

**FINAL ECONOMIC ANALYSIS OF  
PROPOSED CRITICAL HABITAT DESIGNATION  
FOR THE LANE MOUNTAIN MILK-VETCH**

Prepared for:

Division of Economics  
U.S. Fish and Wildlife Service  
4401 N. Fairfax Drive  
Arlington, VA 22203

Prepared by:

Industrial Economics, Incorporated  
2067 Massachusetts Avenue  
Cambridge, MA 02140

Send comments on the economic analysis to:

Field Supervisor  
Ventura Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
2493 Portola Road, Suite B  
Ventura, CA 93003

April 2005

## TABLE OF CONTENTS

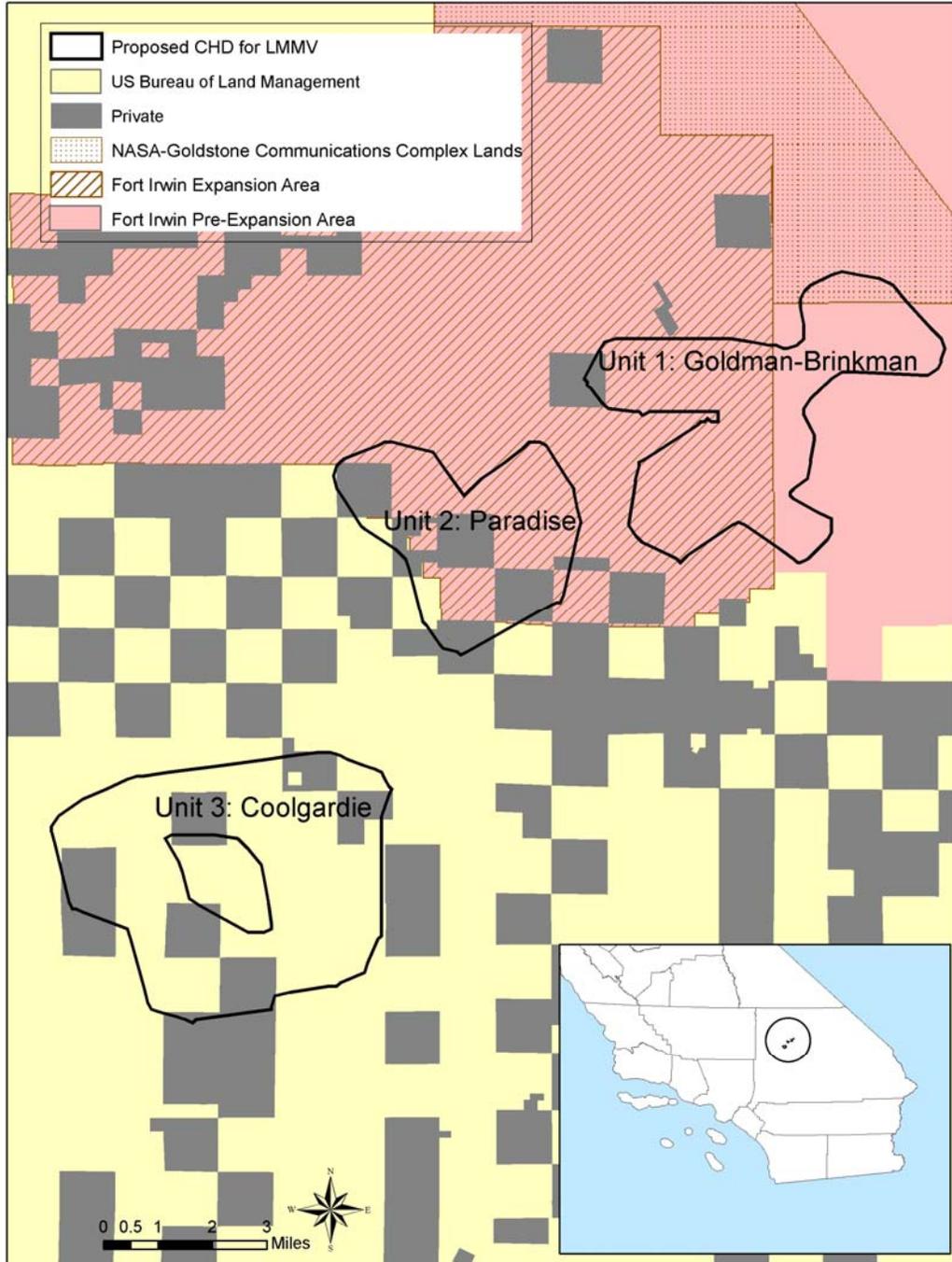
<b>EXECUTIVE SUMMARY</b> .....	ES-1
<b>SECTION 1: FRAMEWORK FOR THE ANALYSIS</b> .....	1-1
1.1 Approach to Estimating Economic Effects.....	1-2
1.2 Scope of the Analysis .....	1-5
1.3 Analytic Time Frame .....	1-9
1.4 Information Sources.....	1-9
<b>SECTION 2: BACKGROUND</b> .....	2-1
2.1 Species and Designation .....	2-1
2.2 Land Use Activities in the Proposed CHD .....	2-6
<b>SECTION 3: SOCIOECONOMIC PROFILE</b> .....	3-1
3.1 Economic Profile of San Bernardino County .....	3-1
3.2 Economic Activities in Critical Habitat Region .....	3-4
<b>SECTION 4: ECONOMIC IMPACTS</b> .....	4-1
4.1 Pre-Designation Impacts of Proposed CHD Associated with Fort Irwin .....	4-5
4.2 Other Pre-Designation Impacts of Proposed CHD .....	4-19
4.3 Post-Designation Impacts of Proposed CHD.....	4-28
<b>REFERENCES</b> .....	R-1
<b>APPENDIX A: Analysis of Impacts to Small Businesses or Energy Markets</b> .....	A-1
A.1 SBREFA Analysis .....	A-1
A.2 Potential Impacts to the Energy Industry.....	A-5

## EXECUTIVE SUMMARY

1. The purpose of this report is to assess the potential economic impacts associated with the designation of critical habitat for the Lane Mountain milk-vetch (LMMV) (*Astragalus jaegerianus*) as proposed by the U.S. Fish and Wildlife Service (Service). This analysis is consistent with the designation as described in the proposed rule. As such, this analysis does not reflect potential changes to the proposed critical habitat designation (CHD) in the final rule. Description of the critical habitat in the final rule may consequently differ from that presented in this analysis. This report was prepared by Industrial Economics, Incorporated for the Service.
2. The LMMV is a short-lived perennial plant that occurs within the West Mojave Desert in San Bernardino County, California, north of the City of Barstow. The entire known range of the LMMV occurs within an area of land approximately 16 miles in diameter. In 1998 the LMMV was listed by the Service as endangered due to threats from military training activities, dry wash mining, recreational off-highway vehicle (OHV) use, and stochastic events. In April of 2004, the Service proposed to designate critical habitat for the LMMV. This report was prepared by Industrial Economics, Incorporated for the U.S. Fish and Wildlife Service (Service).
3. Exhibit ES-1 provides a map of the proposed designation area. As illustrated on the map, the proposal comprises 3 units. Approximately 96 percent of the 9,906 acres in Unit 1 (Golstone-Brinkman Unit) is currently owned by the Department of Defense (DOD) National Training Center. The DOD has already begun to acquire the remaining lands within Unit 1, and the Unit will be completely under DOD ownership when the acquisition is complete. Further, the DOD owns the northeastern portion of Unit 2 (Paradise Unit), approximately 84 percent of the 6,828 acres. The Bureau of Land Management (BLM) owns the southwestern portion of Unit 2 and 71 percent of the 12,788 acres of Unit 3 (Coolgardie Unit). All three units are interspersed with small parcels of land under private and State ownership that will be purchased by the DOD beginning in 2004. In total, the DOD owns 52 percent of the total proposed critical habitat lands, and the BLM owns another 32 percent. Additionally, 15 percent are privately owned and approximately one percent is under State ownership.

