

MAR 20 2008



CENTER for BIOLOGICAL DIVERSITY

Because life is good.

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March 18, 2008

Dear Mr. Harvey:

This letter constitutes formal input from the Center for Biological Diversity to the Notice of Intent to Act Upon a Regulation to add the Las Vegas buckwheat to the *List of fully protected species of native flora*, (NAC 527.010), dated January 22, 2008.

The Center for Biological Diversity (Center), a non-profit, public interest environmental organization dedicated to the protection of native species and their habitats through science, policy, and environmental law. The Center has over 40,000 members throughout the United States. The Center and its members are concerned with the conservation of imperiled species, such as the Las Vegas buckwheat, and the effective implementation of state and federal legislated mandates for species protection.

Unfortunately, and tragically, the time for voluntary, proactive conservation measures to protect the Las Vegas buckwheat (LVB) has come and gone with little having been done to provide for this species' long term continuance on our planet.

### **General**

The Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) is a recently identified, genetically unique subspecies found in Clark and Lincoln Counties, Nevada (Reveal, 2004; Ellis and Wolf, 2007).

There are currently nine known populations that can be further stratified into fifteen sites of occurrence based on ownership and level of protection. Total acres of currently occupied habitat are about 1145 acres, of which 25% are subject to imminent extirpation.

The largest threats to the species are private land development, unmanaged, and in some cases illegal, off-road vehicle (ORV) use, mining and changes in the wildfire regime.

Of the fifteen known sites, only one in the Muddy Mountains of Clark County is securely conserved; it totals about 50 acres.

Eight other sites (776 acres) are at risk from negative impacts or extirpation from human related causes.

The six remaining sites totaling 319 acres, having no protections, have been or soon will be extirpated. Table 1, which follows, outlines the status and threats to each population known as of January, 2008.

Clark County has experienced unprecedented long term population growth, fueled in part by land acts passed by Congress to provide Las Vegas and other communities with lands for urban expansion. Along with the direct impacts from the development footprint, comes the connected consequences of many more people wishing to recreate, often with negative impacts on the habitats of species such as the Las Vegas buckwheat.

The Las Vegas buckwheat is in immediate need of protection and should be added to the State's list of "fully protected species of native flora", pursuant to NRS 527.050 and 527.270.

**Land Ownership, management responsibilities, and species status**

Upon receiving notice of the U.S. Fish and Wildlife Service's assessment of the status of the Las Vegas buckwheat in the Federal Register on December 6, 2007 (Federal Register, 2007b), the Center conducted its own analysis of the data and developed Table 1 below.

Table 1: Known Populations and Conservation Status of the Las Vegas Buckwheat, as of January, 2008.

Population/ Location	Site name	Land owner	Acres of remaining occupied habitat	Acres extirpated or soon to be extirpated	Threats <u>1/</u>	Conservation Status
Upper Las Vegas Clark County	Eglington Preserve	BLM	59		ORV Recreation	At risk
	Olympia -- Parks Highlands Master planned community	private		92	Development	To Be Extirpated (most of site still exists as of 2.2.08)
	Conservation Transfer Area	BLM	127		Development ORV Recreation	At Risk
Nellis AFB Clark County	Area III (1)	DOD	233		Recreation Mission essential needs	At Risk
	Area III (2)	DOD		137	Flood Control Housing Other development	Extirpated, or to be Extirpated
Undeveloped parcels (7) in Las Vegas Valley Clark County	Las Vegas Valley Private	Private	3		Development	At Risk
	Las Vegas Valley Private	Private		32	Development	Extirpated
Tropicana-Decatur Parcel	Trop-Decatur	BLM	44		R&PP lease Flood control	At Risk

Clark County					Developed park	
Muddy Mountains Clark County	Lovell Wash	BLM	50			Conserved
Coyote Springs Clark County	Coyote Springs (1)	BLM	62		ORV Utility corridors Development	At Risk
	Coyote Springs (2)	Private		25	Development	Extirpated
Gold Butte Clark County	Gold Butte	BLM	7.5		ORV Recreation	At Risk
White Basin Clark County	White Basin (1)	US Borax Co	30		Mining ORV	At Risk
	White Basin (2)	BLM	172		ORV	At Risk
Toquop Wash Lincoln County	Toquop Wash	BLM	71.8		Utility corridors Development Mining ORV	At Risk
Totals			859.3	286 acres		
<b>1/ All sites at risk Change and</b>	<b>from climate other stochastic</b>	<b>events.</b>				

The nine populations can be viewed as occurring on 15 different sites, with varying degrees of protection and viability. They are now summarized:

- **Upper Las Vegas Wash** – This population is in an area available for disposal under the Clark County Conservation of Public Lands and Natural Resources Act of 2002. Portions of these lands were nominated for sale by the City of North Las Vegas, and were sold to the Olympia Group in November, 2005.
  - **Eglington Preserve** – This area was withdrawn from the land sale proposal under a conservation agreement among the BLM, FWS, Nevada Division of Forestry and the City of North Las Vegas in June 2005 (BLM, 2005a). The Preserve contains approximately 59 acres of occupied LVB habitat. The area will be bordered on three sides by residential and commercial development and on the north it is bisected and isolated by the other occupied habitat in the upper Las Vegas Wash by a four-laned highway. The area experiences heavy illegal off-road vehicle (ORV) use. Due to the direct and indirect impacts from the surrounding development this area should be considered **At Risk**.



