee and would vary based on the location proposed for development and extent of resource impacts.
- BLM would continue to implement realty actions within the CTA 30 days after the Record of Decision is signed. The conditions related to the ROW grants and R&PP leases would be considered on a case-by-case basis. Approximately 1,200 acres are projected to be R&PP leases and eventually transferred for public purposes to the leaseholder. This amount could be much higher if portions of the CTA are disposed under provisions of the R&PP Act. Approximately 3,500 acres are projected to be covered by ROW grants and eventually transferred.
- Entry and access for mineral resource development on BLM land within the disposal boundary area have been withdrawn under SNPLMA and the Clark County Act, subject to valid existing rights that have already been granted under the mining laws. No mining claims, leases, permits, and community use pits for mineral material sales would be granted as discussed under the proposed action.

2. City of North Las Vegas Nominated Parcel

The City of North Las Vegas nominated 2,300 acres within the disposal boundary for auction in the February 2005 Land Sale. Several large occurrences of Las Vegas buckwheat were documented in the sale parcel area during surveys conducted in support of the Draft EIS. After conferring with the Service and BLM State Director, the City of North Las Vegas decided to withdraw the nomination for the February Sale in order to develop a conservation agreement that defines the actions needed to conserve habitat for the Las Vegas buckwheat. The avoidance and minimization strategy for this area will follow a similar process as the one for the CTA by solidifying conservation measures through a conservation agreement with the City of North Las Vegas, BLM, and the Service.

- BLM would not transfer title to any lands within the parcel nominated by the City of North Las Vegas (portions of T.19S, R.61E, sections 15, 16, and 21) until a conservation agreement has been signed by the City of North Las Vegas, BLM, and the Service that would provide for the long-term protection of the Las Vegas buckwheat and other sensitive resources.
- After the land is transferred, the owners would be required to manage the lands consistent with the approved conservation agreement to ensure protection of sensitive resources.
- The acreage for protection and management of the Las Vegas buckwheat habitat will be defined through meetings with the signatories of the agreement.
- All other conditions as outlined for the CTA above will hold for the City of North Las Vegas nominated parcel, except that the steering committee will be limited to City, BLM, and the Service.
- The City of North Las Vegas may re-nominate the parcel for disposal at some future time when the conservation agreement is signed and approved.

3. Various BLM Parcels within the Disposal Boundary

BLM manages several small parcels of land that have documented Las Vegas buckwheat populations occurring on them. The buckwheat populations are isolated from the larger contiguous populations and are surrounded by developed land. The small number of plants, coupled with the challenges of implementing effective management, preserving these plants *in situ* is difficult. Therefore, prior to the transfer of these parcels the following measures will be evaluated and implemented on a case-by-case basis:

- For the population at Tropicana and Decatur Boulevard (Figure 3 inset), BLM will work with the local governments (Clark County, City of Las Vegas, etc.) to preserve the buckwheat *in situ* by incorporating the habitat into the landscaping design for an R&PP lease for one of the following: A detention basin, nature park, fire station, police station, or trail system. Proposals for educational interpretation of the species and its habitat would be submitted through the SNPLMA funding process. If it is not feasible to preserve the population, the individual plants may be salvaged by a company approved by BLM and relocated to the CTA or other protected area. If available, mature seed will be collected from the plants and maintained at BLM until needed for propagation.
- For any population that will be affected, voucher specimens will be collected and accessioned into the University of Nevada, Las Vegas, herbarium; extirpation documentation will be forwarded to the Nevada Natural Heritage Program in Carson City.

- If feasible, seed banking and soil studies will be conducted to further our understanding of the physical characteristics of the habitat and how seeds are distributed.
- Other actions taken could include stockpiling of topsoil, propagating materials, and transplantation into conserved habitat areas.

II. Status of the Species Rangewide/Critical Habitat

Desert tortoise:

The desert tortoise is a large, herbivorous reptile found in portions of California, Arizona, Nevada, and Utah. It also occurs in Sonora and Sinaloa, Mexico. The Mojave population of the desert tortoise includes those animals living north and west of the Colorado River in the Mojave Desert of California, Nevada, Arizona, southwestern Utah, and in the Sonoran Desert in California. Desert tortoises reach 8 to 15 inches in carapace length. Adults have a domed carapace and relatively flat, unhinged plastron. Shell color is brownish, with yellow to tan scute centers. The forelimbs are flattened and adapted for digging and burrowing. Optimal habitat has been characterized as creosote bush scrub in which precipitation ranges from 2 to 8 inches, where a diversity of perennial plants is relatively high, and production of ephemerals is high (Luckenbach 1982; Turner 1982; Turner and Brown 1982). Soils must be friable enough for digging of burrows, but firm enough so that burrows do not collapse. Desert tortoises occur from below sea level to an elevation of 7,300 feet, but the most favorable habitat occurs at elevations of approximately 1,000 to 3,000 feet (Luckenbach 1982).

Desert tortoises are most active during the spring and early summer when annual plants are most common. Additional activity occurs during warmer fall months and occasionally after summer rainstorms. Desert tortoises spend the remainder of the year in burrows, escaping the extreme conditions of the desert. In Nevada and Arizona, tortoises are considered to be active from approximately March 15 through October 15. Further information on the range, biology, and ecology of the desert tortoise can be found in Berry and Burge (1984), Burge (1978), Burge and Bradley (1976), Bury *et al.* (1994), Germano *et al.* (1994), Hovik and Hardenbrook (1989), Karl (1981, 1983a, 1983b), Luckenbach (1982), Service (1994), and Weinstein *et al.* (1987).

On August 4, 1989, the Service published an emergency rule listing the Mojave population of the desert tortoise as endangered (54 FR 42270). On April 2, 1990, the Service determined the Mojave population of the desert tortoise to be threatened (55 FR 12178). Reasons for the determination included significant population declines, loss of habitat from construction projects such as roads, housing and energy developments, and conversion of native habitat to agriculture. Grazing and OHV activity have degraded additional habitat. Also cited as threatening the desert tortoise's continuing existence were illegal collection by humans for pets or consumption, upper respiratory tract disease (URTD), predation on juvenile desert tortoises by common ravens and kit foxes (*Vulpes macrotis*), fire, and collisions with vehicles on paved and unpaved roads.

On February 8, 1994, the Service designated approximately 6.4 million acres of critical habitat for the Mojave population of the desert tortoise in portions of California, Nevada, Arizona, and Utah (59 FR 5820-5846, also see corrections in 59 FR 9032-9036), which became effective on March 10, 1994. Critical habitat is designated by the Service to identify the key biological and physical needs of the species and key areas for recovery, and focuses conservation actions on those areas. Critical habitat is composed of specific geographic areas that contain the primary constituent elements of critical habitat, consisting of the biological and physical attributes essential to the species' conservation within those areas, such as space, food, water, nutrition, cover, shelter, reproductive sites, and special habitats. The specific primary constituent elements of desert tortoise critical habitat are: Sufficient space to support viable populations within each of the six recovery units, and to provide for movement, dispersal, and gene flow; sufficient quality and quantity of forage species and the proper soil conditions to provide for the growth of these species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality. Critical habitat units were based on recommendations for Desert Wildlife Management Areas (DWMAs) outlined in the *Draft Recovery Plan for the Desert Tortoise (Mojave Population)* (Service 1993). These DWMAs are also identified as "desert tortoise areas of critical environmental concern (ACECs)" by BLM. Because the critical habitat boundaries were drawn to optimize reserve design, the critical habitat unit may contain both "suitable" and "unsuitable" habitat. Suitable habitat can be generally defined as areas that provide the primary constituent elements.

On June 28, 1994, the Service approved the final Desert Tortoise Recovery Plan (Service 1994). The Desert Tortoise Recovery Plan divides the range of the desert tortoise into 6 recovery units and recommends establishment of 14 DWMAs throughout the recovery units. Within each DWMA, the Desert Tortoise Recovery Plan recommends implementation of reserve-level protection of desert tortoise populations and habitat, while maintaining and protecting other sensitive species and ecosystem functions. The design of DWMAs should follow accepted concepts of reserve design. As part of the actions needed to accomplish recovery, the Desert Tortoise Recovery Plan recommends that land management within all DWMAs should restrict human activities that negatively impact desert tortoises (Service 1994). The DWMAs/ACECs have been designated by BLM through development or modification of their land use plans in Arizona, Nevada, Utah, and parts of California.

The California Desert Conservation Area Plan (BLM 1980) is the primary plan that guides the overall management of desert tortoise habitat in California. Land use planning activities are underway in California to complete designation of DWMAs/ACECs. Desert tortoise habitat management in Arizona is covered primarily by the Mojave Amendment to BLM's Arizona Strip RMP, which was prepared to implement the Desert Tortoise Recovery Plan. BLM Arizona Strip Field Office designated 167,065 acres of desert tortoise habitat as ACECs. In Nevada, BLM's Las Vegas, Ely, and Battle Mountain field offices manage desert tortoise habitat; 941,800 acres

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of desert tortoise habitat were designated as ACECs by the Las Vegas and Ely field offices. No desert tortoise critical habitat or proposed ACECs occur within the jurisdiction of the Battle Mountain Field Office. The regulation of activities within critical habitat through section 7 consultation is based on recommendations in the Desert Tortoise Recovery Plan (Service 1994).

Long-term monitoring of desert tortoise populations is a high priority recovery task as identified in the Desert Tortoise Recovery Plan. From 1995 to 1998, pilot field studies and workshops were conducted to develop a monitoring program for desert tortoise. In 1998, the Desert Tortoise Management Oversight Group identified line distance sampling as the appropriate method to determine rangewide desert tortoise population densities and trends. Monitoring of populations using this method is underway across the range of the desert tortoise. Successful rangewide monitoring will enable managers to evaluate the overall effectiveness of recovery actions and population responses to these actions, thus guiding recovery of the Mojave desert tortoise. Rangewide tortoise population monitoring began in 2001 and is conducted annually.

Although recovery of the tortoise will focus on DWMAs/ACECs, section II.A.6. of the Recovery Plan and section 2(b) of the Act provide for protection and conservation of ecosystems on which federally-listed threatened and endangered species depend, which includes both recovery and non-recovery areas. The Mojave Desert ecosystem, of which the desert tortoise and its habitat are an integral part, consists of a dynamic complex of plant, animal, fungal, and microorganism communities and their associated nonliving environment interacting as an ecological unit (Noss and Cooperrider 1994). Actions that adversely affect components of the Mojave Desert ecosystem may directly or indirectly affect the desert tortoise. The Recovery Plan further states that desert tortoises and habitat outside recovery areas may be important in recovery of the tortoise. Healthy, isolated tortoise populations outside recovery areas may have a better chance of surviving catastrophic effects such as disease, than large, contiguous populations (Service 1994).