EXHIBIT ES-1

PROPOSED CRITICAL HABITAT  
FOR THE LANE MOUNTAIN MILK-VETCH



4. Section 4(b)(2) of the Endangered Species Act (Act) requires the Service to designate critical habitat on the basis of the best scientific data available, after taking into consideration the economic impact, and any other relevant impact, of specifying any particular area as critical habitat. The Service may exclude areas from critical habitat designation when the benefits of exclusion outweigh the benefits of including the areas within critical habitat, provided the exclusion will not result in extinction of the species.

### **Results of the Analysis**

5. This analysis captures costs of LMMV conservation efforts associated with the areas proposed for CHD; "pre-designation" refers to impacts occurring from the time of listing to final designation as proposed, and "post-designation" refers to impacts occurring within 20 years of the time of final designation as proposed. Exhibit ES-2 summarizes the quantitative results of this analysis. As the exhibit shows, estimated pre-designation costs of the proposed rule range from \$2.23 million to \$2.75 million dollars. Total post-designation costs of the proposed rule are expected to range from \$4.61 million to \$10.82 million. In present value terms applying a seven percent discount rate, these post-designation costs of the proposed rule are \$2.93 million to \$6.22 million, or \$277,000 to \$587,000 on an annualized basis.<sup>1</sup>
6. It is important to note that with respect to impacts on Fort Irwin lands, this analysis focuses on the direct costs associated with LMMV conservation. It does not make any determination regarding impacts to military readiness. Approximately 15,000 acres of land are proposed for CHD for the LMMV on Fort Irwin lands; roughly 4,000 of these acres have been proposed as LMMV conservation areas, resulting in the proposed designation of approximately 11,000 acres of critical habitat for the LMMV outside of the proposed conservation areas. The DOD plans to conduct military training activities on a portion of these lands outside of the proposed conservation areas and has expressed concern that the designation of critical habitat on these lands will have a negative impact on the military's ability to train.<sup>2</sup>

---

<sup>1</sup> "Present value" terms are often used to compare economic costs incurred in different time periods. The present value is the discounted value of a payment or stream of payments to be made in the future. That is, it is the sum of a series of future cash flows expressed in today's dollars.

<sup>2</sup> The DOD does not anticipate any negative impact on training activities as a result of setting aside the proposed LMMV conservation areas. The DOD has stated, however, that it anticipates constraints to military training and subsequent impacts to military readiness as a result of designating critical habitat at Fort Irwin outside of these conservation areas. (Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004, October 15, 2004, and October 18, 2004.)

**EXHIBIT ES-2: ECONOMIC IMPACTS ASSOCIATED WITH CONSERVATION MEASURES  
FOR THE LMMV IN AREAS PROPOSED FOR CHD**

<b>Cost Category</b>	<b>Total Estimated Section 7 Costs</b>
<i>Pre-designation Costs of Proposed Rule (1998-2004)</i>	<i>\$2.23 million to \$2.75 million</i>
<i>Post-designation Costs of Proposed Rule (2005-2025)</i>	<i>\$4.61 million to \$10.82 million</i>
Present Value (7% discount rate)	\$2.93 million to \$6.22 million
Annualized Costs (twenty years)	\$277,000 to \$587,000
Present Value (3% discount rate)	\$3.72 million to \$8.34 million
Annualized Costs (twenty years)	\$351,000 to \$787,000

Notes: Costs known to occur in specific years are discounted accordingly.

7. The pre-designation costs of the proposed rule summarized in Exhibit ES-2 are associated with two major efforts:

- First, LMMV conservation measures associated with the military maneuver training land expansion at Fort Irwin account for approximately 82 percent of the total estimated pre-designation costs. Economic impacts associated with this effort included: species surveys, boundary surveys, development and fencing of conservation areas, implementation of endangered species education programs, monitoring and maintenance of the conservation areas, and administrative costs. Acquisition of private lands outside of the boundaries of Fort Irwin to be placed under BLM management is also associated with this effort. To date, 200 acres of private lands have been purchased in the Paradise Unit and 2,300 acres in the Coolgardie Unit. The remaining 1,807 acres of private land in these units will be purchased over the next several years and are therefore included in the estimate of post-designation costs.
- Second, development and implementation of the West Mojave Plan (WMP), a multiple species habitat conservation plan and amendment to the California Desert Conservation Area (CDCA) Plan, by the BLM and San Bernardino County accounts for another 16 percent of estimated pre-designation impacts. Costs associated with this effort include: administrative costs of developing the WMP, surveys of all roads within the project area, road closures, and increasing law enforcement and monitoring staff within the project area. BLM will also conduct validity exams on existing mining claims in its lands within the WMP area. This plan also proposes to designate all LMMV habitat outside of the Fort Irwin boundaries as Areas of Critical Environmental Concern (ACECs). As noted above, the DOD proposes to assist with acquisition of the remaining private land parcels that are interspersed within the BLM lands but these land purchases will take place over the next several years and are therefore included in the estimate of post-designation costs.

8. Nominal post-designation costs of the proposed rule total approximately \$4.61 million to \$10.82 million.<sup>3</sup> Applying a discount rate of seven percent, the present value of total post-designation costs is anticipated to be approximately \$2.93 million to \$6.22 million, or \$277,000 to \$587,000 annualized over 20 years.
9. Post-designation costs associated with Fort Irwin conservation efforts include the purchase of 1,807 acres of private lands in Units 2 and 3 of the proposed designation; this land acquisition effort accounts for 17 percent of total post-designation costs.<sup>4</sup> Other DOD-related conservation efforts included in the post designation cost estimate are the annual costs of monitoring and maintenance of the LMMV conservation areas. Additionally, the National Aeronautics and Space Administration (NASA) annual report to the Service on the status of the species and habitat on NASA-leased lands at Fort Irwin accounts for another six percent of total post-designation costs.
10. Post-designation costs associated within the proposed CHD lands outside of Fort Irwin, Unit 3 and a small portion of Unit 2, include the annual costs of increased law enforcement and maintenance workers in the project area, route maintenance costs, maintenance of signs and outreach materials, and conducting validity exams on existing mining claims on BLM lands. These efforts account for 69 percent of total post-designation costs of the proposed CHD.
11. Where the information is available, it is best to present results of the economic analysis in the smallest geographical scale possible to inform the Service of the impacts of designating particular land parcels. Exhibit ES-3 presents a subset of the estimated post-designation costs by Unit. Importantly, this does not include all forecast costs, as not all costs are separable on a Unit-by-Unit basis.

**EXHIBIT ES-3: SUBSET OF TOTAL ESTIMATED POST-DESIGNATION COSTS OF PROPOSED CHD BY UNIT**

<b>Proposed CHD Unit</b>	<b>Description of Estimated Costs</b>	<b>Nominal Cost</b>
Unit 1	<ul style="list-style-type: none"> <li>• Costs of NASA reporting on status of LMMV on its leased lands</li> </ul>	\$642,000
Unit 2	<ul style="list-style-type: none"> <li>• Cost to DOD of purchasing 407 acres of private land outside the boundaries of Fort Irwin</li> </ul>	\$252,000 to \$407,000
Unit 3	<ul style="list-style-type: none"> <li>• Cost to DOD of purchasing approximately 1,400 acres of private land outside the boundaries of Fort Irwin</li> </ul>	\$865,000 to \$1.4 million

<sup>3</sup> The “nominal” cost is the undiscounted sum of the future costs. That is, it does not incorporate a discount rate, which is used to bring a series of future cash flows to their present value in order to state them in today's dollars.