Picture of the Eglington Preserve, February 2008. (R. Mrowka)

- **Olympia Par Highlands Master Planned Community** – under the terms of the conservation agreement, 92 acres of occupied LVB habitat were cleared by the BLM and FWS for development and extirpation of the habitat. Included, were two sites isolated from the main population of LVB in the upper Las Vegas Wash – the Deer Springs and the Decatur sites, as well as sites adjacent to the Eglington Preserve. These sites provided geographic redundancy and some level of insurance, against stochastic or human caused impacts, for the Upper Las Vegas Wash population, but were determined to be “degraded” and hence expendable. The Deer Springs site in particular seemed to offer a reasonable opportunity for conservation management. While cleared for destruction, most of the site still exists. These sites should be considered **Extirpated**.



Occupied Las Vegas buckwheat habitat sold to Olympia for the Parks Highlands master planned community. To be, but not yet, extirpated as of early February, 2008. (R. Mrowka)

- **Conservation Transfer Area** – The 2004 Final Environmental Impact Statement (FEIS) and Record of Decision for the Las Vegas Valley Disposal Boundary (BLM, 2004) deferred a decision on 5000 acres of the upper Las Vegas Wash pending more inventory and analysis on the unique paleontological, cultural and special status plant species the area contained. This area was identified in the FEIS as the Conservation Transfer Alternative or CTA. The CTA contains approximately 127 acres of occupied LVB habitat. The BLM initiated several subsequent planning efforts for the CTA, and in July, 2007 published in the notice in the Federal Register of a NEPA process for the development of an Upper Las Vegas Wash Supplemental Environmental Impact Statement (Federal Register, 2007a). Preliminary alternative being considered range from protecting about 3000 acres to 13,000 acres. Also under consideration is what entity or agency should be responsible for managing the CTA; options run the gamut from BLM retaining ownership to transferring it to a local government or non-profit organization. The area experiences heavy illegal ORV use. Due to the uncertainty of the decision on how many acres will be protected, how they will be managed and by whom, the LVB habitat in the CTA should be considered **At Risk**.



View of the Conservation Transfer Area (CTA) looking northwest. Current dirt road to the left will soon be a 4-lane arterial highway forming the southern boundary of the CTA. (R. Mrowka)

- **Nellis Air Force Base** – Area III of Nellis AFB contains the single largest and intact remaining population of the LVB. There are approximately 370 acres of occupied habitat, which can be divided into two distinct sites.
  - **Area III (1)** – This site is fenced and has been in a pseudo-protected status since the late 1990s due to the co-presence of Las Vegas bearpoppy, a State protected species. Area III (1) constitutes 233 acres. Presently, passive recreational use, including horseback riding occurs in the area. During discussions regarding sites 1 & 2 in Area III, Nellis AFB and Air Force planning staff in Langley, Virginia stated many times that “mission essential” needs will ultimately come ahead of any desired conservation measures. A conservation agreement is being

considered which would cover this site and further clarify the level of protection afforded to it. Until the conservation agreement is completed, this site should be considered **At Risk**.