Changing ecological condition as a result of natural events or human-caused activities may stress individuals and result in a more severe clinical expression of URTD (Brown *et al.* 2002). For example, the proliferation of non-native plants within the range of the tortoise has had far-reaching impacts on tortoise populations. Tortoises have been found to prefer native vegetation over non-natives (Tracy *et al.* 2004). Non-native annual plants in desert tortoise critical habitat in the western Mojave Desert were found to compose over 60 percent of the annual biomass (Brooks 1998). The reduction in quantity and quality of forage may stress tortoises and make them more susceptible to drought- and disease-related mortality (Brown *et al.* 1994). Malnutrition has been associated with several disease outbreaks in both humans and turtles (Borysenko and Lewis 1979). What is currently known with certainty about disease in the desert tortoise relates entirely to individual tortoises and not populations; virtually nothing is known about the demographic consequences of disease (Tracy *et al.* 2004).

a. Desert Tortoise Recovery Plan Assessment and Recommendations

The General Accounting Office (GAO) Report, *Endangered Species: Research Strategy and Long-Term Monitoring Needed for the Mojave Desert Tortoise Recovery Program* (U.S. General Accounting Office 2002), directed the Service to periodically reassess the Recovery Plan to determine whether scientific information developed since its publication could alter implementation actions or allay some of the uncertainties about its recommendations. In response to the GAO report, the Service initiated a review of the existing Recovery Plan in 2003.

In March 2003, the Service impaneled the Desert Tortoise Recovery Plan Assessment Committee to assess the Recovery Plan. The Committee was selected to represent several important characteristics with particular emphasis on commitment to solid science. The charge to the Committee was to review the entire Recovery Plan in relation to contemporary knowledge to determine which parts of the recovery plan will need updating. The recommendations of the Committee were presented to the Service and Desert Tortoise Management Oversight Group approximately a year later, on March 24, 2004. The recommendations will be used as a guide by a recovery team of scientists and stakeholders to modify the 1994 Recovery Plan. A revised recovery plan is anticipated by the end of 2005.

The Committee recognized that the distribution and abundance data indicate trends leading away from recovery goals in some parts of the species' range. These results indicate a need for more aggressive efforts to facilitate recovery. Many of the original prescriptions of the Recovery Plan were never implemented although these prescriptions continue to be appropriate. New prescriptions should be prioritized to assess redundancies and synergies within individual threats.

b. Recovery Units

The Northeastern Mojave Recovery Unit occurs primarily in Nevada, but it also extends into California along the Ivanpah Valley and into extreme southwestern Utah and northwestern Arizona. Vegetation within this unit is characterized by creosote bush scrub, big galleta-scrub steppe, desert needlegrass scrub-steppe, and blackbrush scrub (in higher elevations). Topography is varied, with flats, valleys, alluvial fans, washes, and rocky slopes. Much of the northern portion of the Northeastern Mojave Recovery Unit is characterized as basin and range, with elevations from 2,500 to 12,000 feet. Desert tortoises typically eat summer and winter annuals, cacti, and perennial grasses. Desert tortoises in this recovery unit, the northern portion of which represents the northernmost distribution of the species, are typically found in low densities (about 10 to 20 adults per square mile).

A kernel analysis was conducted in 2003-2004 for the desert tortoise (Tracy *et al.* 2004) as part of the reassessment of the 1994 Recovery Plan. The kernel analyses revealed several areas in which the kernel estimations for live tortoises and carcasses did not overlap. The pattern of non-

overlapping kernels that is of greatest concern is those in which there were large areas where the kernels encompassed carcasses but not live animals. These regions represent areas within DWMA's where there were likely recent die-offs or declines in tortoise populations. The kernel analysis indicated large areas in the Piute-Eldorado Valley where there were carcasses but no live tortoises. For this entire area in 2001, there were 103 miles of transects walked, and a total of 6 live and 15 dead tortoises were found, resulting in a live encounter rate of 0.06 tortoises per mile of transect for this area. This encounter rate was among the lowest that year for any of the areas sampled in the range of the Mojave desert tortoise (Tracy *et al.* 2004).

Kernel analysis for the Coyote Springs DWMA showed areas where the distributions of carcasses and living tortoises do not overlap; however, densities of adult tortoises for the region do not show a statistical trend over time. Thus, while there may be a local die-off occurring in the northern portion of this DWMA, this does not appear to influence the overall trend in the region as interpreted by study plot data. Because permanent study plots for this region were discontinued after 1996, if there have been recent declines in numbers they are not reflected in the kernel analysis. Nevertheless, large regions of non-overlapping carcass and live tortoise kernels in the regions were not identified adjacent to the Coyote Springs DWMA. The probability of finding either a live tortoise or a carcass was relatively very low for Beaver Dam Slope and Gold-Butte Pakoon and moderately low for Mormon Mesa/Coyote Springs.

The Eastern Mojave Recovery Unit is situated primarily in California, but also extends into Nevada in the Amargosa, Pahrump, and Piute valleys. In the Eastern Mojave Recovery Unit, desert tortoises are often active in late summer and early autumn in addition to spring because this region receives both winter and summer rains and supports two distinct annual floras on which they can feed. Desert tortoises in the Eastern Mojave Recovery Unit occupy a variety of vegetation types and feed on summer and winter annuals, cacti, perennial grasses, and herbaceous perennials. They den singly in caliche caves, bajadas, and washes. This recovery unit is isolated from the Western Mojave Recovery Unit by the Baker Sink, a low-elevation, extremely hot and arid strip that extends from Death Valley to Bristol Dry Lake. The Baker Sink area is generally not considered suitable for desert tortoises. Desert tortoise densities in the Eastern Mojave Recovery Unit can vary dramatically, ranging from 5 to as much as 350 adults per square mile (Service 1994).

Ivanpah and Piute-Eldorado valleys contained study plots that were analyzed in the East Mojave Recovery Unit analysis. While there was no overall statistical trend in adult density over time, the 2000 survey at Goffs and the 2002 survey at Shadow Valley indicate low densities of adult tortoises relative to earlier years. Unfortunately, there are no data in the latter years for all five study plots within this recovery unit, and therefore, while there is no statistical trend in adult densities, we cannot conclude that tortoises have not experienced recent declines in this area.

The probability of finding a carcass on a distance sampling transect was considerably higher for Ivanpah, Chemehuevi, Fenner, and Piute-Eldorado, which make up the Eastern Mojave Recovery Unit.

The Northern Colorado Recovery Unit is located completely in California. Here desert tortoises are found in the valleys, on bajadas and desert pavements, and to a lesser extent in the broad, well-developed washes. They feed on both summer and winter annuals and den singly in burrows under shrubs, in intershrub spaces, and rarely in washes. The climate is somewhat warmer than in other recovery units, with only 2 to 12 freezing days per year. The tortoises have the California mitochondrial DNA (mtDNA) haplotype and phenotype. Allozyme frequencies differ significantly between this recovery unit and the Western Mojave, indicating some degree of reproductive isolation between the two.

Desert tortoises in the Eastern Colorado Recovery Unit, also located completely in California, 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. Winter burrows are generally shorter in length, and activity periods are longer than elsewhere due to mild winters and substantial summer precipitation. The tortoises feed on summer and winter annuals and some cacti; they den singly. They also have the California mtDNA haplotype and shell type.

The Upper Virgin River Recovery Unit encompasses all desert tortoise habitat in Washington County, Utah, except the Beaver Dam Slope, Utah population. The desert tortoise population in the area of St. George, Utah, is at the extreme northeastern edge of the species' range and experiences long, cold winters (about 100 freezing days) and mild summers, during which the tortoises are continually active. Here the animals 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, blackbush scrub, and a psammophytic community. Desert tortoises use sandstone and lava caves instead of burrows, travel to sand dunes for egg-laying, and use still other habitats for foraging. Two or more desert tortoises often use the same burrow. Shell morphology and mtDNA have not been studied in this recovery unit, but allozyme variation is similar to that found in the Northeastern Mojave Recovery Unit.

The Western Mojave Recovery Unit occurs completely in California and is exceptionally heterogeneous and large. It is composed of the Western Mojave, Southern Mojave, and Central Mojave regions, each of which has distinct climatic and vegetational characteristics. The most pronounced difference between the Western Mojave and other recovery units is in timing of rainfall and the resulting vegetation. Most rainfall occurs in fall and winter and produces winter annuals, which are the primary food source of tortoises. Above ground activity occurs primarily in spring, associated with winter annual production. Thus, tortoises are adapted to a regime of winter rains and rare summer storms. Here, desert tortoises occur primarily in valleys, on

alluvial fans, bajadas, and rolling hills in saltbrush, creosote bush, and scrub steppe communities. Tortoises dig deep burrows (usually located under shrubs on bajadas) for winter hibernation and summer aestivation. These desert tortoises generally den singly. They have a California mtDNA haplotype and a California shell type.

Desert tortoises are most commonly found within the desert scrub vegetation type, primarily in creosote bush scrub. In addition, they occur in succulent scrub, cheesebush scrub, blackbrush scrub, hopsage scrub, shadscale scrub, microphyll woodland, Mojave saltbush-allscale scrub, and scrub-steppe vegetation types of the desert and semidesert grassland complex (Service 1994). Within these vegetation types, desert tortoises potentially can survive and reproduce where their basic habitat requirements are met. These requirements include a sufficient amount and quality of forage species; shelter sites for protection from predators and environmental extremes; suitable substrates for burrowing, nesting, and overwintering; various plants for shelter; and adequate area for movement, dispersal, and gene flow. Throughout most of the Mojave Region, tortoises occur most commonly on gently sloping terrain with soils ranging from sandy-gravel and with scattered shrubs, and where there is abundant inter-shrub space for growth of herbaceous plants. Throughout their range, however, tortoises can be found in steeper, rockier areas.

The size of desert tortoise home ranges varies with respect to location and year. Females have long-term home ranges that are approximately half that of the average male, which range from 25 to 200 acres (Berry 1986). Over its lifetime, each desert tortoise may require more than 1.5 square miles of habitat and make forays of more than 7 miles at a time (Berry 1986). In drought years, the ability of tortoises to drink while surface water is available following rains may be crucial for tortoise survival. During droughts, tortoises forage over larger areas, increasing the likelihood of encounters with sources of injury or mortality including humans and other predators.

Distribution: The prescriptions for recovery in the Recovery Plan were for individual populations and assumed that preserving large blocks of habitat and managing threats in that habitat would be principally all that would be necessary to recover the species. However, that original paradigm, and the prescriptions made within that paradigm, may be wrong. Existing data have revealed population crashes that have occurred asynchronously across the range. There are reports that some populations, which have crashed previously, have subsequently increased in population density. Additionally, all known dense populations of desert tortoises have crashed. This suggests that density-dependent mortality occurs in desert tortoise populations, and that population dynamics may be asynchronous.

These characteristics indicate that tortoises may exist in a classic metapopulation structure (Hanski 1999; Levins and Culver 1971; Levins *et al.* 1984), and this should portend profoundly different prescriptions for recovery. In particular, if desert tortoises have historically existed in metapopulations, then connections among habitat patches are a necessary part of conservation

prescriptions. Additionally, habitat suitable for tortoises, but without tortoises, should be regarded as equally necessary for recovery. Long-term persistence cannot be determined from tortoise density or tortoise numbers alone, but assessment must include the complexities of metapopulation dynamics and the habitat characteristics that promote metapopulation dynamics including habitat connectivity through inefficient corridors (*i.e.*, partial connectivity), asynchrony of subpopulation dynamics, and several separate habitat patches. Some of the characteristics of proper metapopulation function may already have been obviated by proliferation of highways, and habitat fragmentation due to satellite urbanization. Thus, management may require artificially facilitating metapopulation processes such as movement among patches.