<sup>4</sup> The 1,807 acre estimate for land purchases equals the number of remaining acres outside the boundaries of Fort Irwin that are privately owned; approximately 407 acres are within Unit 2 and 1,400 in Unit 3. All remaining private lands within the proposed designation are within the boundaries of Fort Irwin and would be purchased regardless of the presence of the LMMV in accordance with the Fort Irwin Expansion Plan (Personal communication with U.S. Fish and Wildlife Service, Ventura Field Office, July 22, 2004).

12. In the case of the LMMV CHD, forecast economic impacts are not all separable on a Unit-by-Unit level. For example the following post-designation costs of the proposed rule are not Unit specific for the following reasons:

- The majority of the high-end post designation costs of the proposed rule, \$7.45 million (69 percent), are associated with implementation of the WMP, including route rehabilitation and destruction, conducting validity exams on existing mining claims on BLM lands, and increased enforcement of regulations on OHV use. These costs are associated with Unit 3 of the proposed designation, which is entirely within BLM lands to be managed by the BLM according to the WMP, and Unit 2, 16 percent of which falls within BLM lands to be managed by the BLM according to the WMP. It is unclear to what extent the cost of these efforts may be reduced by the exclusion of a portion of these Units from CHD.
- Approximately 6.9 percent, or \$750,000, of the forecast post-designation costs of the proposed rule are associated with DOD studies on the cumulative impacts of training, including dust and obscurants, near the LMMV habitat. These impacts are a result of CHD of Unit 1, which falls entirely within DOD lands, and a portion of Unit 2, of which approximately 84 percent falls within DOD lands. The cost of these efforts is not expected to be changed if the Service changes any of the Unit boundaries in the proposed CHD thus the costs of these efforts are not due to the inclusion of any one proposed Unit.
- Approximately 1.6 percent, or \$170,000, of the estimated high-end post-designation costs of the proposed rule are borne by the DOD for monitoring and maintenance of LMMV management areas, and implementation of an education program for land-users. These impacts are a result of CHD of Unit 1, which falls entirely within DOD lands, and a portion of Unit 2, of which approximately 84 percent falls within DOD lands. The cost of these efforts is not expected to be changed if the Service changes any of the Unit boundaries in the proposed CHD thus the costs of these efforts are not due to the inclusion of any one proposed Unit.

13. The majority of both pre- and post-designation costs of the proposed rule are a result of the implementation of two major ongoing projects; conservation measures associated with the Fort Irwin land expansion, and the development and implementation of the WMP. A goal of these disparate efforts is to place all lands proposed for critical habitat designation (CHD) for the LMMV on Federal lands, either Fort Irwin or BLM.<sup>5</sup>

---

<sup>5</sup> This analysis assumes that, consistent with the goals of the Fort Irwin expansion plan and the WMP, all private lands within the area are purchased. The private lands within the boundaries of Fort Irwin may be acquired through eminent domain and will be managed by the DOD. The DOD has also proposed to assist with purchase of private lands outside the boundaries of Fort Irwin to be managed by the BLM. These lands, however, will only be purchased from willing sellers. The statement that all of the proposed critical habitat lands will be Federally-managed in the future assumes that all private landowners of parcels outside of Fort Irwin are willing sellers.

Additionally, the entire CHD outside of Fort Irwin will be subject to reserve-level management by BLM as designated ACECs. As a result, some costs associated with the proposed rule anticipated to be borne post-designation are in fact precipitated by these pre-designation projects. For example, the cost of private land acquisition outside the boundaries of Fort Irwin, regular maintenance and monitoring of conservation areas, and annual reports from NASA to the Service on the status of the species and habitat on NASA-leased lands at Fort Irwin are anticipated to be incurred post-designation in the areas proposed for CHD.

14. This analysis does not anticipate impacts to OHV users in the proposed critical habitat area. First, the BLM does not issue formal permits for OHV use within the proposed lands. All OHV users must remain on open routes in the proposed CHD and are therefore not anticipated to adversely impact the LMMV or habitat. While “dual sport” events, such as non-competitive motorcycling, may pass through the area and require a BLM-issued Special Recreation Permit, multiple route options are available for these events and participants are typically flexible regarding rerouting around particular areas. Further, these vehicles are required to remain on marked routes, and vehicles adhering to route designations (as open or closed to vehicle traffic) are not anticipated to impact the LMMV or habitat.
15. This analysis does not anticipate economic impacts to casual use mining participants or individuals with mining claims within the lands proposed for CHD. Casual use mining activities are not anticipated to result in impacts to the LMMV because most of the digging and panning occurs in pockets of deeper, gold-bearing soil, rather than the shallow-soiled areas where individuals of LMMV occur.<sup>6</sup> Additionally, the BLM will conduct validity exams at each of the existing 16 mining claims within the critical habitat lands to determine whether the claimant has discovered a valuable mineral deposit or otherwise has a valid mining claim. The BLM will also assess whether the claimant’s mining activity may result in significant ground disturbance and has any impact on the LMMV. Until recent LMMV surveys, BLM was unaware of the amount of overlap between LMMV habitat and the location of mining claims; BLM has yet to assess whether current mining activity has any impact on LMMV.
16. Finally, the analysis concludes that the designation will not generate significant small business impacts, and will have no economic effect on energy production or distribution. Economic impacts related to these activities and entities are discussed in detail in Appendix A.
17. The following assumptions in this analysis may introduce uncertainty concerning the economic analysis of LMMV conservation activities:
  - **Impacts to military readiness.** This analysis does not make any determination as to whether there may be potential impacts to military

---

<sup>6</sup> Communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

readiness at Fort Irwin as a result of designating critical habitat on military training lands outside of the proposed conservation areas for the LMMV.

- **Acquisition of private lands.** To mitigate the impacts of training activities on LMMV populations outside of the conservation areas at Fort Irwin, DOD is attempting to purchase all private lands within the area proposed for designation for the LMMV. This analysis assumes that all private landowners are willing sellers and that as a result of the DOD and BLM efforts, all lands containing proposed critical habitat will be under Federal ownership.
- **Consumer surplus effects of restrictions on OHV use.** This analysis assumes that route closures within the proposed designation will have a negligible impact on OHV users. This is due to the fact that that BLM surveys to determine route designation status (as open, closed, or limited to OHV traffic) were focused on closing routes that were considered redundant with existing open routes. Further, dual sport event participants that may pass through the area approximately once per year are typically flexible regarding their specific route through the area. In the case that an event is planned to pass through the CHD, re-routing a small segment of the event around the proposed critical habitat lands is not anticipated to result in economic impacts to the event or its participants. Further, numerous usable driving routes still exist within the boundaries of the area proposed for CHD. These routes are expected to remain open for passage and are specifically excluded from CHD as they lack the primary constituent elements necessary to support LMMV plants.
- **Consumer surplus effects of restrictions on mining.** No commercial mining exists within the boundaries of lands proposed for critical habitat designation. On BLM lands, only casual use mining exists. Mining activities are considered “casual use” when they result in only negligible disturbance of the Federal lands and resources.<sup>7</sup> This analysis accordingly assumes that the economic impacts to mining activities are limited to BLM conducting of validity exams on privately held mining claims within the proposed CHD, and environmental review of the 16 existing mining claims to determine whether these activities result in significant ground disturbance. This analysis does not therefore anticipate impacts to miners themselves, but does quantify impacts to BLM of conducting validity exams.

---

<sup>7</sup> The BLM stated that only casual use mining exists within the proposed critical habitat designation (personal communication with Charles Sullivan, BLM, March 3, 2004).