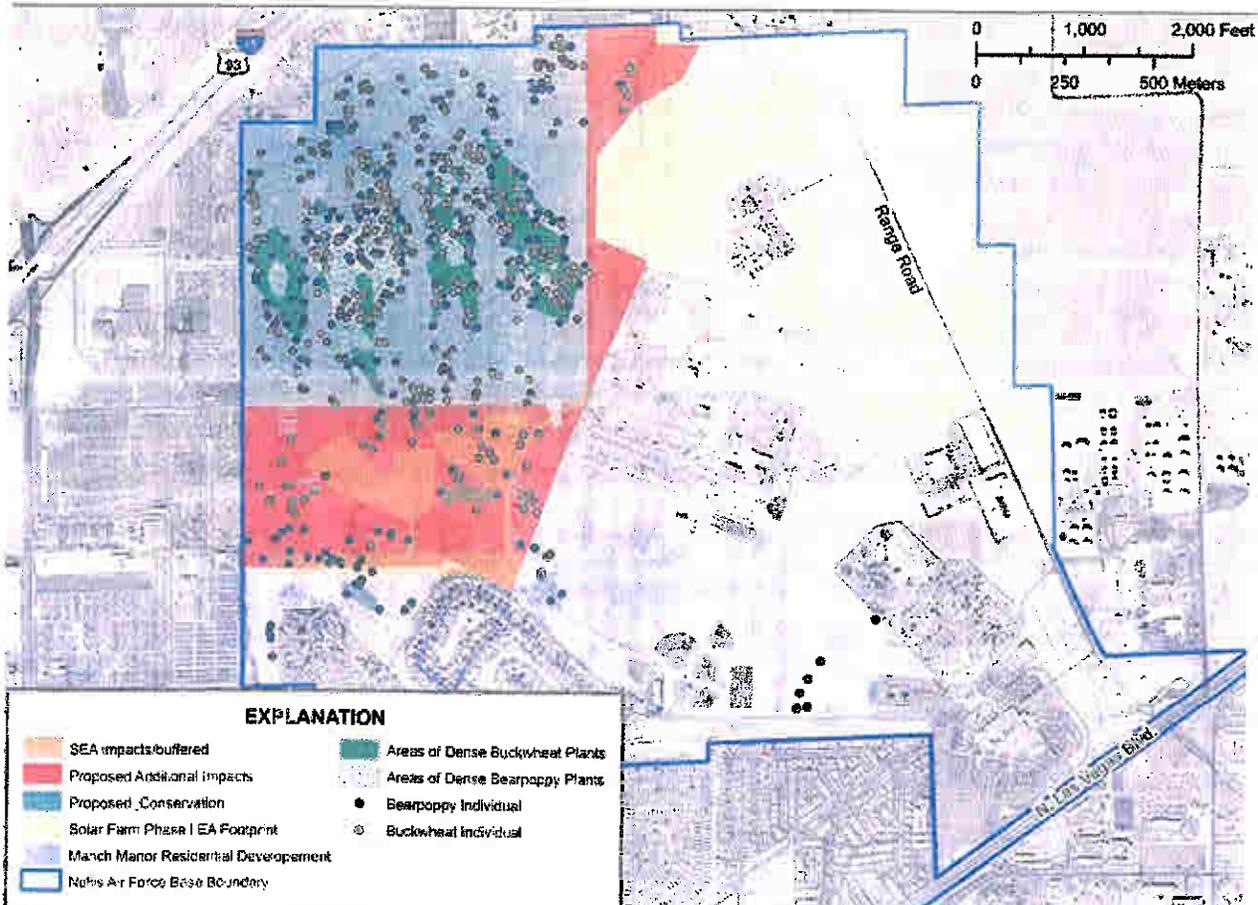


Figure 1. Nellis AFB Proposed Impacts and Conservation of Area III and Las Vegas Bearpoppy and Buckwheat Populations (2004 Data)

- **Area III (2)** – In February, 2007, Nellis AFB issue an Environmental Assessment and Finding of No Significant Impact for the construction of a stormwater detention system and relocation of 12 previously assessed housing units as part of the Military Family Housing Revitalization Project. This project in Area III will result in the destruction of 137 acres of occupied LVB habitat. The conservation agreement for Area III (1) is a result of this action. This site should be considered as **Extirpated**.
- **Private, Undeveloped Parcels in the Las Vegas Valley** – Growth in the Las Vegas Valley has been explosive (see Figures 3 & 4). The Southern Nevada Public Land Management Act of 1998 speed the disposal of BLM public land holdings in the Las Vegas Valley, and with them, uncounted acres of LVB. As can be inferred from Figure 2, a large part of the Las Vegas Valley provided habitat for the LVB. Today, habitat is down to the last vestiges of what it once was. In 2004, LVB occurred on 35 acres of private property. In 2007, just 3 acres remained undeveloped. With no current efforts

being made to preserve the remaining private habitats, all 35 acres should be considered as **Extirpated**.

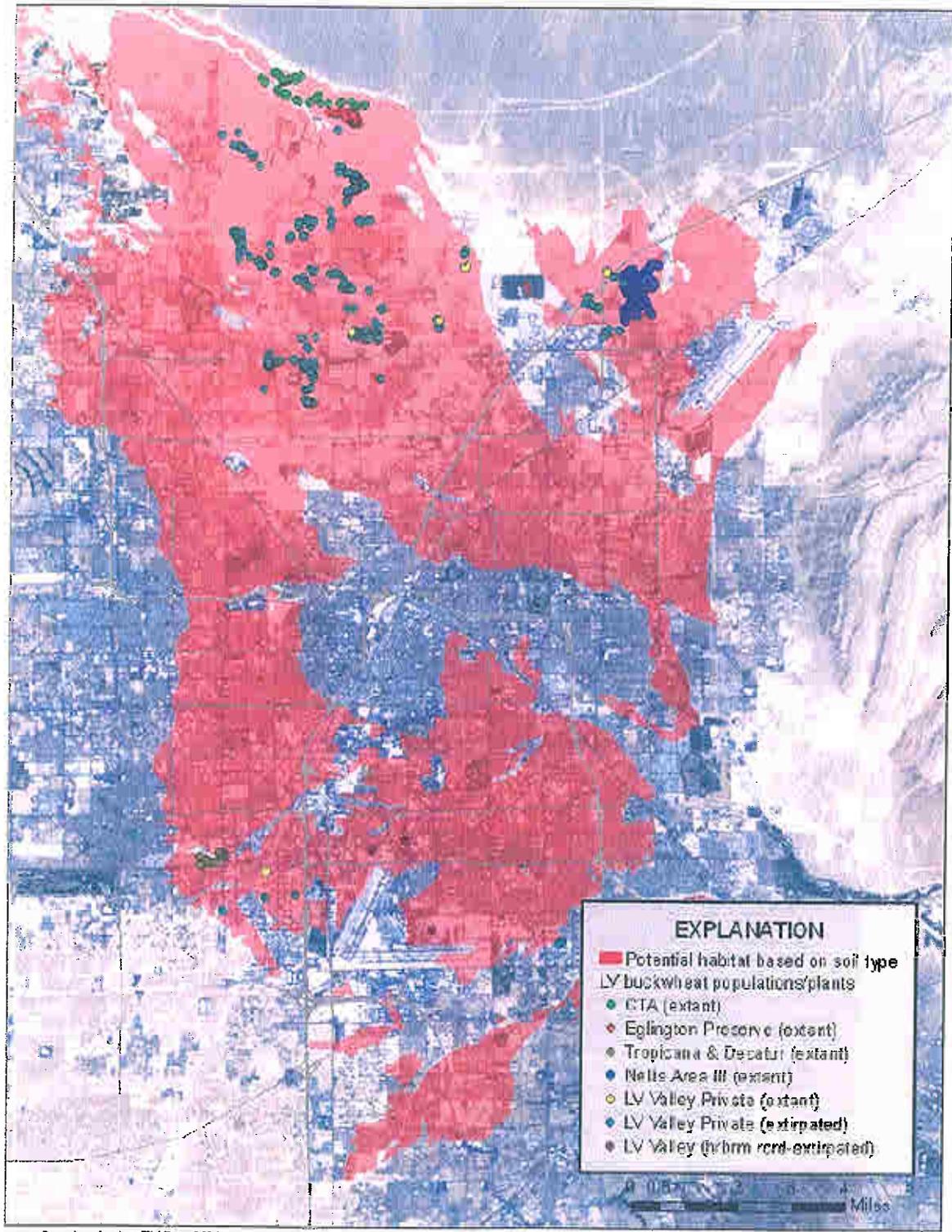


Figure 2: Potential habitat based on suitable soils mapping and known occurrences (historic and current) of Las Vegas buckwheat in the Las Vegas Valley (FWS, 2007)

