

LAS VEGAS BEARPOPPY AND LAS VEGAS BUCKWHEAT INVENTORY

FINAL PROJECT SUMMARY REPORT

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Acronyms and Abbreviations

DCP	Desert Conservation Program
GPS	global positioning system
GIS	geographic information system

Las Vegas Bearpoppy and Las Vegas Buckwheat Inventory Final Project Summary Report

Executive Summary

Surveys for two rare plant species, Las Vegas bearpoppy (*Arctomecon californica*) and Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) were conducted for the Clark County Desert Conservation Program (DCP) at 36 survey sites in the Gold Butte Geographic Unit in Clark County, Nevada. The surveys were conducted between April and June 2009 using standardized data collection protocols, and resulted in the observation of five Las Vegas bearpoppy populations, and no Las Vegas buckwheat populations. Two of the observations were made within designated survey areas, and the remaining three observations were made incidentally (e.g., when traveling to or from a designated survey area). Both target species are perennial and have distinctive habitats and/or growth forms; factors that make the survey results very reliable.

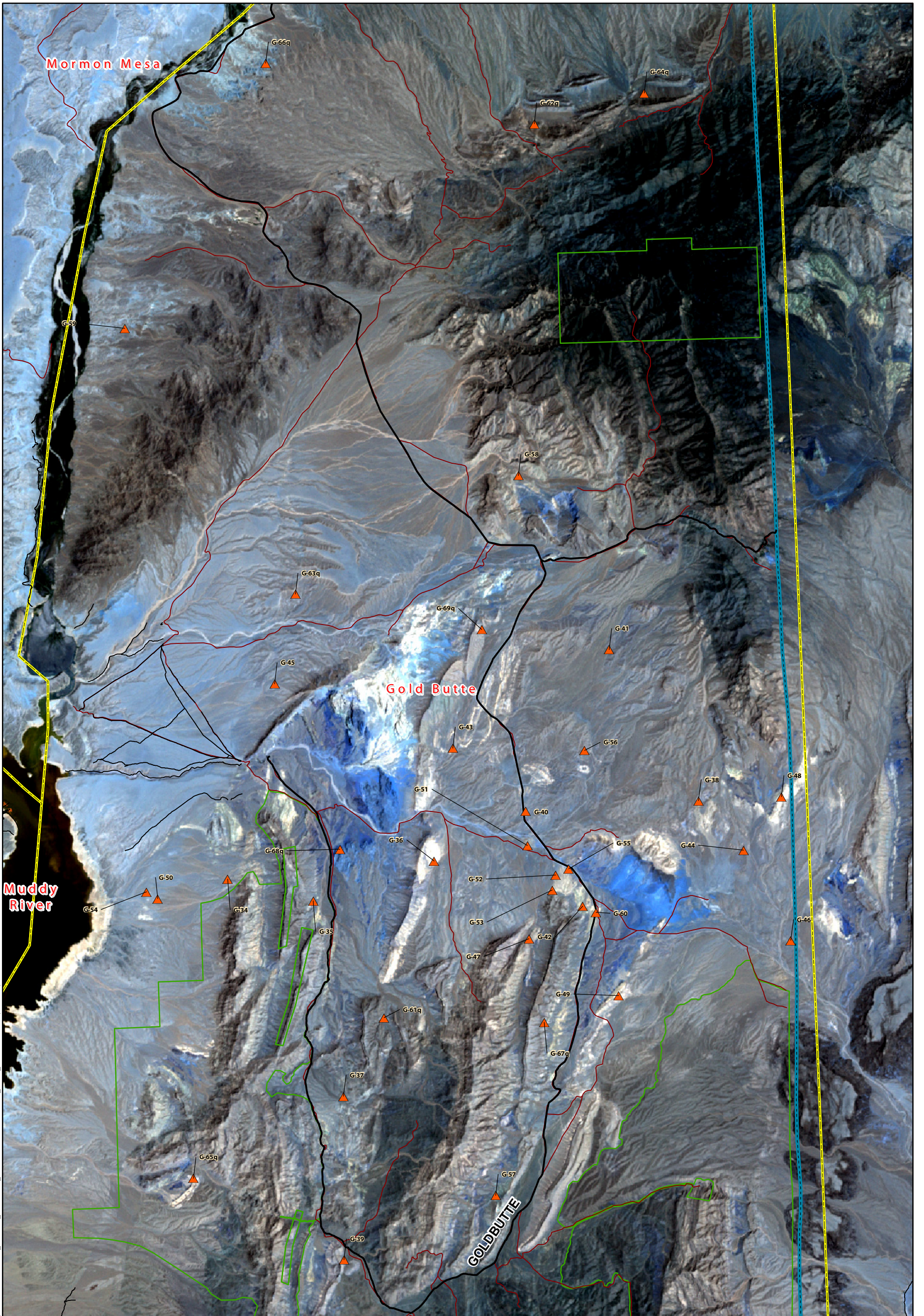
Introduction

Under contract with the DCP, ICF Jones & Stokes (ICF) conducted surveys for two rare plant species in Clark County, Nevada. The goal of the surveys was to determine the presence or absence of Las Vegas bearpoppy and Las Vegas buckwheat and to identify the habitat characteristics at 36 specified survey plots in the Gold Butte Geographic Unit (Figure 1). The surveys were designed to obtain new location and ecological information on the species to further define their predictive ecological models. This document describes the methods and resources necessary to complete the survey project and summarizes the results of the surveys.









Methodology

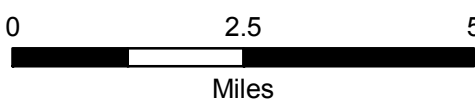
Site Selection

The DCP is developing a predictive ecological model for Las Vegas buckwheat and Las Vegas bearpoppy. Based on the parameters of that model, a total of 36 sites; twenty-seven four-hectare (approximately ten acres) plots and nine visual observation plots, were randomly selected for the survey by the DCP project manager. Sites were generally screened for accessibility (ensuring proximity to a road or trail) and appropriateness. Sites which were determined to be difficult to access because of very steep topography were assigned “visual observation only” status, meaning that standardized transects were not used.



