U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Eriogonum corymbosum* var. *nilesii*

COMMON NAME: Las Vegas buckwheat

LEAD REGION: Region 8

INFORMATION CURRENT AS OF: April 2009

STATUS/ACTION

___ Species assessment - determined we do not have sufficient information on file to support a proposal to list the species and, therefore, it was not elevated to Candidate status
___ New candidate
_X_ Continuing candidate
__ Non-petitioned
_X_ Petitioned - Date petition received: April 23, 2008
__ 90-day positive - FR date:
__ 12-month warranted but precluded - FR date:
__ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:
a. Is listing warranted (if yes, see summary of threats below)? Yes
b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? Yes
c. If the answer to a. and b. is "yes", provide an explanation of why the action is precluded.

While we conclude that listing the Las Vegas buckwheat is warranted; an immediate proposal to list is precluded by other higher priority listing actions. Nearly all of our Listing Program funding must be used to comply with court orders and judicially approved settlement agreements, which are now our highest priority actions.

___ Listing priority change
Former LP: ___
New LP: ___

Date when the species first became a Candidate (as currently defined): December 6, 2007

___ Candidate removal: Former LPN: ___
___ A – Taxon is more abundant or widespread than previously believed or not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.

___U – Taxon not subject to the degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status due, in part or totally, to conservation efforts that remove or reduce the threats to the species.
___ F – Range is no longer a U.S. territory.
___ I – Insufficient information exists on biological vulnerability and threats to support listing.
___ M – Taxon mistakenly included in past notice of review.
___ N – Taxon does not meet the Act's definition of "species."
___ X – Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: General Group: Flowering Plants, Scientific Group: Polygonaceae (Buckwheat Family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Nevada, Clark and Lincoln counties

CURRENT STATES/COUNTIES/TERRITORIES/COUNTRIES OF OCCURRENCE: Nevada, Clark and Lincoln counties

LAND OWNERSHIP: Based on 1,149 acres of known, currently occupied habitat, ownership totals 1,029 acres on public lands (90 percent; including 659 acres Bureau of Land Management [BLM] and 370 acres Department of Defense [DOD]), and private ownership totals 120 acres (10 percent).

LEAD REGION CONTACT: Andy DeVolder, (916) 987-6188, Region 8, Sacramento, California; email: Andy_DeVolder@fws.gov

LEAD FIELD OFFICE CONTACT: Janet Bair, (702) 515-5230, Nevada Fish and Wildlife Office, Las Vegas, Nevada; email: Janet_Bair@fws.gov

BIOLOGICAL INFORMATION

Species Description

The Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) is a woody perennial shrub up to 4 feet (ft) high with a mounding shape. The variety is distinguished from closely related taxa by leaves that are densely hairy on one or both surfaces, at least twice as long as wide, with dense hairs spread along the stem. The branches are wooly haired and swollen at branch intersections. The inflorescences are 1 to 4 inches (in) long with the flowers arranged in umbrella-like clusters (corymbs) at the end of 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.

Photo Credit: Gina Glenne, USFWS

Taxonomy

The taxonomic classification of Las Vegas buckwheat has been an intricate history of name changes and revisions (*e.g.* Reveal 1967, 1971, 1980a, 1980b, 1983, 1985a, 1985b, 2002, and 2004). The Las Vegas buckwheat is part of the *corymbosum* complex, which is widespread in the southwest and concentrated on the Colorado Plateau (Reveal 2002, pp.26-37; Reveal 2004, p. 129). Based on morphology, Las Vegas buckwheat is probably most closely related to *Eriogonum corymbosum* var. *glutinosum* (Reveal 2002, pp. 32-33; Reveal 2004, p. 129). Las Vegas buckwheat has traditionally been assigned to the Colorado Plateau variant *E. c.* var. *glutinosum* but differs from *glutinosum* in its dense, white tomentose (hairy) leaves, disjunct distribution, and preference for gypsum soils (Reveal 2002, p. 26). Based on morphometric studies, Reveal (2004, p. 129) determined material from Clark County, Nevada represented a unique taxon and named this variety *nilesii*. The validity of Reveal's morphological determination was confirmed by Ellis and Wolf (2007, pp. 1-14) using molecular genetic analysis. After review of the available taxonomic data we conclude that *Eriogonum corymbosum* var. *nilesii* is a valid taxon that meets the definition of "species" under the Endangered Species Act (Act).

Habitat/Life History

Plants 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. Within this complex a key feature for considering the Las Vegas buckwheat a distinct variety is its marked preference for gypsum soils (Reveal 2002, p. 26). Susan Meyer (1986, p. 1308) described the Las Vegas buckwheat as a gypsocline, a species that principally occurs on gypsum but is also found on other unusual substrates such as claybeds and high-boron shales. Using soil test pits, Drohan and Buck (2006, p. 12) determined the Las Vegas buckwheat typically occurs on deeper soils than the Las Vegas bearpoppy (*Arctomecon californica*) another endemic gypsocline that shares much of the same habitat preferences and range. Typically, gypsum soil outcroppings occupied by Las Vegas buckwheat are sparsely vegetated with bare exposed soils covered with a cryptogammic soil crust. Although a specific vegetation classification for Las Vegas buckwheat habitat does not exist, it generally can be differentiated from typical Mojave creosote-bursage scrub and saltbush scrub that usually surrounds it by the presence of gypsophiles (gypsum obligate species) and other gypsoclines that occasionally share

habitat, including the Las Vegas bearpoppy, Parry sandpaper plant (*Petalonyx parryi*), Palmer's phacelia (*Phacelia palmeri*), wingseed blazing star (*Mentzelia pterosperma*) and froststem suncup (*Camissonia multijuga*) (Meyer 1986, p. 1308).

Historical Range/Distribution

Because the taxonomy of the Las Vegas buckwheat was only recently resolved in 2006, there is very little information regarding the historic range and distribution of the variety. Based on herbarium records, Las Vegas buckwheat is historically known from three locations in Clark County: Las Vegas Valley, Gold Butte, and Muddy Mountains (Service 2000, p. 9). The distribution of all known (current and historic) occurrences in southern Nevada is shown in Figure 1. Based on all records for the variety (herbarium records, surveys of undeveloped parcels in the Las Vegas Valley), the Las Vegas Valley historically contained the primary distribution of the variety. Based on U.S. Geological Survey soils mapping, there are approximately 88,000 acres of suitable soils for the variety in the Las Vegas Valley (Figure 2). However, this is likely an overestimate of the historic occurrence of the variety within the Las Vegas Valley because additional biotic and abiotic factors that regulate recruitment and reproduction (including pollination biology, seed dispersal, soil depth and local hydrology) would also limit its distribution within suitable soils. There is no information available to infer the number of plants historically present.

Population Estimates/Status and Current Range/Distribution

The Las Vegas buckwheat is geographically isolated from other varieties of *Eriogonum corymbosum* within the Mojave Desert (Reveal 2002, p. 26; Reveal 2004, p. 129). Both Reveal (2002, p. 26; 2004, p. 129) and Ellis and Wolf (2007, p. 1) describe the range of the Las Vegas buckwheat as southern Nevada, southwestern Utah, and northern Arizona. Based on herbarium specimens, Reveal (2004, p. 129) suggests the variety could be present in two additional locations outside of Nevada, the first along the floodplain of the Paria River in southern Kane County, Utah and the second at a site on Pierce Wash, in northern Mohave County, Arizona. Reveal (2002, p. 26) also indicated the variety could be present at a third location near Flagstaff in Coconino County, Arizona; however, Ellis and Wolf (2007, p. 5) determined these plants be a yellow-flowered expression of the otherwise white-flowered individuals of the variety *glutinosum*.