- **Tropicana-Decatur Parcel** – This parcel (72 acres) is completely isolated from other populations of LVB, and is surrounded by heavy urban development. It most likely represents a habitat that was once common in the Las Vegas Valley. The site is encumbered by Clark County who holds an easement and a Recreation & Public Purpose lease from the BLM for the construction of a detention basin and developed urban park. The area, according to FWS estimates, in a technical assistance letter to the BLM, contains 44 acres of LVB habitat (FWS, 2007a). The FWS in the same letter requested that at least 33 acres be conserved. Current County development proposals would conserve only about 10 acres. This area should be considered to be **At Risk**.



Tropicana-Decatur parcel. Las Vegas buckwheat occupies the “badland” topography. The foreground has been cleared of mesquite-acacia habitat to make way for a detention basin/park. Photo taken in January, 2008. (R. Mrowka)



Another view of the Tropicana-Decatur parcel showing its proximity to the Las Vegas Strip. (FWS photo)

- **Lovell Wash, Muddy Mountains** – This 50 acre population is the only one which can be considered as **Conserved**. It is located in a Congressionally designated Wilderness Area, managed by the BLM. It is still at some risk from illegal ORV activity.
- **Coyote Springs** – This population was confirmed in 2005 and consists of two sites:
  - **Coyote Springs (1)** – This site of 62 acres is managed by the BLM. It is near Highway 93 and is potentially affected by power, water and utility corridors, as well as by unmanaged ORV recreational use. For these reasons it should be considered as **At Risk**.
  - **Coyote Springs (2)** – This site of 25 acres is in private ownership and within the Coyote Springs Master Planned Development. There are no know plans to protect the site and in fact it may have already been destroyed. It should be considered as **Extirpated**.
- **Gold Butte** – This is an isolated and remote population in a BLM Area of Critical Environmental Concern that was established for desert tortoise conservation. Never the less, unmanaged recreational ORV use of the area is heavy and poses a definite threat to this small population. It should be considered as **At Risk**.
- **White Basin** – This area, east of the Las Vegas Valley, can be divided into two sites:
  - **White Basin (1)** – This site is owned by the U.S. Borax Company as part of its gypsum mining activities. The FWS in its species assessment notes that the BLM has plans to acquire the lands holding this site to protect it for the benefit of the species. ORV recreational use is another threat to the site. It should be considered as **At Risk** due to the tentative status of the plans for protection and the heavy use by ORVs.
  - **White Basin (2)** – This site is managed by the BLM, and is open to unmanaged ORV use and surface mining claims. It should be considered as **At Risk**.
- **Toquop Wash** – Located in Lincoln County, this population is currently the only one outside of Clark County, Nevada. Recently discovered in 2005, this population is at risk from surface mining, unmanaged ORV use, and impacts from a proposed coal-fired power plant and associated infrastructure. It is **At Risk**.

**Threats and rationale for the need to include Las Vegas buckwheat on the List of fully protected species of native flora (NRS 527.050 and 527.270).**

1. **The present or threatened destruction, modification, or curtailment of a species habitat or range.**
  - a. **Human-built Development** – Growth in Las Vegas and Clark County, Nevada is known national for being explosive and prolonged (Figure 3). The area it is the fastest growing in the U.S. and 30<sup>th</sup> fastest in the world. (U.S. Census Bureau, 2007; Citymayors, 2008). In December, 2007 the population of Clark County topped the 2 million mark for the first time (Clark County, 2007).

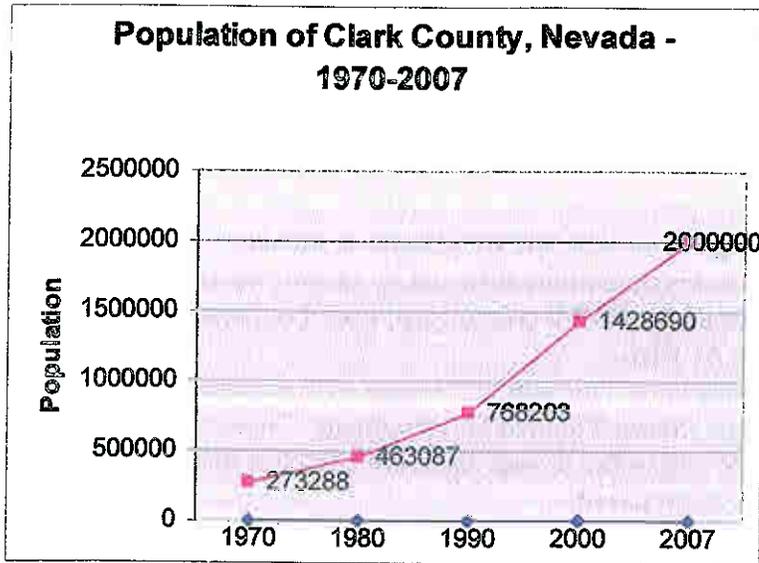


Figure 3 - Population growth of Clark County, 1970-2007

Despite recent stories and claims about the “Manhattanization” of Las Vegas, most growth is and has occurred at the urban-wildland boundary, and has consumed many acres of wildland habitat. (Figure 4). This sprawl and development at the margins has been facilitated by Congressional land acts which provide for the disposal of BLM public lands, within an identified disposal boundary, for private development. Since the passage of the Southern Nevada Public Land Management Act in 1998, 12,994 acres of public lands have been sold to private interests in the Las Vegas Valley. Additionally, 5140 acres were conveyed to Clark County for an “airport cooperative management area”, much of which has seen commercial and industrial development.