## **Framework for the Analysis**

18. This analysis considers the potential economic effects of designating critical habitat for the LMMV. In addition, the results discussed above contemplate the economic effects of protective measures taken as a result of the listing of the LMMV as an endangered species, and other Federal, State, and local regulations that aid habitat conservation in areas proposed for designation. Actions undertaken to meet the requirements of other Federal, State, and local laws may afford protection to the LMMV and its habitat, and thus contribute to the efficacy of critical habitat-related conservation and recovery efforts. Thus, the impacts of these actions are relevant for understanding the full impact of the proposed critical habitat designation.
19. This analysis considers both economic efficiency and distributional effects. In the case of habitat conservation, efficiency effects generally reflect the “opportunity costs” associated with the commitment of resources to comply with habitat protection measures (e.g., lost economic opportunities associated with restrictions on land use). This information can be used by decision-makers to assess changes in overall social welfare that may occur as a result of designation. This analysis looks retrospectively at costs that have been incurred since the date the species was listed and considers those costs that may occur after the designation as proposed is finalized. This analysis also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on small entities and the energy industry (see Appendix A). This information can be used by decision-makers to assess whether the effects of the designation might unduly burden a particular group or economic sector.
20. This analysis first quantifies the impact of LMMV-related management actions undertaken prior to the designation of critical habitat, from the time of the listing in 1998, to the final designation of critical habitat. These are referred to as pre-designation impacts. These include administrative and project modification costs borne by stakeholders such as the DOD and BLM. The analysis then considers future administrative and project modification costs and the range of impacts that could result from future LMMV-related management actions referred to as post-designation impacts. Post-designation impacts are forecast from the time of the final designation as proposed, 2005, over a 20-year time horizon.

- 
21. The purpose of this analysis is to estimate the economic impact of actions taken to protect the Federally listed Lane Mountain milk-vetch (LMMV) and its habitat. It attempts to quantify the economic effects of the designation of critical habitat, as well as any protective measures taken as a result of the listing or other Federal, State, and local laws that aid habitat conservation in the areas proposed for designation. Costs are examined that, (a) have been incurred since the date the species was listed and through the final designation of critical habitat as proposed, “pre-designation costs,” and (b) are forecast to occur after the designation as proposed is finalized, “post-designation costs.”
22. This analysis is consistent with the designation as described in the proposed rule. As such, this analysis does not reflect potential changes to the proposed CHD in the final rule. Description of the habitat designation in the final rule may consequently differ from that presented in this analysis.
23. This information is intended to assist the Secretary in determining whether the benefits of excluding particular areas from the designation outweigh the benefits of including those areas in the designation.<sup>8</sup> In addition, this information allows the Service to address the requirements of Executive Orders 12866 and 13211, and the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA).<sup>9</sup> The small business analysis is included in Appendix A of this report. This report also complies with direction from the U.S. 10<sup>th</sup> Circuit Court of

---

<sup>8</sup> 16 U.S.C. §1533(b)(2).

<sup>9</sup> Executive Order 12866, “Regulatory Planning and Review,” September 30, 1993; Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001; 5 U.S.C. §§601 *et seq*; and Pub Law No. 104-121.

Appeals that “co-extensive” effects should be included in the economic analysis to inform decision-makers regarding which areas to designate as critical habitat.<sup>10</sup>

24. This section provides the framework for this analysis. First, it describes the general analytic approach to estimating economic effects, including discussion of both efficiency and distributional effects. Next, it discusses the scope of the analysis, including the link between existing and critical habitat-related protection efforts and economic impacts. Finally, it describes the information sources employed to conduct this analysis.

## **1.1 Approach to Estimating Economic Effects**

25. This economic analysis considers both the economic efficiency and distributional effects that may result from species and habitat protection. Economic efficiency effects generally reflect “opportunity costs” associated with the commitment of resources required to accomplish species and habitat conservation. For example, if activities on a parcel of land are limited as a result of the designation or the presence of the species, and thus the market value of the land is reduced, this reduction in value represents one measure of opportunity cost or change in economic efficiency. Similarly, the costs incurred by a Federal action agency to consult with the Service under section 7 represent opportunity costs of habitat conservation.

26. This analysis also addresses the distribution of impacts associated with the designation, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on small entities or the energy industry (see Appendix A). This information may be used by decision-makers to assess whether the effects of the designation unduly burden a particular group or economic sector. For example, while habitat conservation activities may have a small impact relative to the national economy, individuals employed in a particular sector of the regional economy may experience a significant level of impact. The difference between economic efficiency effects and distributional effects, as well as their application in this analysis, are discussed in greater detail below.

### **1.1.1 Efficiency Effects**

27. At the guidance of the Office of Management and Budget (OMB) and in compliance with Executive Order 12866 “Regulatory Planning and Review,” Federal agencies measure changes in economic efficiency in order to discern the implications on a societal level of a regulatory action. For regulations specific to the conservation of the LMMV, efficiency effects represent the opportunity cost of resources used, or benefits foregone, by society as a result of the regulations. Economists generally characterize

---

<sup>10</sup> In 2001, the U.S. 10<sup>th</sup> Circuit Court of Appeals instructed the Service to conduct a full analysis of all of the economic impacts of proposed CHD, regardless of whether those impacts are attributable co-extensively to other causes (*New Mexico Cattle Growers Ass’n v. U.S.F.W.S.*, 248 F.3d 1277 (10<sup>th</sup> Cir. 2001)).

opportunity costs in terms of changes in producer and consumer surplus in affected markets.<sup>11</sup>

28. In some instances, compliance costs may provide a reasonable approximation for the efficiency effects associated with a regulatory action. For example, a lead Federal agency may enter into a consultation with the Service to ensure that a particular activity will not adversely modify critical habitat. The effort required for the consultation is an economic opportunity cost, because the landowner or manager's time and effort would have been spent in an alternative activity had his or her land not been designated critical habitat. In the case that compliance activity is not expected to significantly affect markets – that is, not result in a shift in the quantity of a good or service provided at a given price, or in the quantity of a good or service demanded given a change in price – the measurement of compliance costs provides a reasonable estimate of the change in economic efficiency.
29. Where habitat protection measures are expected to significantly impact a market, it may be necessary to estimate changes in producer and consumer surpluses. For example, a designation that precludes the development of large areas of land may shift the price and quantity of housing supplied in a region. In this case, changes in economic efficiency (i.e., social welfare) can be measured by considering changes in producer and consumer surplus in the real estate market.
30. This analysis begins by measuring costs associated with measures taken to protect species and habitat. As noted above, in some cases, compliance costs can provide a reasonable estimate of changes in economic efficiency. However, if the cost of conservation measures is expected to significantly impact markets, the analysis will consider potential changes in consumer and/or producer surplus in affected markets.
31. Where data are available, the analysis attempts to capture the *net* economic impact imposed on regulated entities and the regional economy of LMMV conservation actions. That is, this analysis considers the economic impact of LMMV conservation to the land management agencies and regulated community net of any direct off-setting benefit they experience. For example, the fencing in of LMMV plants for protection from direct impacts from vehicles precludes the use of the land for OHV recreation but may increase the appeal of those lands for other types of recreation, such as wildlife viewing.

### **1.1.2 Distributional and Regional Economic Effects**

32. Measurements of changes in economic efficiency focus on the net impact of conservation activities, without consideration of how certain economic sectors or groups

---

<sup>11</sup> For additional information on the definition of “surplus” and an explanation of consumer and producer surplus in the context of regulatory analysis, see Gramlich, Edward M., *A Guide to Benefit-Cost Analysis (2<sup>nd</sup> Ed.)*, Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

of people are affected. Thus, a discussion of efficiency effects alone may miss important distributional considerations. OMB encourages Federal agencies to consider distributional effects separately from efficiency effects.<sup>12</sup> This analysis considers several types of distributional effects, including impacts on small entities; impacts on energy supply, distribution, and use; and regional economic impacts. It is important to note that these are fundamentally different measures of economic impact than efficiency effects, and thus cannot be added to or compared with estimates of changes in economic efficiency.