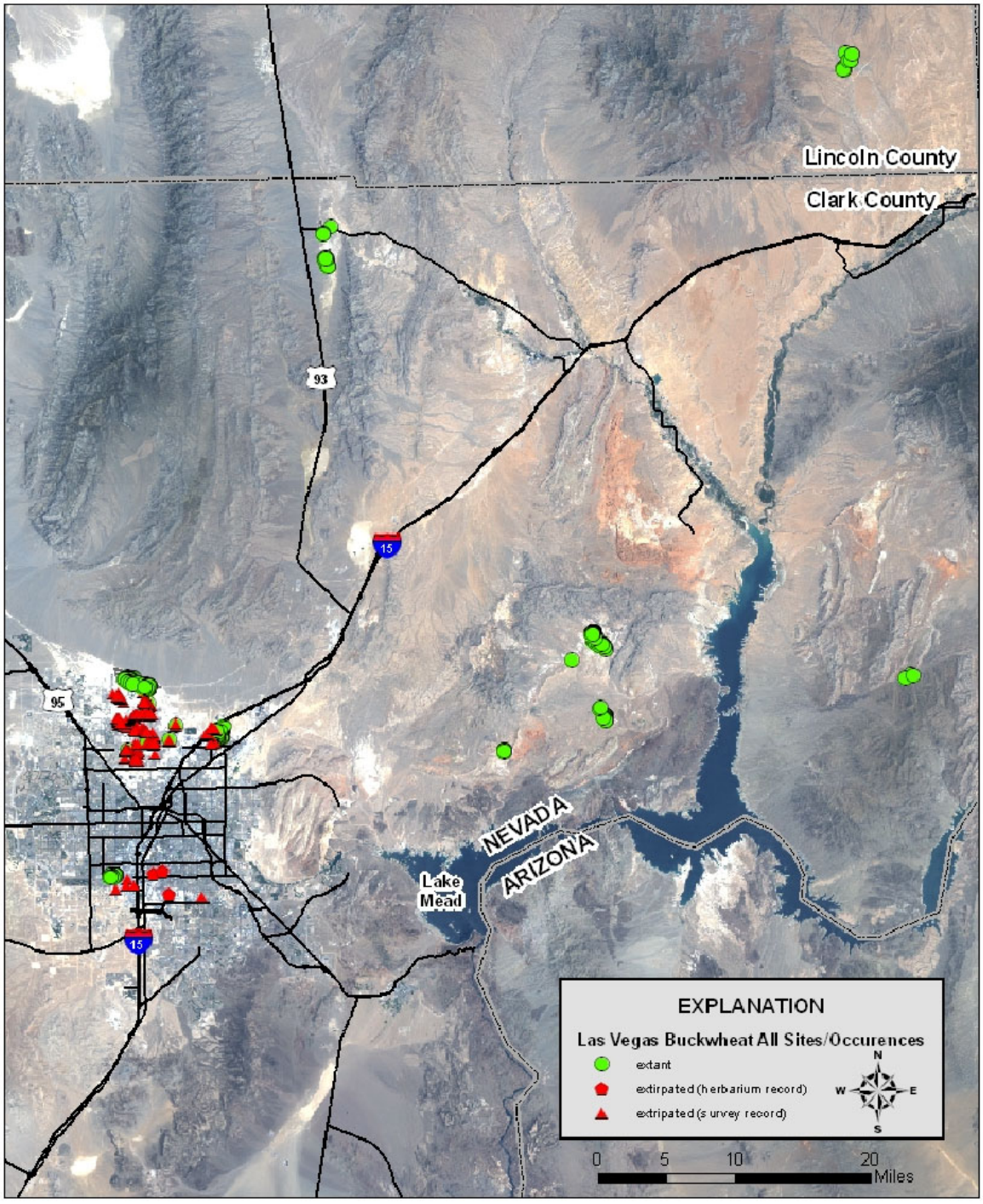

Figure 1: Known historic and current records for Las Vegas buckwheat in southern Nevada.

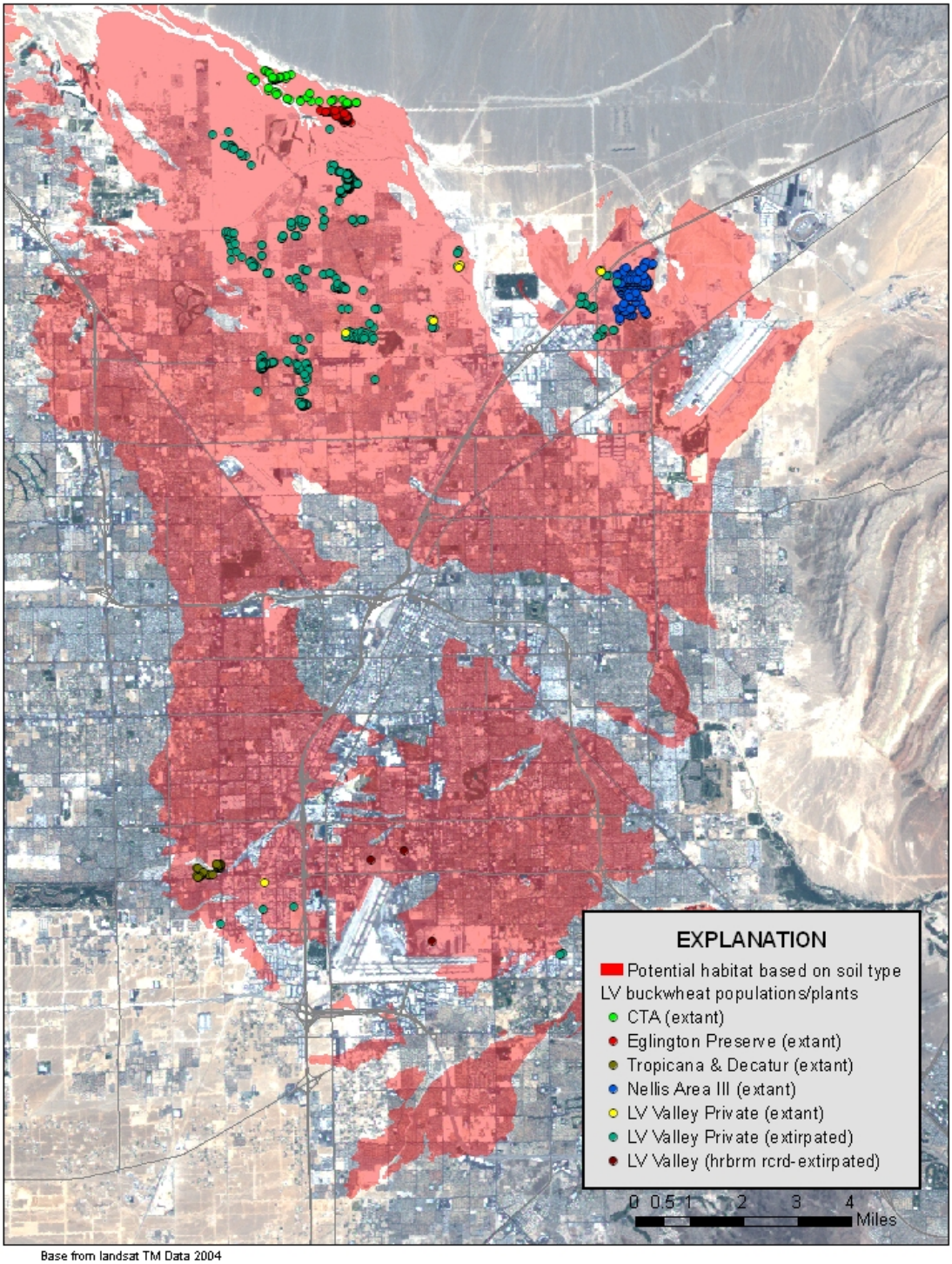

Figure 2: Potential habitat based on suitable soils mapping and records of Las Vegas buckwheat in the Las Vegas Valley.