The genetic distinctness of tortoise populations and their pathogens should be assessed to guide all manipulative management actions (*e.g.*, head starting, translocation, habitat restoration, and corridor management). The Committee proposed a revision to the previous delineation of recovery units, or distinct population segments (DPSs) based on new scientific information. The recommended delineations reflect the prevailing concepts of subpopulation “discreteness,” and “significance,” and incorporate morphological, behavioral, genetic, and environmental information. The Committee’s recommendation reduces the number of DPSs from six to five by leaving the original Upper Virgin River and Western Mojave units intact and recombining the four central units into three reconfigured units: Lower Virgin River Desert, Northeastern Mojave Desert (including Amargosa Valley, Ivanpah Valley, and Shadow Valley), and Eastern Mojave and Colorado Desert. These recommended DPSs are based largely on the best resolving biochemical/genetic data of Rainboth *et al.* (1989), Lamb *et al.* (1989), Lamb and Lydehard (1994), and Britten *et al.* (1997). Because these delineations are general and not definitive at this time, more data and analyses are required which may result in additional modification. The action area for this consultation occurs in the Lower Virgin River Desert and Northeastern Mojave DPSs.

The 1994 Recovery Plan conceived desert tortoises to be distributed in large populations that required large areas and large densities to recover. However, existing data are consistent with the possibility that tortoises have evolved to exist in *metapopulations*. Metapopulation theory conceives that tortoises are distributed in metapopulation patches connected with corridors that allow inefficient and asynchronous movements of individuals among the patches. This paradigm conceives that some habitat patches within the range of the desert tortoise will have low population numbers or no tortoises at all, and others will have higher population numbers. Movement among the patches is necessary for persistence of the “system.” If desert tortoises evolved to exist in metapopulations, then long-term persistence requires addressing habitat fragmentation caused by highways and satellite urbanization. Ensuring the integrity and function of natural corridors among habitat patches might require active management of tortoise densities in habitat patches and associated corridors.

Land managers and field scientists identified 116 species of alien plants in the Mojave and Colorado Deserts (Brooks and Esque 2002). The proliferation of non-native plant species has also contributed to an increase in fire frequency in tortoise habitat by providing sufficient fuel to carry fires, especially in the intershrub spaces that are mostly devoid of native vegetation (Service 1994; Brooks 1998; Brown and Minnich 1986). Changes in plant communities caused by alien plants and recurrent fire may negatively affect the desert tortoise by altering habitat structure and species composition of their food plants (Brooks and Esque 2002).

Disease was identified in the 1994 Recovery Plan as an important threat to the desert tortoise. Disease is a natural phenomenon in wild populations of animals and can contribute to population declines by increasing mortality and reducing reproduction. However, URTD appears to be a complex, multi-factorial disease interacting with other stressors to affect desert tortoises (Brown *et al.* 2002; Tracy *et al.* 2004). The disease occurs mostly in relatively dense desert tortoise populations, as mycoplasmal infections are dependent upon higher densities of the host (Tracy *et al.* 2004).

Reproduction: Desert tortoises possess a combination of life history and reproductive characteristics that affect the ability of populations to survive external threats. Tortoises grow slowly, require 15 to 20 years to reach sexual maturity, and have low reproductive rates during a long period of reproductive potential (Turner *et al.* 1984; Bury 1987; Tracy *et al.* 2004). At Yucca Mountain, Nye County Nevada (Northeastern Mojave Recovery Unit), Mueller *et al.* (1998) estimated that the mean age of first reproduction was 19 to 20 years; clutch size (1 to 10 eggs) and annual fecundity (0 to 16 eggs) were related to female size but annual clutch frequency (0 to 2) was not. Further, Mueller suggested that body condition during July to October may determine the number of eggs a tortoise can produce the following spring.

McLuckie and Friedell (2002) determined that the Beaver Dam Slope desert tortoise population, within the Northeastern Mojave Recovery Unit, had a lower clutch frequency (1.33 ± 0.14) per reproductive female and fewer reproductive females (14 out of 21) when compared with other Mojave desert tortoise populations. In the 1990's, Beaver Dam Slope experienced dramatic population declines due primarily to disease and habitat degradation and alteration (Service 1994). The number of eggs that a female desert tortoise can produce in a season is dependent on a variety of factors including environment, habitat, availability of forage and drinking water, and physiological condition (Henen 1997; McLuckie and Fridell 2002).

Numbers: Data collected on 1-square-mile permanent study plots indicate that tortoise populations have declined both in numbers of tortoises found during surveys and in densities of live tortoises at most sites since the plots were first established 20-30 years ago (Berry *et al.* 2002). Declines of 50 to 96 percent have occurred regardless of initial tortoise densities.

Increases in the occurrence of shell-skeletal remains have been found to correspond with declines in numbers and densities of live tortoises with the exception of certain plots where poaching has been documented (Berry 2003).

Results of desert tortoise surveys at three survey plots in Arizona indicate that all three sites have experienced significant die-offs. Six live tortoises were located in a 2001 survey of the Beaver Dam Slope Exclosure Plot (Walker and Woodman 2002). Three had definitive signs of URTD, and two of those also had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 31 live tortoises in 1996, 20 live tortoises in 1989, and 19 live tortoises in 1980. The 2001 survey report indicated that it is likely that there is no longer a reproductively viable population of tortoises on this study plot. Thirty-seven live tortoises were located in a 2002 survey of the Littlefield Plot (Young *et al.* 2002). None had definitive signs of URTD. Twenty-three tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 80 live tortoises in 1998 and 46 live tortoises in 1993. The survey report indicated that the site might be in the middle of a die-off due to the high number of carcasses found since the site was last surveyed in 1998. Nine live tortoises were located during the mark phase of a 2003 survey of the Virgin Slope Plot (Goodlett and Woodman 2003). The surveyors determined that the confidence intervals of the population estimate would be excessively wide and not lead to an accurate population estimate, so the recapture phase was not conducted. One tortoise had definitive signs of URTD. Seven tortoises had lesions indicative of cutaneous dyskeratosis. Previous surveys of this plot detected 41 live tortoises in 1997 and 15 live tortoises in 1992. The survey report indicated that the site may be at the end of a die-off that began around 1996-1997.

The Western Mojave has experienced marked population declines as indicated in the Recovery Plan and continues today. Spatial analyses of the West Mojave show areas with increased probabilities of encountering dead rather than live animals, areas where kernel estimates for carcasses exist in the absence of live animals, and extensive regions where there are clusters of carcasses where there are no clusters of live animals. Collectively, these analyses point generally toward the same areas within the West Mojave, namely the northern portion of the Fremont-Kramer DWMA and the northwestern part of the Superior-Cronese DWMA. Together, these independent analyses, based on different combinations of data, all suggest the same conclusion for the Western Mojave. Data are not currently available with sufficient detail for most of the range of the desert tortoise with the exception of the Western Mojave (Tracy *et al.* 2004).

Declines in tortoise abundance appear to correspond with increased incidence of disease in tortoise populations. The Goffs permanent study plot in Ivanpah Valley, California, suffered 92 to 96 percent decreases in tortoise density between 1994 and 2000 (Berry 2003). The high prevalence of disease in Goffs tortoises likely contributed to this decline (Christopher *et al.* 2003). Upper respiratory tract disease has not yet been detected at permanent study plots in the Sonoran Desert of California, but is prevalent at study plots across the rest of the species' range (Berry 2003) and has been shown to be a contributing factor in population declines in the

western Mojave Desert (Brown *et al.* 1999; Christopher *et al.* 2003). High mortality rates at permanent study plots in the northeastern and eastern Mojave and Sonoran Deserts appear to be associated with incidence of shell diseases in tortoises (Jacobson *et al.* 1994). Low levels of shell diseases were detected in many populations when the plots were first established, but were found to increase during the 1980s and 1990s (Jacobson *et al.* 1994; Christopher *et al.* 2003). A herpesvirus has recently been discovered in desert tortoises, but little is known about its effects on tortoise populations at this time (Berry *et al.* 2002; Origgi *et al.* 2002).

The kernel analysis of the Eastern Colorado Recovery Unit shows that the distributions of the living tortoises and carcasses overlap for most of the region. The Chuckwalla Bench study plot occurs outside the study area, which creates a problem in evaluating what may be occurring in that area of the recovery unit. However, the few transects walked in that portion of the DWMA yielded no observations of live or dead tortoises. This illustrates our concern for drawing conclusions from areas represented by too few study plots and leaves us with guarded concern for this region. The percentage of transects with live animals was relatively high for most DWMA's within the Eastern Colorado Recovery Unit. In addition, the ratio of carcasses to live animals was low within this recovery unit relative to others.

The status and trends of desert tortoise populations are difficult to determine based only upon assessment of tortoise density due largely to their overall low abundance, subterranean sheltering behavior, and cryptic nature of the species. Thus, monitoring and recovery should include a comprehensive assessment of the status and trends of threats and habitats as well as population distribution and abundance.

For more information on desert tortoise or expanded discussions on recovery units and recommended DPSs, please refer to the Desert Tortoise Recovery Plan (Service 1994) and report prepared by the Desert Tortoise Recovery Plan Assessment Committee (Tracy *et al.* 2004).
Las Vegas buckwheat:

The Las Vegas buckwheat is not currently protected under federal or state law; however, the taxon has been proposed for listing as critically endangered by the State of Nevada under NRS 527.260-.300. Under the NRS, projects on public or private land that result in disturbance of occupied habitat or the loss of individual plants require a permit from Nevada Division of Forestry. The buckwheat is also a BLM special status species and a high priority evaluation species under the *Clark County Multiple Species Habitat Conservation Plan and Environmental Impact Statement* (MSHCP) (Regional Environmental Consultants 2000). The Service has not initiated a listing proposal nor has the taxon been elevated to candidate status; however, because of the potential effects from the proposed and subsequent actions, the Service is closely tracking the status of the species.

The Las Vegas buckwheat is a perennial shrub up to 4 feet high with a mounding habit that does not die back to ground each year. The leaves are densely hairy on one or both surfaces, at least

twice as long as wide, and spread along the stem. The branches are woolly haired and swollen at branch intersections. The inflorescences are 1 to 4 inches long with the flowers arranged in umbrella like clusters at end of branches, which are shorter than vegetative branches. The inflorescence branches are divaricate, rigid, and sometimes spinescent. The numerous flowers are small and yellow with small bract like leaves at the base of each flower. This plant is very conspicuous when flowering in late September and early October, and it is malodorous, smelling like rotting flesh (Reveal 1976, 1985). The open, mounding habit and the silvery hairs on the upper leaf surface along with the plant's preference for gypsophilous soils in the Mojave Desert, all combine to distinguish var. *nilesii* from other varieties within the complex (Reveal 2004 *in press*) (see Taxonomy discussion below).

The Las Vegas buckwheat occurs in desert scrub habitat in small concentrations, usually along washes, rocky slopes and outcrops, or on flats. The plants are usually associated with clayish, gypsum soils at elevations between 1,000 to 3,500 feet. Associated plant species include, but are not limited to, creosote bush (*Larrea tridentata*), Mormon tea (*Ephedra torreyana*), cat claw acacia (*Acacia greggii*), bursage (*Ambrosia dumosa*), galetta grass (*Pleuraphis rigida*), and snakeweed (*Gutierrezia sarothrae*). Las Vegas buckwheat often shares its unique habitat with the Las Vegas bearpoppy (*Arctomecon californica*), another sensitive species.