#### Impacts on Small Entities and Energy Supply, Distribution, and Use

33. Appendix A of this analysis considers how small entities, including small businesses, organizations, and governments, as defined by the RFA, may be affected by proposed critical habitat designation (CHD).<sup>13</sup> In addition, in response to Executive Order 13211 “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” Appendix A considers the impacts of critical habitat on the energy industry and its customers.<sup>14</sup>

#### Regional Economic Effects

34. Regional economic impact analysis can provide an assessment of the potential localized economic effects of conservation measures. Specifically, regional economic impact analysis produces a quantitative estimate of the potential magnitude of the initial change in the regional economy resulting from a regulatory action. Regional economic impacts are commonly measured using input/output models. These models rely on multipliers that represent the relationship between a change in one sector of the economy (e.g., expenditures by recreationists) and the effect of that change on economic output, income, or employment in other local industries (e.g., suppliers of goods and services to recreationists). These economic data provide a quantitative estimate of the magnitude of shifts of jobs and revenues in the local economy.
35. The use of regional input/output models in an analysis of the impacts of species and habitat conservation efforts can overstate the long-term impacts of a regulatory change. Most importantly, these models provide a static view of the economy of a region. That is, they measure the initial impact of a regulatory change on an economy but do not consider long-term adjustments that the economy will make in response to this change. For example, these models provide estimates of the number of jobs lost as a result of a regulatory change, but do not consider re-employment of these individuals over time or other adaptive responses by affected businesses. In addition, the flow of goods and services across the regional boundaries defined in the model may change as a

---

<sup>12</sup> U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

<sup>13</sup> 5 U.S.C. § 601 *et seq.*

<sup>14</sup> Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001.

result of the regulation, compensating for a potential decrease in economic activity within the region.

36. Despite these and other limitations, in certain circumstances regional economic impact analysis may provide useful information about the scale and scope of localized impacts. It is important to remember that measures of regional economic effects generally reflect shifts in resource use rather than efficiency losses. Thus, these types of distributional effects are reported separately from efficiency effects (i.e., not summed). In addition, measures of regional economic impact cannot be compared with estimates of efficiency effects, but should be considered as distinct measures of impact.

## **1.2 Scope of the Analysis**

37. This analysis attempts to quantify economic effects of CHD *as well the economic effects of the protective measures taken as a result of the listing of the LMMV or other Federal, State, and local laws that also aid habitat conservation in the areas proposed for designation*. Because habitat protection efforts affording protection to the LMMV likely contribute to the efficacy of the proposed CHD efforts, the impacts of these actions may be considered relevant for understanding the full impact of the proposed designation.<sup>15</sup>

### **1.2.1 Sections of the Act Relevant to the Analysis**

38. The analysis focuses on activities that are influenced by the Service through sections 4, 7, 9, and 10 of the Act. Section 4 of the Act focuses on the listing and recovery of endangered and threatened species, as well as CHD. According to section 4, the Secretary is required to list species as endangered or threatened “solely on the basis of the best available scientific and commercial data.”<sup>16</sup>

---

<sup>15</sup> A comment letter provided on the draft version of this analysis stated that the economic analysis should clearly state that CHD for plants does not have a legal impact on private lands due to a lack of a Federal nexus (Letter from California Native Plant Society and Center for Biological Diversity to U.S. Fish and Wildlife Service, January 7, 2005). This analysis does conclude that no impacts are anticipated to private landowners associated with LMMV conservation efforts. This is due to the location of the proposed CHD primarily on lands managed by DOD or BLM. While private landowners are not directly regulated by the Endangered Species Act (ESA), however, it is possible that the activities of private landowners may be subject to section 7 consultation where a planned activity or project involves Federal approval or permitting. It is further possible that private landowners may be indirectly affected by CHD. For example, Section 1.2.3 of this analysis discusses the potential for changes to private property values associated with public attitudes about the limits and costs of critical habitat. Further, this analysis assesses not only the direct economic effects of the CHD, but also the economic effects of protective measures taken as a result of the listing of the LMMV or other Federal, State, and local laws that also aid habitat conservation in the areas proposed for CHD.

<sup>16</sup> 16 U.S.C. 1533.

39. The protections afforded to threatened and endangered species and their habitat are described in sections 7, 9, and 10 of the Act, and economic impacts resulting from these protections are the focus of this analysis:

- Section 7 of the Act requires Federal agencies to consult with the Service to ensure that any action they authorize, fund, or carry out will not likely jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of the species' designated critical habitat. The administrative costs of these consultations, along with the costs of project modifications resulting from these consultations, represent compliance costs associated with the listing of the species and the designation of critical habitat.<sup>17</sup>
- Section 9 defines the actions that are prohibited by the Act. In particular, it prohibits the "take" of endangered wildlife, where "take" means to "harass, harm, pursue, or collect, or to attempt to engage in any such conduct."<sup>18</sup> The economic impacts associated with this section manifest themselves in sections 7 and 10.
- Under section 10(a)(1)(B) of the Act, an entity (i.e., a landowner or local government) may develop a Habitat Conservation Plan (HCP) for an endangered animal species in order to meet the conditions for issuance of an incidental take permit in connection with the development and management of a property.<sup>19</sup> The requirements posed by the HCP may have economic impacts associated with the goal of ensuring that the effects of incidental take are adequately minimized and mitigated. The designation of critical habitat does not require completion of an HCP; however, the designation may influence conservation measures provided under HCPs. The vast majority of land proposed for designation for the LMMV, approximately 84 percent, is Federally-managed. Federal agencies are not typically the sole stakeholder agency involved with development of an HCP. Federal agencies, however, can be the lead agency on a multi-jurisdictional HCP, such as the West Mojave Plan (WMP). Further, while HCPs are not developed solely for plant species, if listed plants occur in the area subject to the HCP, the Service must consider whether the proposed activities may adversely affect or jeopardize the continued existence of the plant species. The WMP serves

---

<sup>17</sup> The Service notes, however, that a recent Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. United States Fish and Wildlife Service*, has invalidated the Service's regulation defining destruction or adverse modification of critical habitat. The Service is currently reviewing the decision to determine what effect it (and to a limited extent *Center for Biological Diversity v. Bureau of Land Management* (Case No. C-03-2509-SI, N.D. Cal.)) may have on the outcome of consultations pursuant to section 7 of the Act.

<sup>18</sup> 16 U.S.C. 1538 and 16 U.S.C. 1532.

<sup>19</sup> U.S. Fish and Wildlife Service, "Endangered Species and Habitat Conservation Planning." From: <http://endangered.fws.gov/hcp/>, as viewed on August 6, 2002.

as both a multiple species conservation plan according to section 10 of the Act and an amendment to the California Desert Conservation Area Plan (CDCA). The LMMV is one of the species covered by the WMP and costs of measures associated with LMMV-specific provisions are included in this analysis.

### 1.2.2 Other Relevant Protection Efforts

40. The protection of listed species and habitat is not limited to the Act. Other Federal agencies, as well as State and local governments, may also seek to protect the natural resources under their jurisdiction.<sup>20</sup> In addition, under certain circumstances, the designation of critical habitat may provide new information to a community about the sensitive ecological nature of a geographic region, potentially triggering additional economic impacts under other State or local laws. In cases where these costs may not have been triggered absent the designation of critical habitat, they are included in this economic analysis. In this regard, the analysis considers the extent to which the LMMV designation might trigger the completion of an environmental impact report (EIR) under the California Environmental Quality Act (CEQA).
41. CEQA is a California State statute that requires State and local agencies (referred to as “lead agencies”) to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if feasible. Projects carried out by Federal agencies are not subject to CEQA provisions. CEQA regulations require a lead agency to initially presume that a project will result in a potentially significant adverse environmental impact and to prepare an EIR if the project may produce certain types of impacts, including when:
- “[t]he project has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory.”<sup>21</sup>*
42. State law instructs the lead agency (typically a county or city community development or planning department in the case of land development projects) to examine impacts from a very broad perspective, taking into account the value of animal and plant habitats to be modified by the project. The lead agency must determine which, if any, project impacts are potentially significant and, for any such impacts identified,

---

<sup>20</sup> For example, the Sikes Act Improvement Act (Sikes Act) of 1997 requires Department of Defense (DOD) military installations to develop Integrated Natural Resources Management Plans (INRMPs) that provide for the conservation, protection, and management of wildlife resources (16 U.S.C. §§ 670a - 670o). These plans must integrate natural resource management with the other activities, such as training exercises, taking place at the facility.