The Kane County, Utah and Mohave County, Arizona herbarium records were not included in the Ellis and Wolf (2007) genetic analysis. Without additional field work, using herbarium records to determine the range of the Las Vegas buckwheat is problematic because herbarium records are often old (the Utah herbarium collection was made in 1978) and information on important habitat features such as the presence of gypsum soils is generally unavailable. Data from Ellis and Wolf (2007, p. 13) suggest populations in the eastern portion of the range may have a higher similarity to variety *aureum* than the Las Vegas Valley population; therefore, potential populations in Utah and Arizona could represent transitional forms between the variety *nilesii* and variety *aureum*. Until habitat information can be collected and additional genetics work can be completed on the Kane County, Utah and Mohave County, Arizona herbarium records, we conclude the current range of the variety is limited to southern Nevada.

Presently, the Las Vegas buckwheat is known from 9 populations on 1,149 acres, nearly 290 of which have been or will be developed. We estimate that 890 acres of undeveloped, occupied Las Vegas buckwheat habitat remain. The nine known, currently occupied locations are summarized in Table 1 and shown in Figure 3, and consist of the following: (1) The Upper Las Vegas Wash, which includes the Eglington Preserve and Conservation Transfer Area (CTA); (2) Nellis Air Force Base Area III (Nellis Air Force Base (AFB) Area III); (3) 35 acres of habitat distributed on 15 privately owned parcels in the Las Vegas Valley (Service 2004, pp. 1-2); (4) Tropicana/Decatur population located in the Las Vegas Valley; (5) the Muddy Mountain Wilderness; (6) Coyote Springs; (7) Gold Butte; (8) White Basin; and (9) Toquop Wash in Lincoln County.

Incomplete survey data has made estimating the total number of individual plants within the entire range of the variety difficult; however, for five of the sites that have been thoroughly surveyed, estimates total 23,566 plants (Table 1). Land management and conservation status differs within some populations and for discussion purposes are also identified in Table 1. Ellis and Wolf (2007, p. 13) suggest that the Las Vegas Valley, Toquop Wash, and White Basin occurrences were likely contiguous in the past and should be considered a single population. However, these sites (described in Table 1) are no longer contiguous. Currently, given the distances and barriers between them it is unlikely there is significant genetic exchange. Therefore, for conservation purposes, we consider each site to be a subpopulation, with the exception of private parcels in the Las Vegas Valley, which for discussion purposes, have been combined.

At this time, we are unable to determine whether or not additional populations would be found if more extensive surveys are conducted. The amount of potential habitat surveyed is not readily available and will be provided in a subsequent assessment. Clark County is undergoing an exercise to model soils and suitable habitats for the Las Vegas buckwheat, which, when complete, will provide insights into areas to target for future surveys.

Table 1: Known populations and conservation status of the Las Vegas buckwheat, as of April 2008

Subpopulation/ Location	Site Name	Land Owner	Estimated Number of Individuals	Acres of Occupied Habitat	Percent of Total Acres[1]	Percent of Remaining Acres[2]	Habitat Conservation Status
Upper Las Vegas Wash, LV Valley, Clark County	Eglington Preserve	BLM	300	59	5.13	6.61	Conserved: signed conservation agreement; however, subject to illegal OHV activity
	Park Highlands	Private	1300	92	8.00	--	Developed/ to be Developed (plants have been/will be removed)
	CTA (Conservation Transfer Area)	BLM	5,200	127	11.05	14.23	Likely Conserved: negotiations in progress, subject to recreation activity, illegal OHV activity and dumping
Nellis AFB, LV Valley, Clark County	Nellis AFB Area III (1)	DOD	unknown	233	20.27	26.11	Conservation status uncertain, subject to recreation and equestrian activity
	Nellis AFB Area III (2)	DOD	unknown	137	11.92	--	Developed/ to be Developed (plants have been/will be removed)
Undeveloped parcels (seven) present in LV Valley, Clark County (Note: 32 acres of private lands have been developed since 2004)	LV Valley (Private)	Private	unknown	3	0.26	--	Developed/ to be Developed (plants have been/will be removed)
Tropicana/Decatur Parcel, LV Valley, Clark County	Tropicana/ Decatur	BLM	366	80	6.96	8.97	Development likely, projects planned
Lovell Wash Area in the Muddy Mountains, Clark County	Muddy Mountains Wilderness	BLM	unknown	50	4.35	5.60	Conserved: BLM designated wilderness
Coyote Springs Valley, Clark County	Coyote Springs (1)	BLM	unknown	62	5.39	6.95	Not conserved: BLM ACEC for desert tortoise open to OHV activity, subject to indirect impacts from transmission line and development projects
	Coyote Springs (2)	Private	unknown	25	2.18	--	Developed/ to be Developed (plants have been/will be removed)
Gold Butte, Clark County	Gold Butte	BLM	100	7.5	0.65	0.84	Not conserved: BLM multiple use lands open to a variety of uses, including OHV activity; inadequate law enforcement.
Muddy Mountains/White Basin, Clark County	White Basin(1)	BLM	unknown	30	2.61	3.36	Not conserved: Recently purchased from U.S. Borax. BLM multiple use lands open to a variety of uses, including OHV activity.
	White Basin(2)	BLM	6,300	172	14.97	19.28	Not conserved: within a BLM Special Recreation Management Area, will be open to OHV activity; inadequate law enforcement
Toquop Wash, Lincoln County	Toquop Wash	BLM	10,000	71.8	6.25	8.05	Not conserved: BLM multiple use lands with active mining claim on site and projects planned in vicinity.
			23,566	1149.3	Total acres[1]		
				892.3	Remaining undeveloped acres[2]		