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 Survey Plots	 Freeway	 County Boundary
 Geographic Units	 Major Roads	 Wilderness Areas
	 Roads	
	 BLM Roads	



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Miles

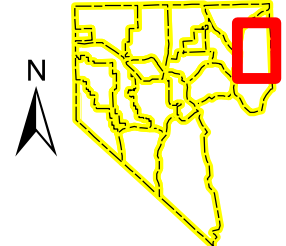


Figure 1
Las Vegas Buckwheat and Las Vegas Bearpoppy Survey Plots

Survey Protocol Development

A standardized field survey protocol and Work Plan (ICF Jones & Stokes 2009a) were developed prior to starting the project. The field survey protocol included standardized field data forms (developed specifically for the project), a custom Global Positioning System (GPS) data dictionary, and instructions for interpreting and recording ecological information. Information collected in the data dictionary and on field survey forms included standard survey information such as the names of the surveyors, the survey plot number, the date, etc. Additional information on dominant and associate plant species, soils, minimum and maximum slope, threats, population size, aspect, and the presence of invasive plant species was also recorded. The Work Plan (ICF Jones & Stokes 2009) prepared for the project described all of the information to be collected and described the appropriate interpretation of each item.

Training sessions were held in early April 2009, prior to beginning surveys, to ensure that all personnel were recording information in a similar manner and according to the standardized protocol.

Field Surveys

Teams of botanists (2 botanists per team) conducted field surveys beginning in April 2009. Teams approached each survey plot as close as possible using open roads, and then traveled on foot to each survey plot. A Trimble Geo-XT or Geo-XM GPS unit, loaded with the project specific data dictionary, was assigned to each survey team. Data collected during the surveys was recorded using the Trimble GPS units as well as on paper field data forms (which mirrored the information collected in the GPS data dictionary). Teams recorded their survey route to and from each plot (their tracks), any Las Vegas bearpoppy or Las Vegas buckwheat encountered within and outside of the survey plot, as well as photographs of each survey plot.