<sup>21</sup> California Natural Resources Code §15065(a).

whether feasible mitigation measures or feasible alternatives will reduce the impacts to a level less than significant. It is within the power of a lead agency to decide that negative impacts are acceptable in light of economic, social, or other benefits generated by the project.

43. Critical habitat for the LMMV is not likely to trigger the requirements of CEQA as the habitat is primarily on Federal lands managed by the BLM or DOD, and Federal agencies are not subject to CEQA provisions. Further, the small, scattered parcels of private land are primarily homesteads and are not likely to be subject to future commercial or residential development pressures.

### **1.2.3 Additional Analytic Considerations**

44. Previous economic impact analyses prepared to support critical habitat decisions have considered other types of economic impacts related to CHD, including time delay, regulatory uncertainty, and stigma impacts. This analysis considers these economic impacts and has determined that the proposed CHD for the LMMV is unlikely to have economic impacts of this nature.

45. Changes to private property values associated with public attitudes about the limits and costs of critical habitat are known as “stigma” impacts. Private property represents fifteen percent of the total proposed LMMV CHD. The majority of these properties are homesteads, and some may be used for small-scale recreational mining. Further, as a result of the Fort Irwin expansion and the implementation of the WMP, it is anticipated that the entirety of the proposed CHD will be under Federal ownership within the next few years.<sup>22</sup> As a result, stigma impacts on private property values are not anticipated.

### **1.2.4 Benefits**

46. The published economics literature has documented that real social welfare benefits can result from the conservation and recovery of endangered and threatened species. Such benefits have also been ascribed to preservation of open space and biodiversity, both of which can be associated with species conservation, but are not the purpose of critical habitat. Likewise, regional economies and communities can benefit from the preservation of healthy populations of endangered and threatened species, and the habitat on which these species depend.

---

<sup>22</sup> This analysis assumes that, consistent with the goals of the Fort Irwin expansion plan and the WMP, all private lands within the area will be acquired or purchased. The private lands within the boundaries of Fort Irwin may be acquired through eminent domain and will be managed by the DOD. The DOD has also proposed to assist with purchase of private lands outside the boundaries of Fort Irwin to be managed by the BLM. These lands, however, will only be purchased from willing sellers. The statement that all of the proposed critical habitat lands will be Federally-managed in the future assumes that all private landowners of parcels outside of Fort Irwin are willing sellers.

47. In Executive Order 12866, OMB directs Federal agencies to provide an assessment of costs and benefits of proposed regulatory actions.<sup>23</sup> However, in its guidance for implementing Executive Order 12866, OMB acknowledges that often, it may not be feasible to monetize, or even quantify, the benefits of environmental regulations.<sup>24</sup> Where benefits cannot be quantified, OMB directs agencies to describe the benefits of a proposed regulation qualitatively. *Given the limitations associated with estimating the benefits of proposed CHD for the LMMV, the Service believes that the benefits of proposed CHD are best expressed in biological terms that can be weighed against the expected cost impacts of the rulemaking. This discussion will be included in the preamble to the final rulemaking.*

### **1.3 Analytic Time Frame**

48. The analysis examines activities taking place both within and adjacent to the proposed designation. Estimates of post-designation impacts are based on activities that are “reasonably foreseeable,” including, but not limited to, activities that are currently authorized, permitted, or funded, or for which proposed plans are currently available to the public. The analysis estimates economic impacts to activities from 1998 (year of species’ final listing) to 2025, (twenty years from the year of final designation). The use of the lands proposed for critical habitat designation is not expected to change significantly over this time period.

### **1.4 Information Sources**

49. The primary sources of information for this report were communications with and data provided by the Service, BLM, Fort Irwin, NASA, San Bernardino County, and organizations representing off-highway vehicle interests. Specifically, the analysis relies on data collected in communication with personnel from the following entities.

- U.S. Fish and Wildlife Service;
- U.S. Bureau of Land Management;
- Fort Irwin National Training Center;
- National Aeronautics and Space Administration;
- San Bernardino County Planning Office;
- Barstow Chamber of Commerce; and
- American Motorcyclist Administration.

---

<sup>23</sup> Executive Order 12866, “Regulatory Planning and Review,” September 30, 1993.

<sup>24</sup> U.S. Office of Management and Budget, “Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice,” 68 *Federal Register* 5492, February 3, 2003; and U.S. Office of Management and Budget, “Appendix 4: Guidelines to Standardize Measure of Costs and Benefits and the Format of Accounting Statements,” in *Report to Congress on the Costs and Benefits of Federal Regulations*, March 22, 2000.

50. This analysis also relies upon publicly available documents including the Draft Environmental Impact Report and Statement for the West Mojave Plan.<sup>25</sup> Publicly available data were also used to augment the analysis. This report further addresses issues and new information raised during the public comment period for the draft version of this analysis. Please refer to the reference section at the end of this document for a full list of information sources.

---

<sup>25</sup> Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment," May 2003.

51. The Service proposed to designate critical habitat for the Federally listed Lane Mountain milk-vetch (*Astragalus jaegerianus*), a perennial plant that occurs within the Mojave Desert; specifically, the plant's range occurs north of the town of Barstow in San Bernardino County, CA. This section provides background on the geography, ecology, and human-uses of the proposed CHD. It details the current state of the proposed lands, including a description of management activities and land ownership and the ecology of the area. Next, it describes particular land-use activities that occur in the proposed CHD in terms of their significance to LMMV.

## 2.1 Species and Designation<sup>26</sup>

### 2.1.1 Description of Species

52. The LMMV, a member of the pea family, is a wispy perennial herb that becomes woody at the base during the growing season. The stems wither at the end of each growing season. Stems are 12 to 20 inches long and often grow in a zigzag pattern usually up through low bushes, referred to as host shrubs. The plant begins regrowth in the fall and blooming typically occurs in April and May. The species is considered a hemicryptophyte (partially hidden) as it is typically found growing within the canopy of a host shrub making individual plants somewhat difficult to notice. It is possible that the LMMV and host plant possess a symbiotic relationship. The LMMV also requires pollinator insects such as a bee (*Anthidium dammersi*) for reproduction.
53. The aboveground portion of the LMMV dies back each year and the plant overwinters as a taproot. Individuals may exist as perennial rootstock through the dry season allowing the plant to endure longer periods of drought by remaining dormant. Life span of individuals varies and may stretch up to 13 years. LMMV is found on shallow soils that are coarse or sandy and derived from Jurassic or Cretaceous granitic bedrock. The topography of the habitat is mostly low ridges and low, rocky hills containing exposed bedrock. Most individuals are found between 3,100 and 4,200 feet in elevation. Soils in low-lying basins and between ridges may be too fine to support the species.

---

<sup>26</sup> Information on the species and habitat is taken from the Proposed Designation of Critical Habitat for *Astragalus jaegerianus* (Lane Mountain milk-vetch), published in the *Federal Register* on April 6, 2004, Vol. 69, No. 66.