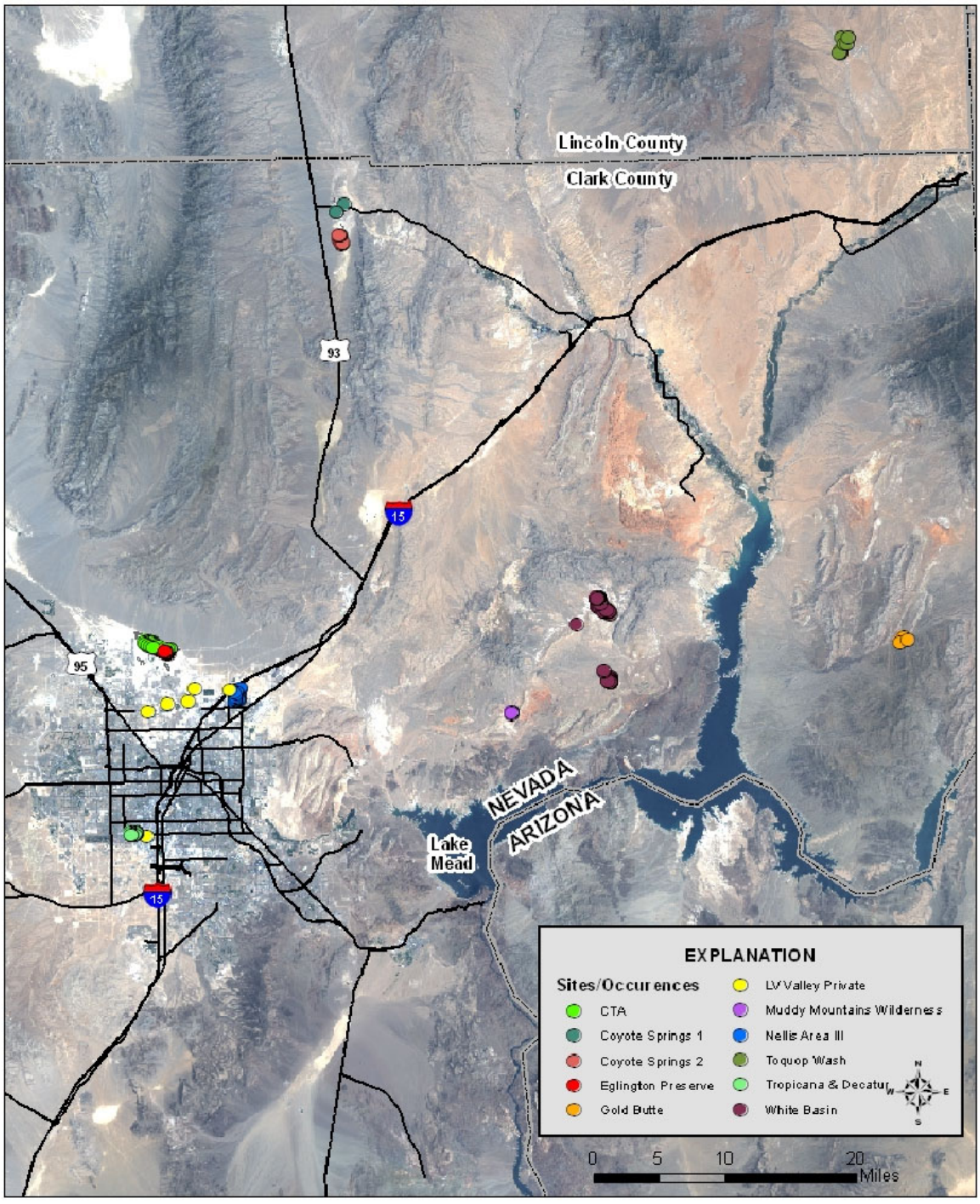

Figure 3: Geographic distribution of Las Vegas buckwheat sites described in Table 1.

THREATS

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Development of Habitat

Clark County, Nevada is one of the fastest growing counties in the United States. The population more than doubled between 1990 and 2006, increasing from 770,000 to 1.87 million people (www.nsbdc.org/what/data_statistics/demographer). Growth of Las Vegas has resulted in the loss of over 95 percent of the potential habitat of the variety. We estimate since 2004, 290 acres (roughly one quarter of the known habitat) either has been or will be developed through approved projects. This includes:

1. Ninety-two acres of the Upper Las Vegas Wash population on which development was approved during negotiations for a conservation agreement among the Service, BLM, State of Nevada Division of Forestry (NDF), and the City of North Las Vegas (see discussion under Conservation Measures Planned or Implemented);

2. One-hundred thirty-seven acres of Nellis AFB Area III that is outside of a 233-acre area that may be set aside for conservation of the Las Vegas bearpoppy (see discussion under Conservation Measures Planned or Implemented);

3. Thirty-five acres of privately owned parcels in the Las Vegas Valley that were recorded as undeveloped in 2004, but based on 2007 County Assessor records, roughly 3 acres remain undeveloped; and

4. Twenty-five acres of private land within the Coyote Springs Investment, LLC project footprint.

Presently, 3 sites including the CTA, Nellis AFB (1), and Tropicana/Decatur are at risk of development (in total, these sites constitute 49 percent of the remaining population). Although there are no specific development projects planned for the CTA and Nellis AFB (1) sites, there is economic pressure to develop all remaining open space in the Las Vegas Valley.

At this time, only the 80-acre Tropicana/Decatur parcel (8 percent of the population) is at immediate risk of development. Clark County holds an easement for a flood control detention basin (BLM case number N-55083) within approximately one-third of the parcel and a BLM Recreation and Public Purpose (R&PP) lease (BLM case number N-78796) on the entire parcel. The BLM has issued the right-of-way to construct the detention basin (Warner 2008, p. 1). Although a final Master Development Plan has not been submitted, a portion of the population may be conserved (Warner 2008, p. 1).

In October 2007, the BLM Ely District completed a draft Environmental Impact Statement for proposed design changes for the Toquop Energy Project. The design change would convert the power plant from a natural gas to a coal-fired facility and add additional access roads and rail

lines. The power plant itself would be located approximately 0.6 mile (1 kilometer) southwest of the Toquop Wash Las Vegas buckwheat population and will not directly impact individuals; however, proposed construction of access roads would bisect the population and remove individual plants. In addition, the proposed design change is anticipated to increase atmospheric nitrogen oxides and mercury deposition in the vicinity. As observed with other power plants, nitrogen deposition resulting from smoke stack emissions could also affect Las Vegas buckwheat habitat by increasing soil nitrogen. In the Mojave Desert and other portions of southwestern U.S, increased soil nitrogen is correlated with higher densities of nonnative grasses and altered fire frequencies (Brooks and Pyke 2002, pp. 2-3).

Surface Mining, Mineral Claims

Potential surface mining and mineral claims are a threat to some subpopulations of the Las Vegas buckwheat on BLM-managed lands. Gypsum soil outcroppings on which the Las Vegas buckwheat occurs can yield gypsum, an extractable mineral with commercial value. Future mineral extraction is a threat to roughly 8 percent of the remaining habitat (Toquop Wash). Another 19 percent (White Basin (2)) is also open to public minerals. The entire Toquop Wash population is located within the 160-acre Snowflake 41, 42, 45 and 46 Placer Mining Claim, established on April 14, 2005. It is likely that at some future date, the 72-acre site may be impacted by mineral extraction. Portions of the site have already been disturbed by the construction of roads to access soil test pits and the excavation of soil test pits, although very few Las Vegas buckwheat plants have been impacted (Service 2007b, p. 4).

Habitat supporting the White Basin (2) subpopulation is open to surface mining. Recently BLM re-purchased the White Basin (1) site (see discussion under Conservation Measures Planned or Implemented). As part of negotiations for the purchase, BLM agreed to make an application/petition to withdraw public minerals on these 30 acres.

Public minerals have been withdrawn on the Coyote Springs (1) and Gold Butte sites. Habitat of these populations is located within designated BLM Areas of Critical Environmental Concern (ACECs) that are temporarily closed to mineral entry. This protection will continue until November 2009 while BLM prepares an application/petition to withdraw mineral entry (see discussion under Conservation Actions Planned and Implemented).