Distribution: Members of the *corymbosum* complex are common in sandy substrates on the Colorado Plateau from southwestern Wyoming through western Colorado, eastern Utah, northern New Mexico, and Arizona. The small, disjunct Las Vegas Valley population (var. *nilesii*) occurs in Clark County, Nevada (Reveal 2004 *in press*). This variety is currently known to be limited to Nevada; however, specimens resembling var. *nilesii* have been observed in Mohave County, Arizona, and Kane and Coconino County, Utah, but are currently assigned to var. *glutinosum*. Identification of these populations has not been verified (James Reveal, University of Maryland, pers. comm. 2004).

The Nevada populations are quite disjunct from the other potential populations in Utah and Arizona. In Clark County, this taxon is known from only three different areas (Figure 3): Gold Butte near the Arizona border on lands managed by BLM as an ACEC; the Muddy Mountains in the White Basin on BLM-managed lands and private lands; and the Las Vegas Valley on lands managed by BLM, Nellis Air Force Base, and State and private entities. The species is closely associated with gypsum type soils, old playa remnants, and ephemeral washes in the Las Vegas Valley (Service 2002). The Las Vegas Valley comprises more than one-third of the total acreage known to support the species and about half of the total number of plants that have been documented throughout the species' range (Service 2002; BLM 2004c).

Cursory surveys of the populations on lands outside of the disposal boundary documented over 6,000 plants in the White Basin and Gold Butte areas east of the Las Vegas Valley. Approximately 4,300 of the plants are located on lands managed by BLM and the U.S. Borax

Company in T.18S, R.66E, sections 25 and 36. BLM has nominated the U.S. Borax Company lands for acquisition through the SNPLMA process. While BLM has approved the nomination, the status of the subsequent procedural actions is unknown (Gayle Marrs-Smith, BLM, Las Vegas, pers. comm. 2004). The remaining 2000 plants are located in two smaller areas on BLM managed lands in T.19S, R.66E, section 25 and T.19S, R.66E, sections 21 and 30. These three sites have not been revisited since the fall of 2002, at which time it was noted that the plants exhibited very low vigor (Christina Lund, BLM, Las Vegas, pers. comm. 2004).

The Gold Butte ACEC population in T.19S, R.70E, section 11, supports a population of approximately 100 plants. This population has not been visited since fall of 2003 (Terry Griswold, Utah State University, pers. comm. 2004).

The unconfirmed Arizona sites are near the Pierce Wash in Mohave County and along the Colorado River near Flagstaff in Coconino County. In Utah, the taxon is suspected near the Colorado River in Kane County (Reveal 2004 *in press*). As stated above, further field studies are necessary to resolve the identification of this species in these areas.

Taxonomy: The genus *Eriogonum* is a prominent component of the flora of Nevada whose members are very difficult to classify taxonomically (Welsh 1984). The Las Vegas buckwheat (var. *nilesii*) is part of the var. *corymbosum* complex, which is fairly widespread in the southwest and concentrated on the Colorado Plateau (Reveal 1967, 2002). This complex and the var. *microthecum* complex make up Section *Corymbosa* (Reveal 1967). The *corymbosum* complex differs from the *microthecum* complex in that the former has leaves that are wider, longer, and the group consists of generally larger shrubs or subshrubs. This plant is probably most closely related to *Eriogonum corymbosum* var. *glutinosum* and *Eriogonum thompsonae* (Reveal 2004 *in press*).

The history of the taxonomy of Las Vegas buckwheat has been an intricate history of name changes and revisions (Reveal 1967, 1971, 1976, 1980, 1983, 1985, 1985, 2002, and 2004 *in press*). This holds true for the population in the Las Vegas Valley. Material from Clark County, Nevada, has been determined to be unique based on results of morphometric studies (Reveal 2004 *in press*) and genetic analysis is expected to add clarity to the classification of the *corymbosum* complex (Ellis and Wolf 2004).

III. Environmental Baseline

a. Status of the Species in the Action Area

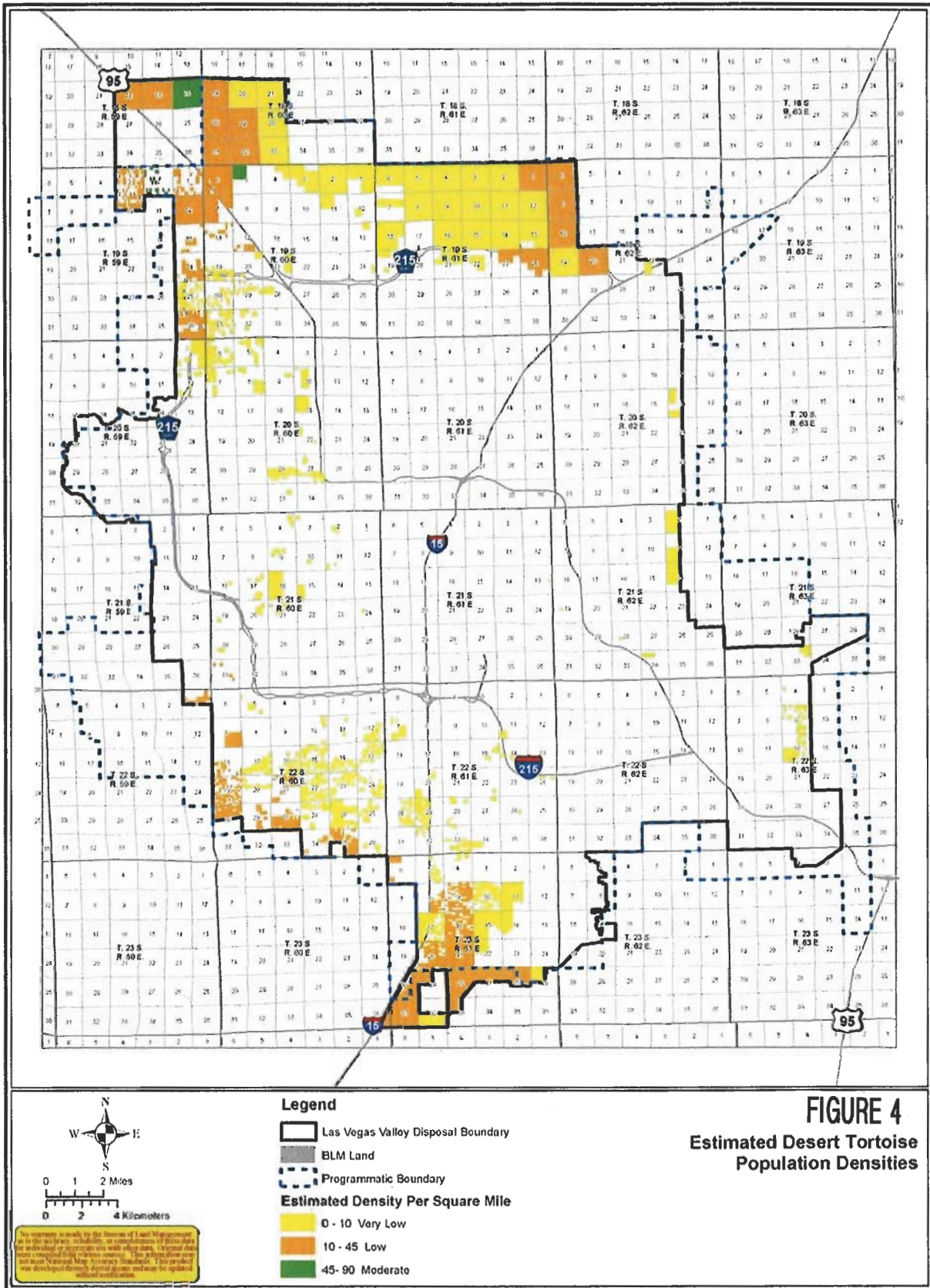
Desert tortoise:

There are 41,484 acres of tortoise habitat within the disposal boundary area that were identified during desert tortoise surveys conducted from September 2003 through April 2004 (BLM 2004a). The field surveys were conducted using the presence-or-absence survey protocol for 100-percent coverage described in the *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (Service 1992). Tortoise sign recorded and mapped included live tortoises, tortoise carcasses, burrows, scat, tracks, and courtship rings. Relative densities were quantified based upon corrected sign per acre according to estimates developed by the Las Vegas BLM for Nevada (Berry and Nicholson 1984). Estimated tortoise densities and number of tortoise that may occur on affected lands in the disposal boundary area are listed in Table 1 and shown on Figure 4.

Acres/sq. miles	Tortoises per Square Mile	Density	Habitat Coverage	Estimate- No. of tortoises
22,950/35.9	0 – 10	Very Low	55%	0 - 359
17,610/27.5	10 – 45	Low	42%	275 – 1,238
924/1.4	45 – 90	Moderate	3%	63 - 126
0	90 – 140	High	0%	0
0	140+	Very High	0%	0
41,484			100%	338 – 1,723

Tortoises appear to be more abundant in the northern and southern parts of the disposal boundary area where the larger parcels of undisturbed land are located and the habitat is less fragmented by surface disturbances. The low and moderate tortoise densities were consistent with the occurrence of creosote bush scrub habitat with forage and water sources needed to sustain tortoise populations. There are 46,701 acres of BLM lands remaining within the disposal boundary area established by the SNPLMA and expanded by the Clark County Act, of which 41,484 acres are tortoise habitat; 4,654 acres are outside the programmatic area described in the 2001 Biological Opinion (File No. 1-5-96-F-023R.2).

The Service anticipates that most tortoises that remain within the programmatic boundary, including the expanded disposal boundary, will be taken under section 7 or 10 of the Act over the



next 10 years. This estimation is based on the rate of development since the tortoise was listed in 1990 and the result of this development on the desert tortoise and its habitat in the action area during this time.

Las Vegas buckwheat:

As previously stated, the Las Vegas Valley comprises more than one-third of the total acreage known to presently support the species and about half of the total number of plants that have been documented throughout the species' range (Service 2002; BLM 2004c). Except for the Las Vegas buckwheat plants located within the disposal boundary in the proposed CTA and on Nellis Air Force Base, the remaining plants within the disposal boundary are currently known on BLM lands and non-Federal lands that are generally discontinuous, highly fragmented, and interspersed among developed parcels. Because the rarity of the Las Vegas buckwheat did not become known until recently when the taxonomy was resolved (Reveal 2004 *in press*), the historic distribution of the species in the Las Vegas Valley was not well documented or quantified. The amount of occupied and suitable habitat that has been lost to urban expansion and other activities in the Las Vegas Valley cannot be confirmed. Many discreet locations of the species have been observed throughout the Las Vegas Valley over time; however, formal surveys were rarely conducted as the plants were often seen on private lands that were inaccessible.

As concern for this species began to increase along with the rapid urbanization of the Las Vegas Valley, informal surveys were initiated to begin assessing its status. The informal survey was conducted in 1998 on Federal and non-Federal lands, but focused on private lands where extirpation was thought to be imminent. This should not be considered a comprehensive survey of the Las Vegas Valley (Service 2002). All of the sites were located in the Las Vegas Valley, mostly within city limits, and were concentrated in two main areas: North Las Vegas between Jones and Lamb boulevards and north of the Las Vegas Airport to the foothills along the boundary of the Desert National Wildlife Range; and in the south between Jones and Mountain Vista along Tropicana, Russell Road, and Sunset, with particular attention paid to the area between Russell and Arville where the Las Vegas bearpoppy was known to occur (Service 2002).