The net result of these land transfers and development is a reduction of LVB habitat in the Las Vegas Valley, and increased threat to the remaining habitat. According to FWS files acquired through FOIA, acres of buckwheat habitat on private lands in the Valley were about 67 acres in 1999; in 2004 there were 35 acres; and in 2007, the service estimated only 3 acres remained. (FWS, 2007b).

As previously noted in the discussion of remaining populations and sites, several of the sites are at risk from additional development. This is particularly pertinent to the habitats in the upper Las Vegas Wash, those remaining on private sites, those at Coyote Springs or along Highway 93, the site at Tropicana & Decatur, and the sites in Toquop Wash. These sites constitute about 308 acres, or 36% of the remaining known occupied habitat.

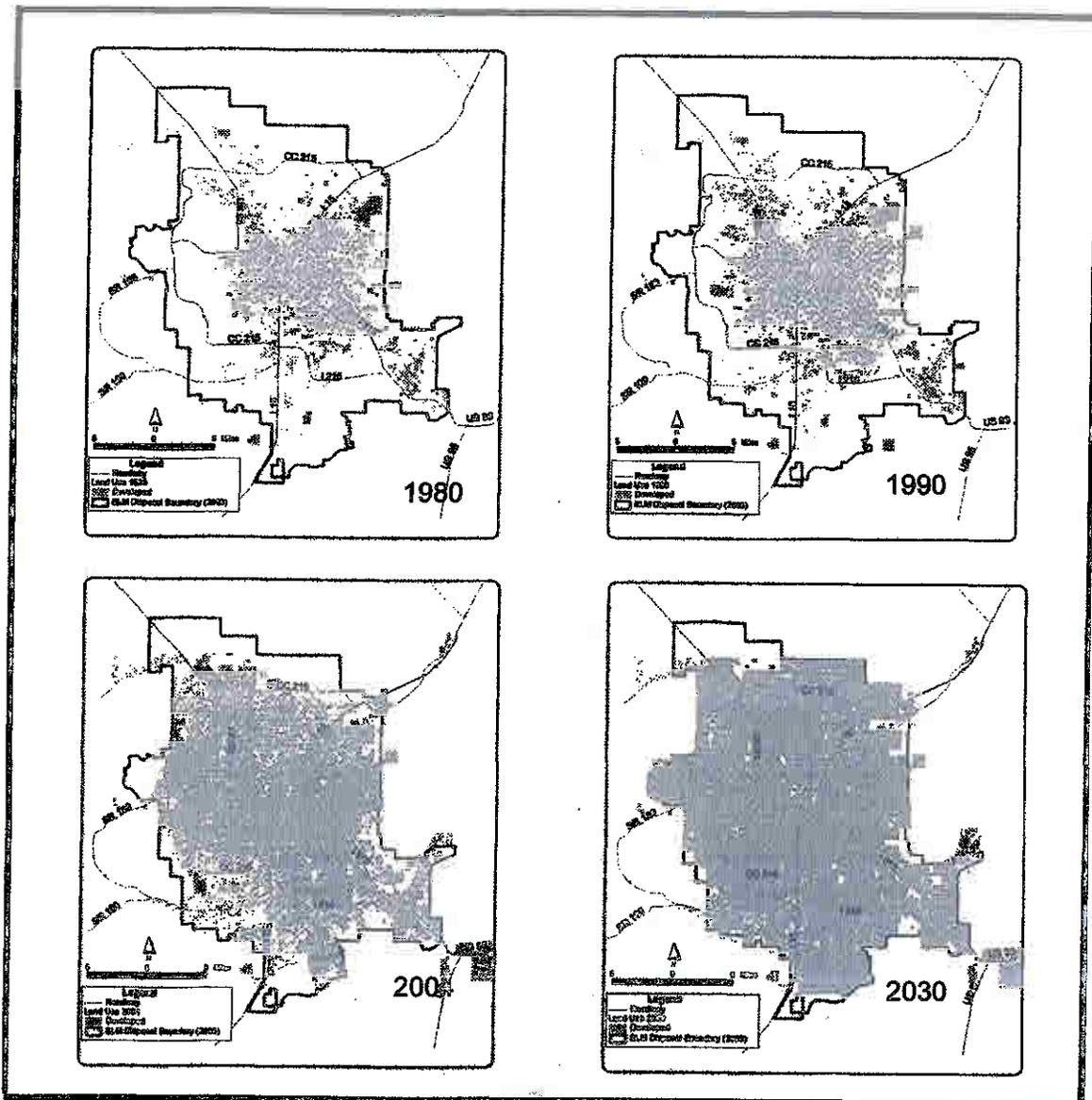


Figure 4 - Geographic expanse of development in the Las Vegas Valley (RTC, 2006)

- b. **Unmanaged Recreation** – Aside from the direct loss from the development of its habitat, the next biggest threat to LVB is from unmanaged recreational use of the habitat and the attendant unintended consequences of such use.