The Muddy Mountains Wilderness subpopulation is protected from mineral withdrawal under a BLM wilderness designation by congressional action which concurrently withdrew public minerals on the site. Finally, given the urban setting, it is unlikely mineral claims will be made on the Tropicana/Decatur or Upper Las Vegas Wash subpopulations.

Recreation

Demand for recreational opportunities is increasing with Clark County's population growth. Off-highway vehicle activity accounts for the single greatest recreational use of public lands within Clark County (RECON 2000, Chapter 4, p. 70). A 2006 threats analysis for the Clark County Rare Plant Conservation Management Strategy (CMS) also described casual off-highway vehicle use and the creation of new trails as significant threats for all rare plant species on BLM lands (TNC 2007, pp. 44, 62, 80, 91, 103, 120, 132, 145, 157). In general, the impact of public recreation on Las Vegas buckwheat habitat needs further investigation; however, based on habitat observations made by the Service (Service 2007b, pp. 1-21), presently, 9 out of 10 sites with the Las Vegas buckwheat (approximately 95 percent of the remaining habitat) are already experiencing or are expected to begin experiencing some public recreational use (including off-highway vehicle activity, equestrian activity, and other recreation). Only the Muddy Mountain Wilderness population is completely protected from public recreation.

Of the sites known to be affected, public recreation is an ongoing threat at six sites (Eglington Preserve, CTA, Nellis AFB Area III (1), Tropicana/Decatur, Gold Butte, and White Basin (1 and 2) sites; approximately 80 of the remaining habitat). Recreation is expected to increase on two sites (Toquop Wash and Coyote Springs (1); 15 percent of the remaining habitat) as already approved projects are implemented. Impacts to the desert from off-highway vehicles are well documented (e.g., Webb and Wilshire 1983, pp. 1-534) and include destruction of natural soil stabilizers (cryptogammic soil crusts), soil compaction, reduced rates of water infiltration, increased wind and water erosion, and destruction of vegetation (Lovich and Bainbridge 1999, pp. 315-316). Compaction of desert soil reduces root growth of desert plants and makes it much harder for seedlings to survive (Bainbridge and Virginia 1990, pp. 3-13). Natural recovery of the desert is slow because of extreme temperatures, intense sun, high winds, limited moisture, and low fertility of desert soils (Bainbridge and Virginia 1990, pp. 3-13). Conditions suitable for plant establishment occur only infrequently or irregularly, and it may take 50 to 300 years for recovery from anthropogenic impacts (Lovich and Bainbridge 1999, p. 309). While impacts associated with public recreation within Las Vegas buckwheat habitat are serious, the severity of these impacts are typically much lower than urban development and surface mining, which permanently remove or irretrievably alter large expanses of habitat so that it can no longer support the variety.

Approximately half of the remaining Las Vegas buckwheat population is located on habitat adjacent to or within urban areas in the Las Vegas Valley. On these sites, degradation is already evident. Sites sustaining the highest resource damage include: Nellis AFB Area III (1), Eglington Preserve, CTA, and Tropicana/Decatur. In 2000, threats to the Nellis AFB Area III (1) subpopulation prompted the construction of a fence to protect the site from illegal off-highway vehicle activity and illegal dumping of construction and household debris. Area III is adjacent to military family housing and a riding stable, and in 2007, equestrian riders and newly created trails were observed within Las Vegas buckwheat habitat (Service 2007b, p. 2). Recreational use of Nellis AFB Area III (1) by DOD personnel continues to be a threat to the Las Vegas buckwheat and is expected to increase in the future because open spaces adjacent to the base available to DOD personnel for trail riding and general use are extremely limited.

The Upper Las Vegas Wash, CTA, and Eglington Preserve sites are bisected by a water line, transmission line corridor, and associated access roads. The corridor has been used by recreationists to access the area. As a result, there is an extensive network of user-defined roads and trails throughout the CTA and Eglington Preserve as well as widespread off-highway vehicle disturbance of Las Vegas buckwheat plants and habitat degradation (Service 2007b, p. 2).

The Tropicana/Decatur parcel of BLM land is surrounded by urban development. This site has sustained the heaviest resource damage, including extensive off-highway vehicle damage (Service 2007b, p. 3). The site was likely used for motocross events in the 1980s and 1990s. In addition, the Las Vegas Metropolitan Police (Las Vegas Metro) and the public regularly ride off-highway vehicles through buckwheat habitat to monitor and manage transient human populations on the parcel. Transients currently occupy the site, living in makeshift shelters and caves excavated into bluffs within Las Vegas buckwheat habitat (Service 2007b, p. 3; BLM 2007b, pp. 1-16). In fall 2007, Las Vegas Metro cleared the majority of the vegetation within the wash to improve public safety and prevent re-establishment of transient use of the area (BLM 2007b, p. 1).

Outside the Las Vegas Valley, habitat within the White Basin (1 and 2) and Gold Butte sites are at risk of damage from recreational use because both areas are within multiple-use lands that are open to off-highway vehicle activity. In the past, BLM has permitted at off-road races in the White Basin area. When approved development projects at the Toquop Wash and Coyote Springs (1) sites are complete, both Las Vegas buckwheat subpopulations will be at increased risk of off-highway vehicle impacts because of an increased presence of human activity. Immediately adjacent to the Coyote Springs subpopulation, a community with 150,000 homes is being developed. Although there will be requirements to regulate recreational use of the adjacent public lands, use is expected to increase as development proceeds. As discussed under Development of Habitat, the Toquop Wash site is adjacent to an already approved power generating project. The construction of access roads in this undeveloped area is expected to facilitate entry by off-highway vehicle users.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

We are unaware of any use of Las Vegas buckwheat for commercial purposes as this variety does not have any known commercial value. We are unaware of any scientific or recreational collection, and although some may be occurring, it is unlikely to be having a negative impact on the variety as a whole. We are unaware of any use of Las Vegas buckwheat for educational purposes.

C. Disease or predation.

There are no known diseases or predation affecting the Las Vegas buckwheat.

D. The inadequacy of existing regulatory mechanisms.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires Federal agencies to describe a proposed action, consider alternatives, identify and disclose potential environmental impacts of each alternative, and involve the public in the decision making process. The release of documents is for disclosure, and NEPA does not require or guide mitigation for project impacts. Projects that are covered by certain "categorical exclusions" are exempt from NEPA biological evaluations. Both BLM and DOD comply with NEPA for actions requiring an environmental assessment, including many projects in or near Las Vegas buckwheat habitat. Federal agencies are not required to select the NEPA alternative having the least significant environmental impacts. A Federal agency may select an action that will adversely affect sensitive species provided that these effects were known and identified in a NEPA document.

Bureau of Land Management

In 1976, Congress passed the Federal Land Policy Management Act (FLPMA) to direct the management of the public lands of the U.S. Under FLPMA, the BLM is required to draft, implement, and revise, when necessary, land use and resource management plans. The 1998 BLM Las Vegas District Resource Management Plan (RMP) includes provisions limiting off-highway activity to designated roads, trails, and dry washes. The Clark County Rare Plant CMS identified conservation measures from the RMP, including closing illegal roads and trails and enforcement of off-highway vehicle regulations as means of improving rare plant conservation on public lands. Nation-wide enforcement of off-highway vehicle restrictions on federal land is limited by the low number of law enforcement officers on staff (Gregory 2008, pp. 1-12). In southern Nevada on BLM-managed lands outside of the Red Rock Canyon National Conservation Area, there is roughly 1 officer for every 370,200 acres of the District, and several portions of the District (Moapa, Gold Butte, and Nye County) are currently limited to 1 duty officer (Marrs-Smith 2007, p. 1). The ability to regulate off-highway vehicle activity in southern Nevada is not expected to improve in the near future.