The 1998 survey documented three Las Vegas buckwheat sites on Federal lands: two locations on BLM lands covering roughly 70 acres with 1,600 plants, and one location on Nellis Air Force Base lands with an unknown number of acres and plants. The 1998 survey also documented 18 Las Vegas buckwheat sites on non-Federal lands covering roughly 67 acres with 3,150 plants (Service 2002; Service 2004). The private lands included four sites in southwestern Las Vegas comprised of about 500 plants on 5 acres and one isolated site in southeastern Las Vegas with approximately 300 plants on 0.25 acre (Service 2002; Service 2004; Teri Knight, The Nature Conservancy, pers. obs. 1998). All other locations on private lands, totaling about 96 percent of the surveyed population, were located in the North Las Vegas area. It is presently estimated that

approximately 32 acres of the 67 acres of known Las Vegas buckwheat habitat on private land has been extirpated as a result of urban development in the Las Vegas Valley. Of the remaining 35 acres, some parcels of private land with Las Vegas buckwheat occurrences presently have imminent development plans (based on subdivided parcel maps overlaid on Clark County Assessor aerial photography from Spring 2004).

The far northern portion of the action area on BLM lands supports the largest, contiguous occupied and suitable habitat for the species. Formal field surveys were performed on BLM lands within the disposal boundary to confirm data collected on the Las Vegas buckwheat and bearpoppy in support of the EIS. The surveys documented the following distributional information (BLM 2004c). (Note: These figures do not include suitable, unoccupied habitat within these areas.):

- Approximately 2,200 plants were documented in the portion of the disposal area proposed as the CTA in the EIS. Within this area, the Las Vegas buckwheat occurs on about 360 acres, which constitutes approximately 25 percent of the known distribution of this species on BLM lands in Clark County. The proposed CTA is generally the land north of T.19S, R.61E, sections 15 and 16.
- Approximately 1,000 plants were documented on the City of North Las Vegas' nominated parcel (about 2,300 acres) within the disposal area. The plants occupy about 154 acres, which is about 10 percent of the known distribution of this species on BLM lands in Clark County. The nominated parcel is located in T.19S, R.61E, sections 14, 15, 16, and the northern portions of sections 21 and 23.
- In the southern part of the disposal area, there is a population on a 76 acre parcel located at Tropicana and Decatur in T.21S, R. 60E, section 24 (Figure 3 inset). In 2002, the site supported less than 80 individuals (less than 1 percent of the known distribution of the species). This site is the subject of an R&PP lease.
- There are numerous discontinuous BLM parcels within the disposal boundary that have all been completely surveyed for the Las Vegas buckwheat. Very few of these parcels in the northern part of the Las Vegas Valley support occupied habitat.

Collectively, occupied habitat within the disposal boundary in the Las Vegas Valley on BLM lands constitutes approximately 40 percent of the known distribution of the Las Vegas buckwheat rangewide (excluding the unconfirmed sites in Arizona and Utah). The areas outside the disposal boundary in the White Basin and Gold Butte support the remaining 60 percent of known occupied habitat on BLM lands (BLM 2004c) (see Status of the Species Rangewide).

There is an important population of Las Vegas buckwheat and Las Vegas bearpoppy located on Nellis Air Force Base, portions of which lie within the disposal boundary, but will be unaffected by BLM action. Surveys for a military housing project were conducted throughout Area III in

April of 2004 that mapped roughly 75 acres of habitat occupied by these two plant species. The occupied habitat is interspersed within areas of undisturbed, potentially suitable habitat on about 400 acres. The numbers of individuals were not quantified.

b. Factors Affecting the Species Environment within the Action Area

Desert tortoise:

The impacts of land sales, mineral leases, ROW grants, and R&PP leases on the Mojave desert tortoise in the action area have been addressed since 1991 under a number of biological opinions (see Consultation History). The 1996 Biological Opinion reinitiating consultation on the 1991 opinion (File No. 1-5-91-F-112) addressed the impacts to desert tortoise that may result from the disposal and subsequent development in an expanded boundary of approximately 125,000 acres of land administered by BLM.

Between 1996 and 2001, there were 621 actions authorizing the disturbance of 11,498 acres of habitat under the biological opinion. There were 279 actions authorized or pending authorization by BLM between October 2001 and June 2004 under the 2001 Biological Opinion (File No. 1-5-96-F-23R.2), which would result in the disturbance of 5,653 acres of desert tortoise habitat. Thus, a total of 17,151 acres of desert tortoise habitat have been, or may be disturbed or lost as a result of actions within the programmatic area.

Title II of the Clark County Act released the Quail Springs Wilderness Study Area (WSA) and the Nellis A, B, and C WSAs from further consideration as wilderness, effectively adding a total of 11,251 acres to the disposal boundary area (see BLM 2004a, Figure BA-3, Appendix B). These lands are now available for sale or transfer for development or other realty actions.

The annual population estimates for Clark County increased from 768,203 in 1990, when the desert tortoise was listed as threatened, to 1,641,500 in 2003. The population of the Las Vegas Valley (1,583,200) accounts for over 96 percent of Clark County's population (Source: July 1990-1999 Clark County ADMATCH Program / July 2000 - July 2003 Southern Nevada Consensus Population Estimate). Housing construction including disposal of public lands for development and associated infrastructure have resulted in habitat loss and take of desert tortoises throughout Clark County. Future land sales will contribute to further take of desert tortoises in the action area through habitat loss and other impacts to the species as a result of the ever-increasing human population.

Programmatic Biological Opinions Issued for Desert Tortoise in the Action Area

As described under Consultation History, three programmatic biological opinions have been issued to BLM for activities in the action area, which include the following: (1) the 1996

Biological Opinion (File No. 1-5-96-F-023R) issued for activities within the Las Vegas Valley which reinitiated 1-5-91-F-112, and was reinitiated in October 2001 and replaced by the 2001 Biological Opinion (File No. 1-5-96-F-023R.2) and is the subject of this consultation; (2) programmatic biological opinion for implementation of multiple use activities by BLM's Las Vegas Field Office (File No. 1-5-97-F-251); and (3) programmatic biological opinion for implementation of activities proposed in BLM's 1998 RMP (File No. 1-5-98-F-053).

Habitat Conservation Plans Completed Involving the Action Area

On May 23, 1991, the Service issued a biological opinion on the issuance of incidental take permit PRT-756260 (File No. 1-5-91-FW-40) under section 10(a)(1)(B) of the Act. The Service concluded that incidental take of 3,710 desert tortoises on up to 22,352 acres of habitat within the Las Vegas Valley and Boulder City in Clark County, Nevada, was not likely to jeopardize the continued existence of the desert tortoise. The permit application was accompanied by the *Short-Term Habitat Conservation Plan for the Desert Tortoise in the Las Vegas Valley, Clark County, Nevada* (Regional Environmental Consultants 1991) (Short-term HCP) and an implementation agreement that identified specific measures to minimize and mitigate the effects of the action on desert tortoises.

On July 29, 1994, the Service issued a non-jeopardy biological opinion on the issuance of an amendment to incidental take permit PRT-756260 (File No. 1-5-94-FW-237) to extend the expiration date of the existing permit by one year (to July 31, 1995) and include an additional disturbance of 8,000 acres of desert tortoise habitat within the existing permit area. The amendment did not authorize an increase in the number of desert tortoises allowed to be taken under the existing permit. Additional measures to minimize and mitigate the effects of the amendment were also identified. Approximately 1,300 desert tortoises were taken under the authority of PRT-756260, as amended. In addition, under the Short-term HCP, as amended, approximately 541,000 acres of desert tortoise habitat have been conserved in Clark County on lands managed by BLM and National Park Service.

On July 11, 1995, the Service issued an incidental take permit (PRT-801045) to Clark County, Nevada, including cities within the county and the Nevada Department of Transportation (NDOT), under the authority of section 10(a)(1)(B) of the Act. The permit became effective August 1, 1995, and allowed the incidental take of desert tortoises for a period of 30 years on 111,000 acres of non-Federal land in Clark County, and approximately 2,900 acres associated with NDOT activities in Clark, Lincoln, Esmeralda, Mineral, and Nye counties, Nevada. The Clark County Desert Conservation Plan (DCP) served as the permittees' habitat conservation plan and detailed their proposed measures to minimize, monitor, and mitigate the effects of the proposed take on the desert tortoise (Regional Environmental Consultants 1995). The DCP superceded the Short-term HCP.

The permittees imposed, and NDOT paid, a fee of \$550 per acre of habitat disturbance to fund the conservation measures. The permittees expended approximately \$1.65 million per year to minimize and mitigate the potential loss of desert tortoise habitat. The majority of these funds were used to implement minimization and mitigation measures, such as increased law enforcement; construction of highway barriers; road designation, signing, closure, and rehabilitation; and tortoise inventory and monitoring within the lands initially conserved under the Short-term HCP and other areas being managed for tortoise recovery (e.g., ACECs or DWMAs). The benefit to the species, as provided by the DCP, substantially minimized and mitigated those effects that resulted from development within the permit area and aided in recovery of the desert tortoise. A desert tortoise translocation site was established west of Interstate 15 near Jean, Nevada, in 1997 under the DCP. To date, over 4,500 desert tortoises have been released at the site.

As partial mitigation under the Short-term HCP and DCP, a conservation easement was purchased from the City of Boulder City in 1994. The term of the Boulder City Conservation Easement (BCCE) is for a minimum of 50 years and will be retained in a natural condition with the purpose for recovery of the desert tortoise and conservation of other species in the area. Certain uses shall be prohibited within the BCCE including motor vehicle activity off designated roads, livestock grazing, and activity that is inconsistent with the purposes of the BCCE. Much of the BCCE is also designated desert tortoise critical habitat.

On November 22, 2000, the Service issued an incidental take permit (TE-034927-0) to Clark County, Nevada, including cities within the county and NDOT, under the authority of section 10(a)(1)(B) of the Act. The permit supercedes the incidental take permit for the DCP. In the biological/conference opinion (File No. 1-5-00-FW-575), the Service determined that issuance of the incidental take permit to Clark County would not jeopardize the listed desert tortoise or southwestern willow flycatcher, or any of the 76 unlisted, un-proposed species covered under the permit. Under the special terms and conditions of the permit, take of avian species, with the exception of American peregrine falcon (*Falco peregrinus anatum*) and phainopepla (*Phainopepla nitens*), would not be authorized until acquisition of private lands in desert riparian habitats in southern Nevada has occurred. The permit allows incidental take of covered species for a period of 30 years on 145,000 acres of non-Federal land in Clark County, and within NDOT ROWs south of the 38th parallel in Nevada. The Clark County MSHCP, serves as the permittees' habitat conservation plan and details their proposed measures to minimize, mitigate, and monitor the effects of covered activities on the 78 species, and supercedes the DCP (Regional Environmental Consultants 2000). In addition to measures specified in the MSHCP and its implementing agreement, the permittee shall comply with the special terms and conditions of the permit and measures stated in Sections 3C and 3D of the DCP, which were incorporated by reference into the MSHCP and incidental take permit. The Clark County Desert Conservation Program oversees and administers the MSHCP.