Damage from unmanaged ORV use constitutes the biggest threat from recreational use of habitat. Impacts from ORV use include the direct destruction or injury of plants; compaction of soil and reduced infiltration of rainwater; damage to soil crusts; and alterations in microclimate. The Clark County Rare Plant Conservation Management Strategy identified casual ORV use and the creation of ORV trails as significant threats for all rare plants on BLM public lands (TNC, 2007).



Las Vegas buckwheat surviving in an ORV heavy use area. (R. Mrowka)

A feasibility report for a proposed ORV park reported that nationally, new retail sales of all-terrain vehicles and off-highway motorcycles has increased dramatically according to the most recent statistics available (see Figure 5)

New retail sales	All-terrain Vehicles	Off-highway Motorcycles	Total
1995	277,800	90,700	368,600
1999	545,900	159,700	705,600
2003	799,400	314,000	1,113,400

Figure 5 - Number of new retail sales of OHVs in the U.S., 1995-2003 (Applied Analysis, 2006).

In this same report the authors estimated that in Nevada in 2003, 23.8% of the over 16 years of age population (360,000 people) participated in some form of ORV activity throughout the year.

Given the proximity of many of the remaining LVB sites to the existing Las Vegas urban area or the proposed Coyote Springs urban area, the threat from casual and unmanaged ORV recreation is a serious one.

High speed desert racing with specialized off-highway trucks, permitted by the BLM, is a threat to the LVB in the White Basin area.

Of the remaining occupied habitat of LVB, 55% is highly susceptible to damage or destruction from ORV motorized recreation.

Other forms of outdoor recreation, such as equestrian use or hiking pose much less of a threat and are probably of concern only in specific cases. Equestrian use at Nellis AFB Area III occurs, but is limited due to the restricted access to the base, and an increasing awareness of base personnel for the need to protect the buckwheat plants.

- c. **Mining** – It is well established that the LVB has a high affinity for soils with a high gypsum content. It is most often found in a “badlands” context, on areas with low competition from other plants. It is most commonly found on the Natural Resource Conservation Service’s soil types 630 and 302 (FWS, 2000; Reveal, 2002). The gypsum soils of Clark and Lincoln Counties can yield a high quality and commercially extractable product, leading to a threat to the species.

According to information contained in the FWS Species Assessment (FWS, 2007c), the entire Toquop population is within a valid placer mining claim, and both White Basin sites (private and BLM) are open to mining at risk from surface mining. The Gold Butte and Coyote Springs (BLM) populations are in Areas of Critical Environmental Concern and have been previously withdrawn from mineral entry; however, this protection has expired but is once again being evaluated in a NEPA process.

As such, mining is a current threat to about 24% of the currently occupied habitat.

## **2. The inadequacy of existing regulatory mechanisms and management failures.**

- a. **BLM** – Approximately 69% of the remaining occupied habitat is under the management of the BLM (see Table 1). Currently, the LVB is a BLM sensitive species. Under BLM Directives, sensitive species are to receive the same level of protection as that afforded to candidates for listing. Under BLM manual Section 6840.06C, BLM’s policy for candidate species states, “BLM shall implement management plans that conserve candidate species and their habitats and shall ensure that actions authorized, funded, or carried out by the BLM do not contribute to the need for the species to become listed” (BLM, 2001).

Although the BLM must consider sensitive species in National Environmental Policy Act (NEPA) decisions for federal projects, the responsible official may still authorize impacts to occur to the LVB. Some recent examples of this include: the conservation agreement with the City of North Las Vegas and others that led to the sale of occupied buckwheat habitat to the Olympia Group for the Parks Highlands development; an easement and Recreation and Public Purpose lease to Clark county for development of the occupied Trop-Decatur site; and permits for desert racing potentially affecting the White Basin population.

The Las Vegas Resource Management Plan and final Environmental Impact Statement restricts OHV use to designated roads and trails and dry washes. The BLM has also issued Closure Orders that prohibit OHV use on all Public Lands in the Las Vegas Valley, except for the Nellis Dunes OHV Use Area (BLM, 2005b). Despite these decisions, illegal and unmanaged OHV use is rampant throughout Clark County, including the Las Vegas Valley. The LVB is particularly threatened in the Upper Las Vegas Wash area, White Basin, Coyote Springs and Gold Butte. Effective

enforcement of closures and restrictions is severely hampered by limited budgets and limited staffing. Las Vegas BLM staff informed FWS that there are only one law enforcement officer for about every 370,200 acres of the Las Vegas District, outside of the National Conservation Areas (FWS, 2007c).

Lack of mineral withdrawals by the BLM leads to the continued threat to the White Basin, Muddy Mountains and Toquop populations, and potentially to the Gold Butte and Coyote springs populations if expired mineral withdrawals are not re-instated.

- b. Congressional Actions** – About 90% of Clark County is owned by the federal government. Legitimate concerns about federal lands “land locking” growing communities have led Congress to pass several pieces of legislation that authorize the sale of BLM public lands to private developers. The first was the Santini-Burton Act of 1980 (Public Law 96-586), which authorized the BLM to sell up to 700 acres of public lands in the Las Vegas Valley within an identified “disposal boundary”. Approximately 600 acres were sold through the year 2000 (GAO, 2001). Santini-Burton was incorporated and expanded in 1998 by the passage of the Southern Nevada Public Land Management Act which incorporate the Santini-Burton disposal boundary and expanded it to accommodate the disposal of 52,000 acres of BLM public land in the Las Vegas Valley. The Las Vegas Valley disposal boundary was further expanded by the Clark County Conservation of Public Land and Natural Resources Act of 2002 to make available an additional 22,000 acres of public lands for disposal. The 2002 additions include the areas covered by the CTA and the Olympic Park Highlands master planned community (BLM, 2004).