Approximately 73 percent of the remaining Las Vegas buckwheat habitat is managed by BLM, which has classified the Las Vegas buckwheat as a sensitive species. Under BLM Manual 6840.06E, policy is to provide these species with the same level of protection as BLM provides for species that are candidates for listing. Under BLM Manual 6840.06C, policy states, "BLM shall implement management plans that conserve candidate species and their habitat 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." This policy also ensures that BLM sensitive species are included in NEPA analyses for proposed projects. As a BLM special status species, impacts to the Las Vegas buckwheat may still occur and be authorized by BLM district managers.

With approximately 60 percent of land in Clark County managed by BLM, congressional actions often determine disposal boundaries, utility corridors, and other specific project boundaries as desired by local government. Recent congressional actions have authorized the transfer of BLM lands out of federal management, which has affected several sensitive species including the Las Vegas buckwheat. For instance, a 2002 amendment to the Southern Nevada Public Land

Management Act (SNPLMA) and subsequent amendments authorized disposal of BLM lands in the Las Vegas Valley, many with significant Las Vegas bearpoppy and Las Vegas buckwheat populations. In 2005, when the BLM initiated disposal of these lands, and during section 7 consultation for the desert tortoise, the Service notified BLM that this action could lead to the potential emergency listing of the Las Vegas buckwheat. As a result, the BLM initiated comprehensive planning for the CTA and a conservation agreement established the Eglington Preserve (see discussion under Conservation Measures Planned or Implemented).

Department of Defense

The DOD, with assistance from the Service, is responsible under the Sikes Act (16 USC 670a-670f, as amended) for implementing programs and management strategies to conserve and protect biological resources. The Sikes Act was amended in 1997 to include the development of mutually agreed upon Integrated Natural Resource Management Plans (INRMPs) through voluntary cooperative agreements among the DOD installation, the Service, and respective state wildlife agency. These documents used to guide landscape-level planning and management on DOD lands. Currently, the Nellis AFB INRMP does not contain specific conservation measures to protect the Las Vegas buckwheat; however, in 2009, Nellis AFB indicated that they would work with the Service and NDF to incorporate conservation measures for the species into the INRMP.

Approximately one quarter of the remaining Las Vegas buckwheat habitat is on Nellis AFB Area III (1). Currently, there is no mechanism in place to manage the area. The threat to the Nellis AFB Area III (1) subpopulation was recognized in 1998 and an attempt was made to preserve the subpopulation through the Clark County Multiple Species Habitat Conservation Plan (MSHCP) and a NDF master permit agreement for the Las Vegas bearpoppy, a species listed as critically endangered by the State and overlapping with the Las Vegas buckwheat on the site. This conservation effort did not succeed and future efforts remain uncertain.

State

The Las Vegas buckwheat is not protected by the State of Nevada, where regulations protecting plant species are administered by NDF under the direction of the State Forester. In 2001, 2002, 2003, and 2006, the Nevada Native Plant Society's Rare Plant Committee recommended inclusion of the buckwheat on the State list of critically endangered species. The State denied the earlier recommendations, and is currently evaluating the 2006 recommendation. The Las Vegas buckwheat and other rare plant species in Nevada are not included in any comprehensive management planning efforts for the State, such as the State of Nevada Wildlife Action Plan.

Local

There have been no ordinances or regulatory measures established by the local municipalities to protect the Las Vegas buckwheat. Under the Clark County MSHCE, the Las Vegas buckwheat is included as a high priority evaluation. The MSHCP defines an evaluation species as those for which additional information is required or for which sufficient management prescriptions are

unlikely to be able to be defined and implemented sufficiently to support an application for a 10(a) permit under the Act. Status as an evaluation species does not provide the variety with any regulatory protection.

E. Other natural or manmade factors affecting its continued existence.

Stochastic events

Small populations are vulnerable to stochastic effects (e.g., Shaffer 1981, p. 131; Shaffer 1987, p. 72). All nine subpopulations of the Las Vegas buckwheat are small in size, typically between 50 and 90 acres, with the largest at just over 200 acres. Fire in the Mojave Desert is the most likely stochastic event that could adversely affect the Las Vegas buckwheat, as these small populations are susceptible to being destroyed by a single, large fire. 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 federal land managers (Brooks and Matchett 2006, p. 148). Additionally, human activities in the Mojave Desert 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), whose range overlaps that of Las Vegas buckwheat. In 2005 and 2006, over 1,000,000 acres burned in the Mojave Desert, mostly fueled by invasive, non-native grasses (Service 2008, 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 (1) and Gold Butte subpopulations are in areas with a moderate risk of fire and the White Basin (1), Muddy Mountains Wilderness, CTA, and Eglington Preserve subpopulations are in areas with a low to moderate risk of fire (Rash 2007, p. 1). In these areas, fires could be a result of anthropogenic activities and the introduction of non-native grasses.

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 could 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 variety (i.e., 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 possible that a series of fires over a period of years could threaten the variety over a significant portion of its habitat.

Non-native species

Two nonnative species are present in high densities on disturbed areas within two Las Vegas buckwheat populations. Within the CTA, saltlover (*Halogeton glomeratus*) has colonized disturbed soils; while at Nellis Area III (1) 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 nor do we have sufficient information to evaluate the general threats non-native species pose to Las Vegas buckwheat. However, given the seriousness and magnitude of this threat for the Mojave Desert ecosystem, we believe this threat to the variety should be carefully monitored.

Climate change

Current climatic modeling predicts the southwestern U.S. will continue to experience regional drought in response to elevated levels of atmospheric carbon dioxide (Seager et al. 2007, pp. 1181-1184). Drought could adversely affect Las Vegas buckwheat recruitment by reducing seed germination, seedling establishment, and altering fire frequencies. At this time, we do not have sufficient information to analyze this potential threat.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED

Since 2002, five conservation measures have been completed that directly and indirectly benefit the Las Vegas buckwheat. These include (1) A conservation agreement with the City of North Las Vegas to establish the Eglington Preserve; (2) fencing installed by BLM to protect the Eglington Preserve and limit unauthorized off-highway vehicle impacts; (3) fencing installed by Nellis AFB to protect habitat within Nellis Area III; (4) BLM purchase of 30 acres of the White Basin subpopulation; and (5) BLM withdrawal of public minerals within some Las Vegas buckwheat habitat. Two additional conservation measures are being developed, and if completed, will conserve a significant portion of the remaining habitat. These efforts include the permanent protection of the CTA and the establishment of a conservation agreement for protection of the variety on the Nellis AFB Area III (1) site. However, both efforts are in planning stages; therefore, they do not currently reduce the magnitude or imminence of threats to the Las Vegas buckwheat.