Las Vegas buckwheat:

As stated under Status of the Species, the Las Vegas buckwheat is not currently protected under Federal or State law; however, the taxon has been proposed for listing as critically endangered by the State of Nevada under NRS 527.260-.300. The buckwheat is also a BLM special status species and a high priority evaluation species under the Clark County MSHCP. The Service has not initiated a listing proposal nor has the taxon been elevated to candidate status; however, because of the potential effects from the proposed and subsequent actions, the Service is closely tracking the status of the species. There are currently no agreements in place to guide management and conservation of this species within the disposal boundary or anywhere in the species' range.

IV. Effects of the Proposed Action on the Listed Species and the Las Vegas Buckwheat

Direct effects encompass the immediate, often obvious effect of the proposed action on species and their habitats. Indirect effects are caused by or result from the proposed action, are later in time, and are reasonably certain to occur. In contrast to direct effects, indirect effects may not be immediately apparent and may affect listed species populations and habitat quality over an extended period of time, long after an action has been implemented. Indirect effects are of particular concern for long-lived species such as the tortoise and the Las Vegas buckwheat because project-related effects may not become evident in individuals or populations until years later.

Desert tortoise:

Direct effects that may result from implementation of BLM programs in the action area include increased mortality or injury to tortoises from vehicles, equipment, or falls into excavated areas or utility trenches upon entering a construction site; burrows crushed by construction equipment; and forage, cover, and water sources removed or destroyed; habitat loss degradation and fragmentation. A total of 338 to 1,723 desert tortoises may be incidentally taken if all 41,484 acres of desert tortoise habitat within the disposal boundary area are disturbed (see BLM 2004a, Appendix C, Table C-3). Based on the estimate that approximately 20,000 of the 41,484 acres of desert tortoise habitat would be developed by 2018, incidental take of desert tortoise would be approximately half that amount. (Note: The 1996 and 2001 biological opinions exempted take of 8,543 tortoises and disturbance of 125,000 acres of BLM lands which consisted of 121,000 acres of potential tortoise habitat and 4,000 acres within the exclusionary zone that are no longer considered suitable for desert tortoises.)

There are approximately 810 acres of BLM land remaining within the exclusionary zone identified in the 1996 and 2001 biological opinions, of which 580 acres fall under existing R&PP leases and ROW grants. Assuming that tortoises no longer occur on the 580 acres and the

remaining 230 acres are very low density tortoise habitat, subsequent development within the exclusionary zone would potentially result in the incidental take of 0 to 4 individual tortoises. However, based on the field surveys, tortoise sign was only located on 35 acres within the exclusionary zone and thus it is unlikely that any incidental take would occur (BLM 2004a).

There are 4,654 acres of BLM lands available for disposal located outside the programmatic area defined in the 2001 Biological Opinion. This includes 345 acres of very low density habitat, 3,634 acres of low density habitat, and 675 acres of moderate density habitat. These BLM lands outside the programmatic area yet within the disposal boundary are not within any desert tortoise ACECs or designated critical habitat. An estimated 107 to 361 individual tortoises would be impacted outside the programmatic area. This represents incidental take beyond that exempted under the 2001 Biological Opinion.

Although land disposal by BLM will not result in direct take of desert tortoises, take will occur as a result of the subsequent development. Based on desert tortoise abundance estimates stated previously, we anticipate that 340 to 1,799 desert tortoises may occur on these acres. For land sales, the landowner(s) may choose to survey for and remove desert tortoises from the properties following transfer out of Federal management. If not located and removed, tortoises that occur on the properties may be killed by surface-disturbing activities. Additional harassment of tortoises that occupy adjacent properties may occur as a result of increased levels of noise and ground vibrations produced by blasting, vehicles, and heavy equipment (Bondello 1976; Bondello *et al.* 1979). Ground vibrations may cause desert tortoises to emerge from their burrows; slapping the ground several times within a few feet of a desert tortoise burrow entrance will often cause a desert tortoise to emerge (Medica *et al.* 1986). Desert tortoises from adjacent parcels may move into harm's way if no barrier exists to exclude them project areas.

As development proceeds, public use and impacts in adjacent areas are anticipated to increase. These uses include increases in recreation, vandalism, dogs, illegal trash dumping, and illegal collection of desert tortoise. The measure proposed by BLM requiring the landowner/developer to comply with the MSHCP prior to surface-disturbance should minimize the effects of the land sale including take of tortoises and loss of their habitat. Mitigation and minimization measures in the MSHCP include: (1) Payment of \$550 for each acre of disturbance, to be used to fund recovery activities; (2) habitat restoration; (3) law enforcement; (4) research; and (5) public environmental education.

Trash accumulation within action areas may attract and concentrate predators such as ravens, coyotes (*Canis latrans*), and kit fox, which may result in increased predation of desert tortoises. Natural predation in undisturbed, healthy ecosystems is generally not an issue of concern; however, predation rates may be altered when natural habitats are disturbed or modified. Common raven populations in the California deserts have increased tenfold from 1968 to 1992 in response to expanding human use of the desert (Boarman and Berry 1995). Because ravens

make frequent use of food, water, and nest site subsidies provided by humans, their population increases can be tied to this increase in food and water sources, such as landfills and septic ponds (Service 1994; Boarman 2002). Ravens may be attracted to landfills or project sites if trash is accessible by scavengers (Boarman 2002). Considering that ravens were very scarce in this area prior to 1940, it is assumed that the current level of raven predation on juvenile desert tortoises is an unnatural occurrence (BLM 1990).

While developments may be relatively isolated from each other, urbanization involves cumulative effects of multiple and often contiguous developments including construction of permanent residences that cover large areas such as the Las Vegas Valley. Urbanization has multiple impacts associated with the presence of many people in the area many of which are not well documented. Urbanization results in considerable fragmentation and loss of habitat, and habitat alteration to the point of being largely useless to tortoise populations (Boarman 2002; Berry and Nicholson 1984). Some recreational activities may emanate directly from urban areas. Wild dogs may be more prevalent (Bjurlin and Bissonette 2001) and collecting, handling and vandalism of tortoises could increase where there are more people. Captive tortoises, potentially infected with URTD are more likely to escape or purposefully released, thus facilitating the spread of disease to the native population (Jacobson 1993). Illegal dumping is prevalent (Boarman 2002), raven populations are larger (Knight *et al.* 1993), and exotic plants predominate (Humphrey 1987; Brooks 1998) around urban developments.

There is some evidence that tortoise populations can persist in the presence of light industrial developments. In the 1980s, 460 wind turbines and 51 electrical transformers were erected in tortoise habitat at Mesa, California. Approximately 10 to 20 years later, there were still tortoises living and reproducing in the same area; some burrow beneath and rest upon concrete support pads for the turbines (Lovich and Daniels 2000). Reproductive output is higher than at any other site studied to date (Lovich *et al.* 1999). However, there are no data available to determine if the population has increased, decreased, or remained stable since construction. Tortoises may persist in this area because of the relatively low level of actual human activity in the wind park and the high productivity in the area, which is in the ecotone between creosote scrub and coastal sage scrub habitat.

Las Vegas buckwheat:

Until BLM disposes of the land within the boundary, they will continue to issue ROW grants and R&PP leases that may directly impact the Las Vegas buckwheat. The disposal and transfer of title of BLM-administered lands would not directly impact the species; however, subsequent development of these lands after disposal is likely to result in indirect impacts to the species and its habitat. Under BLM action, 46,701 acres would be available for transfer or sale within the disposal boundary at an average annual rate of 4,000 acres per year with about half of these lands being developed by 2018. The Las Vegas buckwheat, bearpoppy, two-toned penstemon

(*Penstemon bicolor*), and acacia/mesquite bosque habitat are among several sensitive biological resources that would be impacted after BLM lands are transferred or sold (BLM 2004).

Approximately 600 acres that support Las Vegas buckwheat and its habitat (along with 60 acres of bearpoppy habitat and three known occurrences of two-toned penstemon) would be directly impacted by subsequent development and associated activities, as well as implementation of the terms of ROW grants and R&PP leases under the proposed action. Surface disturbing activities during installation of utilities and construction of infrastructure and parks for public purposes would cause direct mortality and/or displacement of individual plants and direct loss and significant fragmentation of habitat.

The extent of indirect impacts to this species over the planning period would be dependent on the rate of habitat loss, which is based on the location of development and ancillary facilities. Because of the importance of the Las Vegas Valley populations of the Las Vegas buckwheat with respect to the overall distribution of this species, the considerable losses of individuals and habitat that would occur subsequent to the transfer and sale of BLM lands are expected to be alleviated through the avoidance and minimization measures outlined in the Description of the Proposed Action.

Level of Effect

Desert tortoise: The Service has determined that the level of effect described herein will not reduce appreciably the likelihood of survival and recovery of the Mojave population of the desert tortoise in the wild or diminish the value of critical habitat both for survival and recovery of the desert tortoise because:

- Potential impacts to the desert tortoise as a result of land sold or transferred from Federal management to private ownership would be minimized and mitigated through the provisions of the MSHCP.
- Measures proposed by BLM would minimize the potential effects of programmatic activities on the desert tortoise and its habitat; additional measures will be required by BLM and/or Service as appropriate.
- The action area includes and surrounds the urbanized Las Vegas metropolitan area and urban interface with desert tortoise habitat which has largely been previously impacted by human activities.
- No designated critical desert tortoise habitat would be disturbed by programmatic activities.

Las Vegas buckwheat: The Las Vegas buckwheat is very limited in distribution within the action area and throughout its range. Contingent upon the implementation of the avoidance and

minimization measures outlined under the proposed action and the conservation transfer alternative (BLM 2004c) and reiterated below in Conservation Recommendations, the Service has determined that the level of effect described herein will not reduce appreciably the likelihood of the long-term survival of the Las Vegas buckwheat. While implementation of these various conservation measures described herein are designed to protect the species and its habitat, activities associated with ongoing and future land disposals and subsequent development are expected to have continuing adverse effects on the Las Vegas buckwheat.

V. Cumulative Effects

Cumulative effects are those effects of future non-Federal (State, local government, or private) activities that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

Based on historic development and disposal rates, BLM estimates that approximately 20,000 acres of the disposal lands would be developed by 2018, which is the end of the planning period. Future actions on private lands, including lands sold in disposal areas, are addressed through the MSHCP and incidental take permit (TE-034927-0) for desert tortoise. As the human population continues to grow in Las Vegas and surrounding areas, recreation and human use of the desert will continue to increase on private and public lands.

Cumulative impacts of non-Federal activities in the Las Vegas disposal boundary are likely to result in loss of Las Vegas buckwheat on private land. Activities may include residential, commercial and industrial development, associated infrastructure and other surface-disturbing projects. These types of activities would require a permit from the Nevada Division of Forestry should the species become listed as critically endangered.

VI. Conclusion

After reviewing the current status of the desert tortoise, the environmental baseline for the action area, the effects of the proposed programmatic activities and the cumulative effects, it is the Service's biological opinion that the project, as proposed, is not likely to jeopardize the continued existence of the desert tortoise. In the Northeastern Mojave Recovery Unit, critical habitat for the desert tortoise has been designated in portions of the Piute and Eldorado valleys; Mormon Mesa; Coyote Springs; Gold Butte-Pakoon; and Beaver Dam Slope areas. However, activities covered under this programmatic biological opinion will not result in destruction or adverse modification of critical habitat.