In addition, outside the Las Vegas Valley other land disposal acts provided for the sale of over 25,000 additional acres in the Ivanpah Valley and Mesquite Areas. As of December 31, 2007, the BLM reports having disposed of about 34,500 acres of public lands within the Las Vegas Valley through land sales, Recreation and Public Purpose leases or exchange (BLM, 2007).

These land acts were done without NEPA and without adequate public review and input. As a result their passage has led to many unintended consequences such as the destruction of LVB and other rare plant habitats, unmanaged growth in the face of water supply shortages and air quality concerns, destruction of significant paleontological resources, and controversies between the BLM, interest groups, and municipalities over the appropriate uses of lands within the disposal areas. Further Congressional authorizations for public land disposal pose an unknown, but potentially significant threat to the LVB and other rare species in Clark County.

- c. Department of Defense (DOD)** – Under the Integrated Natural Resources Management Program (INRMP), the FWS and DOD have a cooperative agreement to manage species on military installations to preclude listing under the Endangered Species Act. Although once protected on Nellis AFB Area III, this protection was removed from a May 2007 draft INRMP despite FWS protests (FWS, 2007c).

In Area III of Nellis AFB there are an estimated 370 acres of LVB habitat, of which currently only 233 will be conserved. The remaining 137 acres of habitat will be extirpated to build flood control devices and base housing.

The LVB in the protected habitat enjoys such protection from the presence of Las Vegas bearpoppy, a State listed species. The protected area on Nellis AFB Area III constitutes over 27% of the remaining occupied LVB habitat.

The FWS notes in its Species Assessment for LVB that protections for the conserved habitat in Area III are inadequate, and that unmanaged equestrian and other recreational uses, as well as dumping are occurring in the LVB area (FWS, 2007c). In addition, Nellis AFB staff have consistently stated that protections for Area III cannot be guaranteed due to the absolute priority given to the mission for the base (Mrowka, personal observation).

- d. **State Government** – Currently, the LVB is not a protected species under Nevada Revised Statutes or Nevada Administrative Code, nor are there any management plans developed by the State for it. In 2001, 2002, 2003, and 2006 the Nevada Rare Plant Workshop and Rare Plant Committee recommended the addition of LVB to the State’s list of critically endangered species (Heritage, 2007; Heritage, 2008). The State held hearings for LVB listing in September of 2005, and in January 2006 issued a Decision Notice to not add LVB to the list of critically endangered species (State of Nevada, 2006).

The current Notice of Intent is re-examining the past conclusions in light of new data and changed circumstances, such as the Nevada Natural Heritage Program’s report, *Population Status of Las Vegas buckwheat (Eriogonum corymbosum var. Nilesii) based on 2006-2007 data* (Morefield, 2007), and the U.S. Fish and Wildlife Service’s Candidate Notice of Review finding that the Las Vegas buckwheat was sufficiently at risk to be added as a Candidate species (Federal Register, 2007c).

Despite the limited known occurrence on private lands at this time, State listing is still critically important since the Endangered Species Act section 9 prohibitions on “take” are significantly different for plants as opposed to wildlife and fish, and state listing adds a much needed measure of regulatory protection. A similar circumstance is that of the Las Vegas bearpoppy (*Arctomecon californica*), which is not federally listed, but thanks to state listing enjoys increased deference and protections on federal lands as well as the protections afforded to it on private lands.

- e. **Local Governments** – A Clark County Multiple Species Habitat Conservation Plan (MSHCP) and associated Incidental Take Permit (ESA Section 10 (a)) were developed for 78 species of plants and animals in Clark County in 2001. However, LVB is not a Covered Species under the MSHCP or Take Permit, and enjoys no regulatory or other protections under local government purview. It is an Evaluation Species under the MSHCP, meaning that insufficient information existed at the time to support an application for a Take Permit.

- f. **Private** – There are no adequate or comprehensive private protections afforded to LVB or its habitat.

In June, 2005, a Conservation Agreement was developed that afforded some protections for LVB found on parcels of land nominated by the City of North Las Vegas under the Southern Nevada Public Land Management Act. This agreement provided for the development and extirpation of 92 acres of LVB habitat in exchange for dropping 59 acres of habitat from development plans and instituting certain mitigation into any development agreements the City negotiated with the purchaser of the parcels (BLM, 2005a).

3. **Natural or manmade factors affecting its survival.**

- a. **Altered fire regimes and invasive species** – In its Species Assessment (FWS, 2007c) the FWS the threat as follows:

“Historically, fire in the Mojave Desert has been an infrequent and rare event. However, there has been a recent increase in fire prevalence caused by the invasion of nonnative annual grasses, which is a major concern for land managers (Brooks and Matchett 2006 p. 148). Additionally, human activities in the Mojave have increased both fire frequencies and the size of individual fires (Brooks and Matchett 2006 pp. 148-164). Although we have little specific information regarding the potential for Las Vegas buckwheat habitat to burn, fire is a major threat to the desert tortoise (Esque et al. 2003 pp 103-111) which occupies the same ecosystem as the Las Vegas buckwheat. The known range of the Las Vegas buckwheat closely matches the desert tortoise Northwestern Mojave Recovery Unit in both location and extent. In 2005, more than 60 fires larger than 10 acres in size burned approximately 500,000 acres or approximately 10% of the desert tortoise Northwestern Mojave Recovery Unit (Service 2007c p. 28).