Eglington Preserve

As discussed under Listing Factor D, a 2002 congressional action authorized disposal of the area containing the Upper Las Vegas Wash subpopulation of the Las Vegas buckwheat, which the Service determined could lead to the potential emergency listing of the variety. As a result, the BLM initiated comprehensive planning for the CTA and a conservation agreement established the Eglington Preserve. Through this agreement, development of 92 acres of occupied Las

Vegas buckwheat habitat was authorized in exchange for the preservation of 59 acres of habitat within the Preserve, which is adjacent to the CTA. These 59 acres represents approximately 6.6 percent of the remaining Las Vegas buckwheat habitat. While some habitat was conserved by this effort, not enough is protected for us to consider the threat posed by urban development to be diminished or eliminated across the range of the Las Vegas buckwheat.

Fencing within the Eglington Preserve and Nellis AFB Area III (1) sites

In 2006, BLM installed fencing around the Eglington Preserve to protect the site from unauthorized off-highway vehicle use and illegal dumping. This fence protects roughly one-third of the Upper Las Vegas Wash subpopulation, approximately 6 percent of the remaining population of the variety. The remaining two-thirds of the Upper Las Vegas Wash subpopulation (the CTA) remains unfenced and continues to experience extensive off-highway vehicle activity and casual recreational use (Service 2007b, p. 2). Increased recreational use and illegal off-highway vehicle activity will likely increase as development of the surrounding area continues.

In 2000, threats to the Nellis AFB Area III (1) subpopulation prompted the construction of a fence to protect the site from illegal off-highway vehicle activity and dumping of construction and household debris. During a site visit on January 3, 2007, holes in the fence were observed and illegal trespassing and dumping was evident. During a site visit four months later in April 2007, the fence was observed to be cut again and illegal dumping was continuing (Service 2007b, p. 2).

We consider both fencing projects to be important to protecting the Las Vegas buckwheat; however, considering the degree to which the variety remains vulnerable across its range, we do not consider the threat posed by recreation and illegal dumping to be alleviated by these measures.

White Basin Purchase and BLM Withdrawal of Minerals Claims

In August 2007, BLM re-purchased approximately 30 acres of land owned by U.S. Borax, which support the White Basin subpopulation (Leiber 2008, p. 1). This property contains roughly 3.36 percent of the remaining Las Vegas buckwheat habitat. Approximately 19 percent of the remaining habitat (White Basin (2)) remains open to new surface minerals claims. A stipulation within the purchase agreement will prevent future minerals claims on these newly acquired lands; however, this purchase will not fully protect the variety because it is within a special recreation management area that is open to off-highway vehicle activity.

Under a 2002 amendment to the SNPLMA, public minerals were withdrawn for a period of 5 years from all ACECs within the Las Vegas District. Two populations of Las Vegas buckwheat, Coyote Springs (1) and Gold Butte, are within ACECs established for the desert tortoise. The mineral withdrawal expired in November 2007, but was extended for an additional 2-year period while a petition/application to continue this protection for a 20-year period is being processed. This withdrawal would continue protection on roughly 8 percent of the remaining population of

the variety from surface mining.

Combined, these conservation efforts are an important; however, given the percentage of the Las Vegas buckwheat habitat currently open to new minerals claims, we do not believe these efforts are sufficient to remove the threat posed by surface mining across the range of the variety.

BLM CTA and Nellis Area III (1) Conservation Planning

Two conservation actions are in the planning stages. These efforts include the permanent protection of the CTA and the establishment of a conservation agreement on Nellis AFB Area III (1) site.

In 2005, BLM initiated comprehensive planning for the CTA. A supplemental environmental impact statement to establish the CTA to protect paleontological resources, archeological resources, mesquite-acacia woodland, the Las Vegas bearpoppy, and Las Vegas buckwheat is being prepared. The BLM is also analyzing various alternative boundaries for the CTA. The majority of alternatives being considered include provisions to permanently protect the Las Vegas buckwheat subpopulation at the CTA; however, the size of a "buffer" (area of protection from adjacent development and uses) is uncertain as is the configuration of roads, utility lines, and infrastructure in and adjacent to Las Vegas buckwheat habitat. The BLM expects to make the preferred alternative available for public comment in 2009. Regardless of the final configuration selected, the CTA and Eglington Preserve together is expected to conserve 186 acres, just over half of the Upper Las Vegas Wash subpopulation as it was mapped in 2002. This is roughly 16 percent of the currently occupied habitat and 21 percent of the overall remaining known, undeveloped habitat.

Efforts have been made to permanently protect the Las Vegas buckwheat habitat within Nellis AFB Area III through State regulatory mechanisms that protect the Las Vegas bearpoppy; however, the outcome of these efforts is uncertain. Communications between the Service, NDF, and DOD indicate that DOD is not willing to commit to conservation actions through a formal agreement that would restrict land use for Defense-related purposes in Las Vegas buckwheat habitat within Area III. However, Nellis AFB is willing to incorporate protective measure into their INRMP. If these conservation efforts are successful, they will protect roughly 26 percent of the remaining Las Vegas buckwheat habitat and will represent a significant contribution to overall conservation of the variety.

Because no formal agreements have been fully executed for either site and there are currently no assurances that these efforts will be implemented, we find that these measures do not reduce the magnitude or imminence of the threat posed by the development across the range of the Las Vegas buckwheat.

SUMMARY OF THREATS (including reasons for addition or removal from candidacy, if appropriate)

With regard to factor A, the historic center of the variety's distribution is the Las Vegas Valley.

Roughly 95 percent of the habitat within the historic distribution has been altered, primarily by various forms of human development and is now considered unsuitable habitat for the Las Vegas buckwheat. Las Vegas is one of the nation's fastest growing metropolitan areas. Since 2004, roughly 26 percent of the habitat has been destroyed or modified by urban development, leaving about 890 undeveloped. Of this remaining acreage, approximately 57 percent (including the Toquop Wash, Tropicana/Decatur, CTA, and Nellis AFB Area III (1) sites) are at risk of development and surface mining. The Tropicana/Decatur site is at immediate risk, and in light of continued population growth in southern Nevada, securing conservation assurances at the remaining sites is imperative.

Conservation efforts are underway to protect the CTA and Nellis AFB Area III (1) sites from development; however, these efforts are in various stages of development and are not serving to reduce the magnitude or imminence of the threat posed by development across the range of the Las Vegas buckwheat. Approximately 80 percent of the remaining Las Vegas buckwheat population (including the Eglington Preserve, CTA, Nellis AFB Area III (1), Tropicana/Decatur, Gold Butte, and White Basin (1 and 2) sites) is currently threatened by ongoing public recreation, especially off-highway vehicle activity. The degree of impact is different for each site with only some sites experiencing a high level of use. Fencing has been installed at two sites to limit dumping and illegal recreational use; however, these efforts are not sufficient to reduce the magnitude or imminence of the threat posed by recreation across the range of the Las Vegas buckwheat.

Regarding factor D, the Las Vegas buckwheat is not protected by the State of Nevada, nor is it protected locally by municipalities or through the Clark County MSHCP. The variety is not protected on DOD lands by an INRMP or any regulatory mechanisms to deter illegal recreational activity and dumping in Area III at Nellis AFB. The Las Vegas buckwheat has status as a BLM sensitive species; however, this status does not offer full protection. The occurrence of Las Vegas buckwheat was not considered in various congressional actions that transferred lands out of public ownership for development purposes. Its status as a candidate will ensure that the Las Vegas buckwheat is included in NEPA planning for Federal projects; however, NEPA is a primarily a disclosure process and impacts to species may still occur.