To support the following conclusions for the Las Vegas buckwheat, the Service has considered the avoidance and minimization measures contained herein and the intent of BLM to ensure

implementation of these measures in a timely manner. Based on the successful and timely implementation of these measures and after reviewing the current status of the Las Vegas buckwheat, the environmental baseline for the action area, the effects of the proposed programmatic activities and the cumulative effects, it is the Service's conference opinion that the action is not likely to lead to a trend toward listing, or jeopardize the continued existence of this species.

B. INCIDENTAL TAKE STATEMENT

Section 9 of the Act, as amended, prohibits take (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) of listed species of fish or wildlife without a special exemption. "Harm" is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering (50 CFR § 17.3). "Harass" is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering (50 CFR § 17.3). Incidental take is any take of listed animal species that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant. Under the terms of sections 7(b)(4) and 7(o)(2) of the Act, taking that is incidental to and not intended as part of the agency action is not considered a prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The following terms and conditions: (1) Restate measures proposed by BLM; (2) modify the measures proposed by BLM; or (3) specify additional measures considered necessary by the Service. Where these terms and conditions vary from or contradict the minimization measures proposed under the Description of the Proposed Action, specifications in these terms and conditions shall apply. The measures described below are nondiscretionary and must be implemented by BLM so that they become binding conditions of any project, contract, grant, or permit issued by BLM as appropriate, in order for the exemption in section 7(o)(2) to apply. The Service's evaluation of the effects of the proposed actions includes consideration of the measures developed by BLM, and repeated in the Description of the Proposed Action portion of this biological opinion, to minimize the adverse effects of the proposed action on the desert tortoise. Any subsequent changes in the minimization measures proposed by BLM may constitute a modification of the proposed action and may warrant reinitiation of formal consultation, as specified at 50 CFR § 402.16. These reasonable and prudent measures are intended to clarify or supplement the protective measures that were proposed by BLM as part of the proposed action.

BLM has a continuing duty to regulate the activity that is covered by this incidental take statement. If BLM fails to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or fails to retain

oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

I. Amount of Take

Based on the effects analysis described previously, the Service anticipates that all Mojave desert tortoises that occur within the action area may ultimately be taken through direct mortality, injury, or capture as a result of the proposed action in the action area which includes those tortoises subsequently taken under the Section 10 permit issued in support of the MSHCP. We estimate that 338 to 1,723 desert tortoises occur within the 41,484 acres of desert tortoise habitat covered under this biological opinion. Further, we anticipate that the disturbance of all disposal lands (up to 41,484 acres), unless exempted, will apply towards the 145,000-acre incidental take area for the MSHCP.

II. Effect of the Take

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the desert tortoise, or destruction or modification of critical habitat.

III. Reasonable and Prudent Measures

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of desert tortoise:

1. Measures shall be taken to minimize take of desert tortoises due to activities associated with construction or development activities.
2. Measures shall be taken to minimize destruction of desert tortoise habitat, such as soil compaction, erosion, or crushed vegetation.
3. Measures shall be taken to minimize injury or mortality of desert tortoises during handling and/or removal from BLM lands within the action area.
4. Measures shall be taken to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion.

IV. Terms and Conditions

1. To implement Reasonable and Prudent Measure Number 1, BLM shall fully implement the following measures to minimize take of desert tortoises due to activities associated with construction or development activities:
 - a. Applicants or project proponents will search for, and remove tortoises from project areas within the programmatic area if (a) survey data indicate that tortoises are present based on observation of live tortoises, recent sign, or active burrows, (2) tortoises may be relocated to secure habitat within 2 miles from the point of capture and barriers will exist to prevent tortoises from re-entering project areas and appear in harm's way, and (3) the tortoises appear to be healthy, unless the Service determines that survey and removal will not contribute toward recovery.

Applicants or project proponents shall contract an authorized desert tortoise biologist to conduct the clearance and removal. Only individuals trained to handle desert tortoises in accordance with Service-approved guidelines shall be authorized to handle desert tortoises, unless they are in imminent danger. Currently, the Service-approved handling guidelines are described in *Guidelines for Handling Desert Tortoises during Construction Projects* (Desert Tortoise Council 1994, revised 1999). Tortoises shall not be placed on private lands or lands under management by an agency other than BLM, without written permission of the landowner or agency. If unforeseen circumstances occur that would question the survival of tortoises potentially relocated from project areas, BLM shall coordinate with the Service on the disposition of such tortoises.
 - b. If a tortoise is in imminent danger with immediate death or injury likely (such as from an approaching vehicle or equipment), and the tortoise has been given the opportunity to move but has withdrawn in its shell and is not moving, onsite personnel may capture the tortoise and place it in a clean unused cardboard box or similar container. If tortoises are found that cannot be relocated as described in Term and Condition 1.a., Clark County's tortoise pick-up service will be notified immediately. The contained tortoise will be held in the shade or a temperature-controlled environment until removed by the pick-up service.
2. To implement Reasonable and Prudent Measure Number 2, BLM shall fully implement the following measures minimize destruction of desert tortoise habitat, such as soil compaction, erosion, or crushed vegetation:

- a. BLM shall ensure that a fee is paid at the current rate of \$660 per acre of disturbance, as indexed for inflation, prior to surface disturbance with the following exceptions:
- (1) R&PP leases would be issued prior to payment of remuneration fees. Payment of fees on R&PP leases shall be deferred until immediately prior to surface disturbance. If the R&PP project consists of phased development of the lease area, fees shall be paid for each phase immediately prior to surface disturbance. Likewise, road ROW issued to local governments (*e.g.*, Clark County, cities of Las Vegas, North Las Vegas, Henderson, Mesquite, and Boulder City) may be issued before payment of fees. If payment of remuneration fees is postponed for any project, the applicant must submit a request for a Notice to Proceed before surface disturbance. The applicant shall provide BLM with proof of payment of the required remuneration fees, before BLM issues the Notice to Proceed. Both of these actions shall occur prior to surface disturbance. A Notice to Proceed shall be issued for each segment of right-of-way as payment is made.
 - (2) Because many mining plans of operation are phased in over a number of years, remuneration fees shall be paid for each phase immediately prior to surface disturbance.
 - (3) Projects impacting less than 0.25 acres will not be assessed a remuneration fee.
 - (4) Mineral material sales will be charged a fee of 25 cents per yard up to the equivalent of \$550 per acre of disturbance.

The fee rate will be indexed for inflation based on the Bureau of Labor Statistics Consumer Price Index for All Urban Consumers (CPI-U) on January 31st of each year. The next adjustment shall occur on January 31, 2005, and will become effective March 1, 2005. Fees assessed or collected for projects covered under this biological opinion after March 1st of each year will be adjusted based on the CPI-U. Information on the CPI-U can be found on the Internet at:
<http://stats.bls.gov/news.release/cpi.nws.htm>.

This fee will be paid directly to the Desert Tortoise Public Lands Conservation Fund Number 730-9999-2315, administered by Clark County or any other administrator approved by the Service. The administrator serves as the banker of

these funds and receives no benefit from administering these funds. These funds are independent of any other fees collected by Clark County under the MSHCP.

The payment shall be accompanied by the *Section 7 Fee Payment Form* (Attachment B), and completed by the payee. Payment shall be by certified check or money order payable to Clark County (or other administrator named by the Service), and delivered to:

Clark County Habitat Conservation
Department of Air Quality and Environmental Management
500 So. Grand Central Parkway (front counter, first floor)
Post Office Box 558270
Las Vegas, Nevada 89155
(702) 455-5821

- b. The boundaries of project areas shall be flagged or marked and all equipment, vehicles, and construction materials will remain within the project site or authorized areas. Staging areas will be located in previously disturbed areas whenever possible. Cross-country travel and travel outside authorized areas will be prohibited.
3. To implement Reasonable and Prudent Measure Number 3, BLM shall fully implement the following measure to minimize injury or mortality of desert tortoises during handling and/or removal from BLM lands within the action area:
 - a. In accordance with *Procedures for Endangered Species Act Compliance for the Mojave Desert Tortoise* (Service 1992), an authorized desert tortoise biologist should possess a bachelor's degree in biology, ecology, wildlife biology, herpetology, or closely related fields. The biologist must have demonstrated prior field experience using accepted resource agency techniques to survey for desert tortoises and tortoise sign. As a guideline, an authorized biologist should have 60 field days of experience. In addition, the biologist shall have the ability to recognize and accurately record survey results.
 - b. All burrows found during clearance surveys within areas proposed for disturbance, whether occupied or vacant, will be excavated by an authorized desert tortoise biologist and collapsed or blocked to prevent desert tortoise re-entry. All burrows will be excavated with hand tools to allow removal of desert tortoises or desert tortoise eggs. All desert tortoise handling and excavations, including nests, will be conducted by an authorized desert tortoise biologist in

accordance with Service-approved protocol (Desert Tortoise Council 1994, revised 1999).

- c. All located desert tortoises and desert tortoise eggs will be relocated offsite 300 feet to 2 miles into adjacent undisturbed habitat. Tortoises found aboveground will be placed under a bush in the shade. A tortoise located in a burrow will be placed in an existing unoccupied burrow of the same size and orientation as the one from which it was taken. If a suitable natural burrow is unavailable or the occupancy status of the burrow is in question, an authorized desert tortoise biologist will construct one of the same size and orientation as the one from which it was removed using the protocol for burrow construction in Section B-5-f (Desert Tortoise Council 1994, revised 1999).
- d. Any tortoise found within one hour before nightfall will be placed in a separate clean cardboard box and held in a cool, predator-free location. The box will be covered and kept upright at all times to minimize stress to the tortoise. Each box will be used once and then disposed of properly. The tortoise will be released the next day in the same area from which it was collected and using the procedures described above. Each tortoise will be handled with new disposable latex gloves. After use, the gloves will be properly discarded and a fresh set used for each subsequent tortoise handling.
- e. An authorized desert tortoise biologist will be onsite during the periods when tortoises are expected to be active for all three phases of the highway widening project to ensure construction activities are in compliance with this biological opinion and that desert tortoises that may wander on to the construction site via unfenced areas are not inadvertently harmed.

The biologist will be responsible for: (1) Enforcing the litter-control program; (2) ensuring that tortoise-proof fences are maintained where applicable; (3) ensuring that desert tortoise habitat disturbance is restricted to authorized areas; (4) ensuring that all equipment and materials are stored within the boundaries of the construction zone or within the boundaries of previously disturbed areas; (5) ensuring that all vehicles associated with construction activities remain within the proposed construction zones; and (6) ensuring compliance with the terms and conditions of this biological opinion. Desert tortoises will be handled according to Service-approved protocol (Desert Tortoise Council 1994, revised 1999).

- f. Desert tortoises shall be treated in a manner to ensure that they do not overheat, exhibit signs of overheating (*e.g.*, gaping, foaming at the mouth, etc.), or are

placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises shall be kept shaded at all times until it is safe to release them. No desert tortoise shall be captured, moved, transported, released, or purposefully caused to leave its burrow for whatever reason when the ambient air temperature is above 95°F (35°C). Ambient air temperature shall be measured in the shade, protected from wind, at a height of 2 inches (5 centimeters) above the ground surface. No desert tortoise shall be captured if the ambient air temperature is anticipated to exceed 95°F (35°C) before handling and relocation can be completed. If the ambient air temperature exceeds 95°F (35°C) during handling or processing, desert tortoises shall be kept shaded in an environment that does not exceed 95°F (35°C), and the animals shall not be released until ambient air temperature declines to below 95°F (35°C).