While none of the 2005 fires burned in Las Vegas buckwheat habitat, fires ignited in creosote-bursage vegetation outside of Las Vegas buckwheat habitat could easily spread through an entire Las Vegas buckwheat population. Based on a BLM fire risk assessment, the Coyote Springs and Gold Butte populations are in areas with a moderate risk of fire and the White Basin, Muddy Mountains, CTA and Eglington preserve populations are in areas with a low to moderate risk of fire (Rash 2007 p.1).

Woody shrubs (like the Las Vegas buckwheat) and cacti are often killed by fire and those that survive are vulnerable to recurrent fire (Brooks and Pike 2002, p. 7). Post-fire survival of Las Vegas buckwheat is unknown; however, like many perennial desert plant species, individual plants are extremely slow growing, long lived and not specifically adapted to fire; and therefore, post-fire recovery would take decades. An increased fire frequency would likely negatively affect the Las Vegas buckwheat by not allowing a sufficient interval of time for recruitment and reproduction of new individuals to replace those lost during fires.

Based on the small size of the remaining Las Vegas buckwheat populations, life history of the subspecies (i.e. its slow recovery from fire) and the threat that fire poses to the Mojave Desert ecosystem, we conclude the Las Vegas buckwheat is vulnerable to stochastic fire events. It is unlikely that a single fire would threaten the entire Las Vegas

buckwheat range, however, it is likely that a series of fires over a period of years could threaten the subspecies over a significant portion of its habitat.

Two nonnative species are present in high densities on disturbed areas within two Las Vegas buckwheat populations. In the conservation transfer area, saltlover, (*Halogeton glomeratus*) has colonized disturbed soil within the CTA; while at Nellis Area III, African mustard, (*Malcolmia africana*) is common along the southern boundary of the site (Service 2007b, p. 2). Invasive species can out compete native annuals and perennial plants for water and soil nutrients and densely packed stands of invasive annual plants can reduce germination rates (Brooks and Pike 2002 p. 6). We do not have information in our files to indicate whether or not these species will adversely affect Las Vegas buckwheat recruitment and establishment. At this time we do not have sufficient information to evaluate the threat nonnative species pose to Las Vegas buckwheat. However, given the seriousness and magnitude of this threat for the Mojave Desert in general, we believe this threat to the subspecies should be carefully monitored. “

- b. Air pollution – Related particularly to the Toquop Wah site, there is a concern about nitrogen deposition to the soil from smoke stack emissions. Brooks and Pyke reported in a paper on invasive plants and fire in desert environments, that invasive and non-native grasses increase in density with increased soil nitrogen. This has the subsequent effect of potentially increasing the wildfire frequency and intensity, thus threatening the continued existence of the buckwheat at this site (Brooks and Pyke, 2001).
- c. Climate change – While climate change models are not predictive to the scale of LVB habitat, the general trends for southern Nevada indicate a high likelihood of increased temperatures and drought. The likely effects on LVB are reduced seedling recruitment, reduced vigor of established plants, and an increased threat from wildfires.

#### **Actions Needed for Recovery of the Las Vegas buckwheat.**

- a. The State of Nevada must add the Las Vegas buckwheat to the *List of fully protected species of native flora*.
- b. The State Forester should attempt to develop conservation agreements with the private landowners having LVB populations or potential habitat on their lands.
- c. The State Forester should work with Nellis AFB, the FWS and the BLM to ensure that the remaining current and historic LVB habitat on Nellis AFB is protected and preserved.
- d. The U.S. Fish and Wildlife Service should list the LVB as threatened or endangered under the Endangered Species Act and at the same time designate critical habitat.
- e. The BLM should acquire LVB habitat now owned by US Borax in the White Basin.

- f. The BLM should withdraw all current and historic remaining LVB habitat from mineral entry.
- g. Agencies or governments with the appropriate jurisdictions should prohibit off-road vehicle recreational use from all remaining current and historic habitat, including the prohibition of using routes in or close by LVB habitat for desert racing.
- h. The BLM should ensure that all remaining current and historic LVB habitat is protected and preserved in the upper Las Vegas Wash "Conservation Transfer Area".
- i. The BLM should ensure that the Toquop Wash population is conserved and protected from the direct and indirect impacts of the proposed coal-fired power plant and the infrastructure and other developments associated with it.
- j. The BLM and Clark County should ensure that the Tropicana-Decatur population is fully conserved and protected.
- k. The BLM and Fish and Wildlife Service should institute statistically-valid studies on the success of propagating LVB from seed, and the success of salvaging mature plants from areas where it will be extirpated.

### Summary

The Las Vegas buckwheat is critically endangered and threatened with extinction and under NRS 527.270 must be added to the *List of fully protected species of native flora*.

Historically, much of the buckwheat's habitat was on private lands within the Las Vegas Valley. Today, only small remnants remain on private lands, but these populations offer redundancy and spatial "insurance" against natural and man-caused events. Further, state-listing the Las Vegas buckwheat would provide federal agencies additional incentive to be proactive in the protection and conservation of this species, and would provide regulatory basis against "take" of the species and its habitat.

The addition to the Candidate List of the Endangered Species Act, and the Morefield report on the population status of the species warrant the State's re-consideration of the need to add this species to its list of critically endangered and threatened species.

The Center looks forward to the State's affirmative finding to list the Las Vegas buckwheat leading to increased protection and conservation of this worthy species.

Thank you for your consideration,



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Attachment – Literature Cited

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