54. The flora within the proposed CHD is described as Mojave mixed woody scrub and Mojave creosote bush scrub. These communities contain a high level of diversity of desert scrub species, including: turpentine bush (*Thamnosma montana*), white bursage (*Ambrosia dumosa*), Mormon tea (*Ephedra nevadensis*), Cooper goldenbush (*Ericameria cooperi* var. *cooperi*), California buckwheat (*Eriogonum fasciculatum* var. *polifolium*), brittlebush (*Encelia farinosa* or *E. actoni*), desert aster (*Xylorrhiza tortifolia*), goldenheads (*Acamptopappus spheroccephalus*), spiny hop-sage (*Grayia spinosa*), cheesebush (*Hymenoclea salsola*), winter fat (*Kraschenninikovia lanata*), and paper bag bush (*Salazaria mexicana*).
55. Primary constituent elements essential for the conservation of the species include:
- Shallow soils (between 3,100 and 4,200 feet in elevation) derived primarily from Jurassic or Cretaceous granitic bedrock, and less frequently soils derived from diorite or gabbroid bedrock and at one location on granitic soils overlain by scattered rhyolitic cobble, gravel, and sand; and
  - Host shrubs within which LMMV grows, typically found in mixed desert shrub communities.
56. Individual LMMV plants are concentrated in four geographically distinct areas, referred to as populations. These populations are arrayed approximately linearly along a 20-mile northeast to southwest axis. To date, the number of individuals identified through surveys is 5,800. Assuming an “observability factor” of 30 to 70 percent, this translates to a total species count of 20,524 to 47,890 individuals. In any given year, however, only a fraction of these individuals may be observed above ground, depending on climatic conditions. Recent extensive surveys funded by the DOD have determined that it is unlikely that additional populations of this species exist elsewhere.

### **2.1.2 Description of Designation**

57. The Service proposed to designate approximately 29,522 acres (11,947 hectares) of critical habitat in San Bernardino County, California for LMMV. The proposed CHD occurs within the Mojave Desert north of the town of Barstow and the entire known range of the LMMV occurs within an area of land approximately 16 miles in diameter.<sup>27</sup> The three units proposed for CHD encompass the four population sites for the species as follows. (More detailed descriptions of the landowners and activities are provided in the remainder of the chapter, and a graphical depiction of their relative locations is provided in Exhibit 2-2.)

#### **Unit 1: Goldstone-Brinkman**

Two populations, the Goldstone and Brinkman Wash-Montana Mine, are encompassed within Unit 1, which consists of approximately 9,906 acres that falls entirely within the boundaries of the Department of Defense’s

---

<sup>27</sup> U.S. Fish and Wildlife Service, *Biological Opinion for the California Desert Conservation Area Plan [Lane Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort]*, 6840(P) CA-063.50, 1-8-01-F-18, February 27, 2002.

(DOD), Fort Irwin. This acreage includes parcels of private lands that occur throughout the Unit, but are anticipated to be acquired by the DOD. The National Aeronautical and Space Administration (NASA) leases 996 of these acres for the Goldstone Tracking Station; the NASA-leased critical habitat lands represent only a portion of the total acreage comprising NASA's Goldstone Tracking Station. Scattered parcels of State and private lands occur throughout the Unit.

**Unit 2: Paradise**

The Paradise Wash population is contained within Unit 2 of the proposed CHD. This Unit comprises approximately 6,828 acres of land, 84 percent within Fort Irwin and seven percent on Bureau of Land Management (BLM) lands. This acreage includes scattered privately owned parcels.

**Unit 3: Coolgardie**

The Coolgardie population occurs within Unit 3 of the proposed CHD. This Unit consists of approximately 12,788 acres, 71 percent of which is owned by the BLM. The remaining lands are private parcels scattered throughout the unit which are primarily homesteads. The “donut hole” in the center of this unit is not being proposed for CHD, as it does not contain the appropriate granitic soils required to support the LMMV.

58. Exhibit 2-1 highlights land ownership by unit of proposed CHD. Approximately 84 percent of the lands proposed for CHD are Federally owned, 52 percent Department of Defense (DOD) National Training Center (NTC) at Fort Irwin, and 32 percent Bureau of Land Management (BLM). The State and private land parcels, mostly homesteads, occur in a checkerboard fashion throughout the Federal lands, as illustrated in Exhibit 2-2.

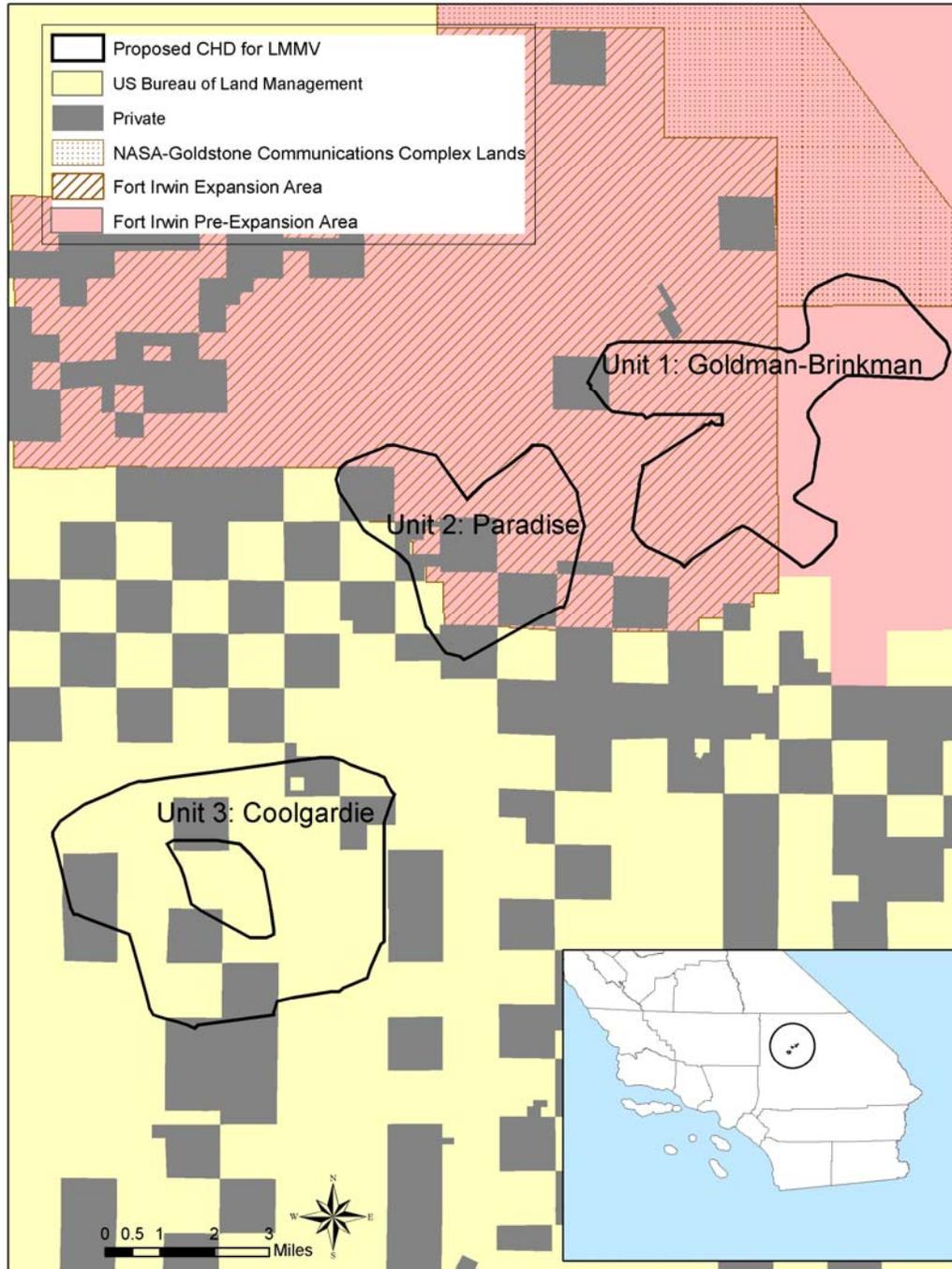
**EXHIBIT 2-1: LAND OWNERSHIP WITHIN PROPOSED CRITICAL HABITAT FOR LMMV (ACRES)**

Unit	DOD	BLM	State	Private	Total
1: Goldstone-Brinkman	9,502	0	211	193	9,906
2: Paradise	5,755*	466	0	607	6,828
3: Coolgardie	0	9,074	0	3,714	12,788
Total	15,257	9,540	211	4,514	29,522
Percent of Total	52%	32%	1%	15%	100%

\*DOD acreage in Unit 2 includes private lands within Fort Irwin boundaries that will become DOD lands through acquisition.