- g. Project activities that may endanger a tortoise will cease if a tortoise is found on a project site. Project activities will resume after an authorized desert tortoise biologist removes the tortoise from danger or after the tortoise has moved to a safe area on its own volition.
 - h. A desert tortoise education program may be required on an action-specific basis if BLM biologist or Service believe that project personnel will encounter desert tortoises. The program would be presented to all personnel onsite during construction activities. This program would contain information concerning the biology and distribution of the desert tortoise, desert tortoise activity patterns, its legal status and occurrence in the proposed project area, the definition of "take" and associated penalties, measures designed to minimize the effects of construction activities, the means by which employees can facilitate this process, and reporting requirements to be implemented when tortoises are encountered.
4. To implement Reasonable and Prudent Measure Number 4, BLM shall fully implement the following measures to ensure compliance with the reasonable and prudent measures, terms and conditions, reporting requirements, and reinitiation requirements contained in this biological opinion:
- a. All necessary information sheets and forms shall be completed by BLM prior to authorizing specific actions (See Attachment A). These forms will be modified as necessary with the Service's concurrence.
 - b. For those actions that would involve disturbance or disposal of more than 40 acres, BLM will submit a brief project description to the Service's Las Vegas Office, including minimization measures proposed prior to completing the approval process for the action to proceed. The Service will assign action-

specific file numbers to each action for the administrative record of this programmatic biological opinion.

Activities that would involve disturbance or disposal of 40 acres or less, may proceed without further consultation under this programmatic biological opinion. In addition, BLM shall keep an up-to-date log of all actions taken under this consultation including acreage affected; number of desert tortoises injured, killed, or removed from project areas; and fees paid for each action. BLM will continue to provide the log information to the Service's Las Vegas Office on an annual basis. Information will be cumulative throughout the term of this consultation.

The Service believes that no more than 41,484 acres of desert tortoise habitat may be destroyed as a result of actions covered under this biological opinion. All desert tortoises that occur within this acreage may be taken. The reasonable and prudent measures with their implementing terms and conditions are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, the level of incidental take identified is exceeded, or the number of acres to be disturbed is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. BLM must immediately provide an explanation of the causes of the taking, and review with the Service the need for possible modification of the reasonable and prudent measures.

C. CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species and, for the purposes of this biological opinion, sensitive species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery programs, or to develop information.

Desert tortoise:

The Service recommends that BLM land reserved for the Desert Tortoise Conservation Center and large-scale translocation study area be protected in perpetuity against disposal or development. These areas are important for conservation and recovery of the desert tortoise.

Las Vegas buckwheat:

These conservation recommendations should be implemented in the following order of priority to ensure long-term protection of the Las Vegas buckwheat and its habitats within the disposal

boundary. These measures are consistent with those included in the supplemental information to the biological assessment (BLM 2004c) and will serve to avoid and minimize effects to the species. The measures are outlined under the Description of the Proposed Action, referred to under the Effects of the Proposed Action section, and summarized again here. Successful and timely implementation of these measures is essential for the conservation of the species and to avoid a potential listing action by the Service.

1. The occupied and suitable habitat known to occur within the proposed CTA, the City of North Las Vegas nominated parcel, and the scattered BLM parcels in the disposal boundary should be preserved *in situ* to the greatest extent possible to ensure protection of the Las Vegas buckwheat and to avoid and minimize the direct loss of individuals and habitat fragmentation. The following should be implemented to achieve this level of protection for the species in these areas:
 - BLM will not transfer title to any lands within the proposed CTA (portions north of T.19S, R.61E, sections 15 and 16) or the City of North Las Vegas nominated parcel (portions of T.19S, R.61E, sections 15, 16, and 21) until conservation agreements have been developed and fully executed. These two land parcels are mutually exclusive with regard to the conservation agreements and subsequent transfer of title. The Service also recommends that transfer of title is not completed for the scattered BLM parcels in the disposal boundary until adequate conservation measures have been identified for those sites, specifically the Tropicana and Decatur locale.
 - After the lands within these areas are transferred, the owners would be required to manage the lands consistent with the approved conservation agreements and negotiated terms of ROW grants or R&PP leases to ensure long-term protection of sensitive resources.
 - Two separate conservation agreements will be developed; one for the proposed CTA and one for the City of North Las Vegas nominated parcel. These documents shall provide the framework for identifying appropriate land management activities and allowable land uses within these areas, as well as provide long-term guidance for the conservation and management of the unique sensitive resources. Because the proposed CTA and City of North Las Vegas nominated parcel are adjacent, the land and resource management issues are virtually identical; therefore, the agreements, although separate, shall be consistent in their content relative to resource conservation.
 - Steering committees will be established to assist in the development and implementation of the conservation agreements for the proposed CTA and the City of North Las Vegas nominated parcel. The committees are advisory in nature and will

work together with BLM, the Service, Nevada Division of Forestry, and other stakeholders to devise strategies that balance land use and resource protection within the CTA and City of North Las Vegas nominated parcel.

- The Service recommends that the conservation area that will be encompassed by the proposed CTA and City of North Las Vegas nominated parcel be expanded to 8,000 acres. The proposed CTA encompasses 5,000 acres in the Draft EIS (BLM 2004b). Expansion of the CTA would ensure that currently unoccupied, suitable habitat, which is contiguous with occupied habitat, is available for colonization by the Las Vegas buckwheat and bearpoppy in the future. This additional acreage would also protect the integrity of the Upper Las Vegas Wash system that provides for natural flood control. Sufficient buffers around the wash are critical to maintaining the sensitive resources over time as adjacent areas are developed.
 - Entry and access for mineral resource development on BLM land within the disposal boundary area have been withdrawn under SNPLMA and the Clark County Act, subject to valid existing rights that have already been granted under the mining laws. No mining claims, leases, permits, and community use pits for mineral material sales would be granted as discussed under the proposed action.
2. If protection of lands that support occupied or suitable habitat is compromised by activities associated with development, ROW grants, or R&PP leases, such that it is not feasible to preserve populations *in situ*, mitigation and resource protection requirements would be determined through a consultative process among members of the steering committees and would vary based on the location proposed for development and extent of resource impacts. The following measures may be implemented if agreed upon by all parties:
- All mature seed will be collected from the plants until the site is disturbed. BLM will arrange for storage and maintenance of the seed until utilized for propagation or other restoration activities.
 - Once all available seed has been collected, individual plants may be salvaged by a company or organization approved by BLM and relocated to the proposed CTA or other protected area with appropriate levels of maintenance and monitoring.
 - For any population that will be negatively affected, voucher specimens will be collected and accessioned into the University of Nevada, Las Vegas, herbarium with extirpation documentation, and will be forwarded to the Nevada Natural Heritage Program in Carson City.

- Efforts should be made to conduct research on the seed bank and soil parameters to further understand the chemical and physical characteristics of the habitat and how seeds are distributed.
- Other actions taken could include stockpiling of topsoil, propagating materials for restoration or potentially horticultural purposes, and transplantation into conserved habitat areas.

In addition to the conservation measures described by BLM in the Description of the Proposed Action and summarized above, the following conservation recommendations would provide mechanisms to track the status of the Las Vegas buckwheat and its habitats:

1. Parties to the conservation agreements, ROW grants, and R&PP leases should work with the Service to complete a rangewide status survey of the Las Vegas buckwheat both within and outside of the Las Vegas Valley. This assessment should include, but not be limited to, the general health of the populations, numbers of individuals, a quantification of occupied and suitable habitat, threats to the species and its habitats, and conservation recommendations.
2. As part of the conservation agreements, ROW grants, and R&PP leases, a monitoring program and adaptive management process should be incorporated into the management strategies. The monitoring protocol should provide a mechanism for assessing population trends and habitat characteristics as they relate to habitat quality and the effects of land uses in the area. The protocol should include, but not be limited to, a monitoring schedule, key management questions, measurable success criteria, and a reporting schedule. Regular monitoring will provide data necessary to evaluate population stability and health and effectiveness of specific habitat restoration and management activities. Qualitative methods, such as standardized photo points or presence/absence surveys, can offer important information regarding habitat conditions, expansion and/or declines of existing populations, or discovery of new populations (CNPS 1999).

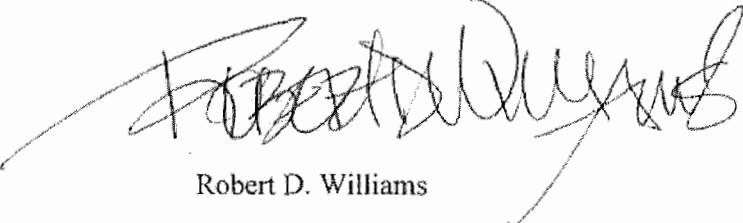
In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats or species of concern, the Service requests notification of the implementation of any conservation recommendations.

D. REINITIATION

This concludes formal consultation on the actions outlined in your September 10, 2004, request. As required by 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over an action has been retained (or is

authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. Unless one of the four reinitiation trigger stated previously is reached, the termination date for this biological opinion is **December 31, 2006**, at which time a new consultation shall be completed in accordance with Service guidance on programmatic consultations.

If we can be of any further assistance, please contact Michael Burroughs in the Southern Nevada Field Office, at (702) 515-5230.

A handwritten signature in black ink, appearing to read "Robert D. Williams", is written over a large, faint, circular stamp or watermark.

Robert D. Williams

cc:

Plan Administrator, Desert Conservation Program, Clark County Department of Comprehensive Planning, Las Vegas, Nevada
Supervisory Biologist - Habitat, Nevada Department of Wildlife, Las Vegas, Nevada
Assistant Regional Director, Ecological Services, Fish and Wildlife Service, Portland, Oregon
Senior Resident Agent, Division of Law Enforcement, Fish and Wildlife Service, Boise, Idaho

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Attachment A

SECTION 7 FEE PAYMENT FORM

Entire form is to be completed by project proponent

Biological Opinion File Number: 1-5-96-F-023R.3

Fish and Wildlife Service Office that Issued the Opinion:
Nevada Fish and Wildlife Office, Reno, Nevada

Species: Desert tortoise (*Gopherus agassizii*)

Project: Programmatic Biological Opinion for the Las Vegas Valley, Clark County, Nevada

Number of Acres to be Disturbed: _____

Fee Rate (per acre): _____

Total Payment Required: _____

Amount of Payment Received: _____

Date of Receipt: _____

Check or Money Order Number: _____

Project Proponent: _____

Telephone Number: _____

Authorizing Agencies: Bureau of Land Management, Las Vegas Field Office

Make checks payable to: Clark County Treasurer

Deliver check to: Clark County Desert Conservation Program
c/o Dept. of Air Quality and Environmental Management
Clark County Government Center
500 S. Grand Central Parkway, first floor (front counter)
Las Vegas, Nevada 89106
(702) 455-5821)

If you have questions, you may call the Southern Nevada Field Office of the U.S. Fish and Wildlife Service at (702) 515-5230.