Regarding factor E, the remaining nine subpopulations of the Las Vegas buckwheat are all less than 200 acres in size, typically between 50 and 90 acres. These subpopulations are small in size and therefore vulnerable to stochastic events, such as fire. Both the frequency and size of fires in the Mojave Desert have increased as a result of the introduction of non-native grasses and anthropogenic activities and have to potential to have devastating effects on the Las Vegas buckwheat.

We have reviewed and evaluated the five listing factors with regard to the status of the Las Vegas buckwheat. The Service considers a candidate species to be one for which we have on file sufficient information on biological vulnerability and threats to support a proposal to list as endangered or threatened, but for which preparation and publication of a proposal is precluded by higher priority listing actions. Based upon the information in our files, we find that there is sufficient information with regard to factors A, D, and E to conclude that the Las Vegas

buckwheat meets the definition of a candidate. We find that the Las Vegas buckwheat is warranted for listing throughout all of its range, and, therefore, it is unnecessary to analyze whether it is threatened or endangered in a significant portion of its range.

RECOMMENDED CONSERVATION MEASURES

These conservation measures are preliminary and have not yet been reviewed or developed in cooperation with other State and agencies, but will be discussed with these partners in the near future, and thus may be modified:

- Complete pending conservation actions including formal establishment of the CTA in the Upper Las Vegas Wash to protect the variety from development and associated infrastructure, and a conservation agreement with DOD Nellis AFB to preserve a 233-acre portion of Area III.
- Develop and implement measures to preserve habitat on the Tropicana/Decatur site.
- Extend regulatory protection to Las Vegas buckwheat populations under State law and/or the Clark County MSHCP.
- Work to better understand and remove recreation impacts (e.g., off-highway vehicle impacts) through increased law enforcement and/or trail closures and fencing to completely remove off-highway vehicle use of occupied Las Vegas buckwheat habitat.

LISTING PRIORITY

THREAT			
Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6*
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: The magnitude of threats to the Las Vegas buckwheat is considered high based on its limited distribution, small subpopulations, and a lack of comprehensive conservation measures. The primary threats to the Las Vegas buckwheat include habitat destruction or modification from development and recreation (factor A), and inadequate regulatory mechanisms (factor D). Potential urban development and surface mining of the remaining Las Vegas Valley subpopulations together threaten roughly 57 percent of the remaining undeveloped habitat. Recreation, particularly off-highway vehicle activity, threatens roughly 80 percent of the remaining habitat. The BLM's ability to enforce existing off-highway vehicle restrictions within Las Vegas buckwheat habitat is presently hampered by limited budgets and staff. Without a coordinated conservation approach, these threats will continue to play a role in the tenuous status of this variety.

Imminence: Overall, the threats are not considered imminent at this time. However, in our analysis we determined the Las Vegas buckwheat is facing a combination of imminent and non-imminent threats. Non-imminent threats include urban development and inadequate regulatory mechanisms. Imminent threats include ongoing recreation. We are unaware of specific development projects that would affect the Las Vegas buckwheat populations on the CTA and Nellis AFB Area III (1) sites. Although implementation of conservation actions on these sites are not complete, we conclude there is only the potential for development of these populations and the threat is non-imminent. Likewise, there is only a potential, non-imminent threat of mining at the Toquop Wash site because the holder of the mining claim has not presented a mining plan to the BLM. Only for the Tropicana/Decatur site, which represents 8 percent of the population, do we have information regarding plans to develop the site.

We determined inadequacy of regulatory mechanisms to be a non-imminent threat to the Las Vegas buckwheat. Both BLM and DOD have regulatory mechanisms that offer some protection; however, enforcement is limited by staffing and budget constraints. Given these limitations, some impacts to Las Vegas buckwheat have occurred, but in most cases, impacts to Las Vegas buckwheat have been implemented with conservation and impact minimization measures (such as establishing the Eglington Preserve, and the salvage and translocation of individual plants). In addition, BLM and DOD have both attempted to limit recreation by fencing Las Vegas buckwheat habitat (while these efforts have not been entirely successful, these efforts demonstrate some agency commitment to conserve the variety). The net effect is that the existing regulatory mechanisms and conservation efforts, such as NEPA and having BLM sensitive species status, have slowed, rather than stopped the destruction of Las Vegas buckwheat habitat.

We have specific information in our files that leads us to believe recreation poses a threat on the Eglington Preserve, CTA, Nellis AFB Area III (1), Tropicana/Decatur, Gold Butte, and White Basin (1 and 2) sites). Together these represent 80 percent of the remaining population. This represents a significant proportion of the population. Therefore, we conclude the threat posed by ongoing or increased recreation is imminent.

Because the Las Vegas buckwheat is facing a combination of imminent and non-imminent threats, we considered the contribution and potential effects of each threat to the overall status of Las Vegas buckwheat as well as the number of present, proposed, and future projects within Las Vegas buckwheat habitat. We consider the threat posed by development (non-imminent) to be the most important (of highest magnitude) to the Las Vegas buckwheat, because urban development results in a permanent loss of habitat. We consider the threat posed by recreation (imminent) to be of less magnitude than development. We reached this conclusion because the effects (1) may not be permanent; (2) generally result in a gradual versus immediate decline in habitat quality; and (3) are not uniform across sites (i.e., the Tropicana/Decatur site (8 percent of the population) is the most degraded from recreation). We consider inadequacy of regulatory mechanisms (non-imminent) to be of similar magnitude as recreation. Finally, we considered the number of specific planned or proposed projects that could affect the Las Vegas buckwheat and its habitat; only one site, Tropicana/Decatur, is immediately threatened. Based on this reasoning we have determined that non-imminent best describes the overall threats facing Las Vegas buckwheat.

___ Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed? Yes.

Is Emergency Listing Warranted? No.

While the Tropicana/Decatur subpopulation is at immediate risk of development and important conservation actions remain incomplete, the immediate loss of a significant portion of the Las Vegas buckwheat population is unlikely.

DESCRIPTION OF MONITORING

Currently, there is no formal monitoring program for the Las Vegas buckwheat throughout its range. Monitoring the threats and status of populations will continue by Service and BLM botanists as funds, workloads, and staff time permit.

COORDINATION WITH STATES

Indicate which State(s) (within the range of the species) provided information or comments on the species or latest species assessment:

At present, the entire range of the Las Vegas buckwheat is presumed to be in Nevada. Nevada currently does not extend regulatory protection to the Las Vegas buckwheat. This assessment has been provided to NDF and the Nevada Natural Heritage Program.

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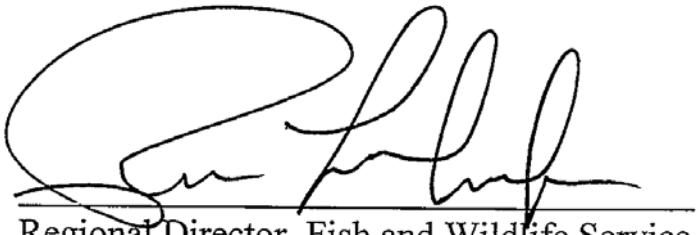
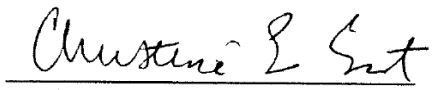
APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve:  6/15/09

Regional Director, Fish and Wildlife Service Date



Acting
Director, Fish and Wildlife Service

Concur: Date October 29, 2009

Do not concur: _____

Director, Fish and Wildlife Service Date

Director's Remarks:

Date of annual review: April 2009

Conducted by: Janet Bair