In general, each survey plot was surveyed by a team comprising one lead botanist (experienced in the area) and one assistant botanist (with less experience in the area). The teams navigated to a corner of a plot and then surveyed the plot systematically using transects spaced approximately 30 feet apart. Where topography did not allow 30-foot transect spacing, the teams surveyed with the topography, covering the entire survey plot to ensure detection of any target plant species within the plot. For survey plots identified by Clark County as “visual observation only,” surveys were conducted by covering as much of the area as the topography allowed and safety dictated. Any areas that were not accessible were scanned from a distance using binoculars. Each team tracked their survey route (going to the survey plot and coming back from it) using the GPS unit using the “between feature tracking” setting on the GPS unit, a feature which records the position of the unit at all times, and allows production of an accurate survey map. In addition to completing the GPS data dictionary at each survey site, data was recorded on field data forms. Additionally, the teams recorded representative photographs of each survey plot. Incidental occurrences of Las Vegas bearpoppy and Las Vegas buckwheat (i.e., observations made while traveling to or back from a survey plot) were recorded in addition to any occurrences within the boundaries of the 36 survey plots.

Data Processing and Delivery

A Data Management Plan (ICF Jones & Stokes 2009b) was developed for the project, which specified how GPS data would be collected, processed, checked for accuracy, and ultimately delivered to Clark County. GPS data collected in the field was downloaded every day and was provided to a Geographic Information System (GIS) specialist for processing.

GPS data was geo-corrected in the office, saved in a master file geo-database, and validated using a quality control/quality assurance process. Data was delivered to Clark County via CD. Complete metadata was provided with the final data deliverable.

Results

Field surveys were initiated on April 20, 2009 and concluded on June 26, 2009, a period of approximately two months. A total of 22 field survey days were required to complete the project. A summary of the survey results for Las Vegas Bearpoppy and Las Vegas buckwheat is provided below.

Las Vegas Bearpoppy

Las Vegas bearpoppy was located five times during the surveys. It was recorded two times within the survey plot, and three times incidentally when traveling to or from the survey plot. Representative photographs of Las Vegas bearpoppy observed during the surveys are provided in Appendix A. Population size ranged from 0.1 acre to over 5 acres (estimated). Nearly all occurrences had evidence of trails and all had areas of very steep and variable topography. Other rare plants (see below) were commonly encountered as associates of Las Vegas Bearpoppy.

Las Vegas Buckwheat

Las Vegas buckwheat was not located during the surveys despite observations of this species on an adjacent project.

Other Rare Plants

Although not the focus of this project, several other rare plant species were also located during the field surveys, including Palmers phacelia (*Phacelia palmeri*), Parish phacelia (*Phacelia parishii*), sticky buckwheat (*Eriogonum viscidulum*), and silverleaf sunray (*Enceliopsis argophylla*).

Conclusion and Recommendations

Both Las Vegas buckwheat and Las Vegas bearpoppy are perennial species and therefore are not as sensitive to the amount and timing of rainfall events as some other annual desert rare plant species that occur in Clark County. Las Vegas bearpoppy is typically very showy, especially during the spring months, making it difficult to miss during surveys. Las Vegas buckwheat is also somewhat showy, although flowering does not occur until later in the fall. Its vegetative form, although not

showy, is somewhat unique to the area, tending to “stand out” from other shrubs. Although not a part of this study, Las Vegas buckwheat was located in the Gold Butte unit as part of another study by some of the same botanists conducting surveys for this project. In conclusion, the survey results from this study should be considered very reliable for both species given this information.

In general, the methods employed to implement this project worked very well. The 30-foot transect spacing implemented as part of the project is more than adequate to detect both Las Vegas bearpoppy and Las Vegas buckwheat and could be increased to 50 or even 75 feet, which would allow for a larger survey area, if the focus was only on these two species. No additional recommendations relating to the survey are evident at this time.

Literature Cited

ICF Jones & Stokes. 2009a. *Las Vegas Bearpoppy and Las Vegas Buckwheat Inventory Work Plan*. April. (ICF J&S Project 00271.09.) Sacramento, CA. Prepared for: Clark County Desert Conservation Program, Nevada.

ICF Jones & Stokes. 2009b. *Las Vegas Bearpoppy and Las Vegas Buckwheat Inventory Data Management Plan*. April. (ICF J&S Project 00271.09.) Sacramento, CA. Prepared for: Clark County Desert Conservation Program, Nevada.

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Appendix A
Photographs



Las Vegas bearpoppy occurrence.



Las Vegas Bearpoppy individual plant.



Las Vegas bearpoppy flower.



Close-up of hairs on the leaves of Las Vegas bearpoppy.