EXHIBIT 2-2

PROPOSED CRITICAL HABITAT  
FOR THE LANE MOUNTAIN MILK-VETCH



59. In order to determine appropriate boundaries for the proposed units, the Service first used minimum convex polygons developed by DOD contractors encompassing all known LMMV individuals drawn by contractors for the DOD following species surveys. The Service then expanded these boundaries outward from the edge of the populations by a distance of 0.25 miles to incorporate lands that contained the primary constituent elements and may contain additional individual plants occurring on the fringes of the known populations.
60. Developed areas within the proposed CHD, including buildings, roads, parking lots, communication tower pads, and other paved areas, and old or abandoned mine sites, have been *excluded* from the proposed designation as they lack the necessary primary constituent elements, such as appropriate native vegetation, to support the LMMV.
61. Exhibit 2-3 summarizes the threats to which the species may be subject within each of the proposed Units.

**EXHIBIT 2-3: IDENTIFIED THREATS TO LMMV BY GEOGRAPHIC LOCATION**

Proposed Unit	Identified Threats
1: Goldstone-Brinkman	<ul style="list-style-type: none"> <li>• Invasions of nonnative plants, such as Sahara mustard</li> <li>• Habitat fragmentation</li> <li>• Vehicle use resulting in destruction of individuals or indirect impacts, such as airborne dust</li> </ul>
2: Paradise	<ul style="list-style-type: none"> <li>• Invasions of nonnative plants, such as Sahara mustard</li> <li>• Habitat fragmentation</li> <li>• Vehicle use resulting in destruction of individuals or indirect impacts, such as airborne dust</li> </ul>
3: Coolgardie	<ul style="list-style-type: none"> <li>• Invasions of nonnative plants, such as Sahara mustard</li> <li>• Habitat fragmentation</li> <li>• Vehicle use resulting in destruction of individuals or indirect impacts, such as airborne dust</li> <li>• Limited mining activities may lead to changes in vegetative cover</li> </ul>

**2.1.3 Overlap with other Endangered Species**

62. Critical habitat for the threatened desert tortoise (*Gopherus agassizii*) is known to occur within the proposed CHD for the LMMV in portions of each of the proposed Units. If a section 7 consultation is triggered for any listed species, the consultation process will also take into account all other listed species known or thought to occupy areas on or near the project lands. As such, listing or critical habitat-related protections for other threatened or endangered species may benefit the LMMV as well. Costs of habitat restoration projects driven by efforts to preserve desert tortoise habitat that may benefit the LMMV are included in this analysis if it is determined that they also benefit the LMMV and may be recommended to protect the LMMV absent concerns for the Desert tortoise. For example, route designations and closures throughout the habitat area planned for the benefit of the Desert tortoise may also offer protection to the LMMV and if these designations were not made for the tortoise, the Service may recommend similar

protections for the LMMV. To the extent possible, this analysis distinguishes costs related specifically to LMMV conservation where multiple species are subject of a single section 7 consultation.<sup>28</sup>

## **2.2 Land Use Activities in the Proposed CHD**

63. The Service has identified the following activities that may occur within the proposed CHD as potentially affecting the conservation status of the species or habitat:

- Military-related and construction activities of the Army on its lands and lands under its jurisdiction, including those lands leased to NASA;
- Activities of the BLM on its lands and lands under its jurisdiction (such as permitted OHV activities and casual use mining);
- The release of biological control agents by Federal agencies, including BLM, DOD, and USDA; and
- Habitat restoration projects on private lands.<sup>29</sup>

64. Overall, military training is the predominant activity occurring within the lands proposed for critical habitat with the potential to impact the LMMV and its habitat. Approximately 52 percent of proposed lands occur on Fort Irwin, and a portion of these lands will be subject to military training activities beginning approximately in 2009.

65. The remaining lands, primarily BLM-owned, are remote from residential and commercial development centers and as such, are subject to relatively low levels of

---

<sup>28</sup> A comment provided during the public comment period on the draft version of this analysis suggested that, as many of the conservation efforts benefit multiple species (including informal and formal consultations) it is not appropriate to allocate all costs to LMMV conservation. This comment suggested that costs be prorated by species that benefit from the CHD and other conservation actions. As an example, the comment states that consultation costs are overestimated as most consultations involve multiple species (Letter from California Native Plant Society and Center for Biological Diversity to U.S. Fish and Wildlife Service, January 7, 2005). To the extent possible, this analysis distinguishes costs related specifically to LMMV conservation where multiple species are subject of a single conservation effort or section 7 consultation. In the case that another species clearly drives a project modification or conservation effort, the associated costs are appropriately not attributed to the LMMV. For each consultation and conservation effort, this DEA attempts to identify costs specifically related to LMMV. In the case of administrative consultation costs, The DEA applies a standard cost model used to estimate a range of administrative costs of consultation (see Exhibit 4-1). These costs are considered representative of the potential range of costs typically experienced for a consultation regarding a single species. That is, the cost model assumes that consultations involving more than one species typically involve higher administrative costs. Accordingly, although consultations described in the DEA may involve multiple species, the administrative costs as estimated by applying this cost model are considered to be predictive of those costs due specifically to the inclusion of the LMMV in the consultation.

<sup>29</sup> Currently, 4,514 acres of privately owned land exist within the proposed CHD for the LMMV. This analysis assumes, however, that all private lands within the proposed designation will be purchased and placed under Federal management according to the initiatives of the DOD and BLM as described in Section 4.3.3 of this analysis.

mostly recreational land use activities, including OHV use and casual use mining. Additionally, activities that may occur to a lesser extent include: private residential use (mostly homesteads); conservation activities (for desert tortoise and Joshua trees)<sup>30</sup>; non-motorized recreation including hiking, backpacking, nature studies, and walking; right-of-way use for utility lines; installation of fiber optic cables; and road maintenance and designation.

66. This analysis focuses on the following activities identified as the most likely to be affected by CHD for the LMMV.
- 1) Military activities on Fort Irwin Lands
  - 2) Off-highway vehicle (OHV) activities
  - 3) Casual use mining
  - 4) Conservation/habitat restoration activities

These activities are summarized in this section and described in detail in Sections 3 and 4 of this analysis.

### **2.2.1 Military Activities on Fort Irwin Lands**

67. The National Training Center (NTC) at the Fort Irwin Military is used to train United States Army brigade-sized (3,000 to 5,000 soldiers with 1,400 vehicles) units. The Mojave Desert is an ideal site to simulate a realistic battlefield environment, allowing space for tank maneuvers, for training purposes.<sup>31</sup> Recently, new equipment, technology, and Army fighting doctrine have generated new training requirements for troops.
68. The visiting units come from all over the U.S. to train at Fort Irwin and a permanent “opposing force” of 2,500 soldiers and up to 700 vehicles is stationed at the Fort. Currently, six to nine Army battalions train at the NTC during each training rotation, which lasts from 31 to 38 days. A given training rotation may involve up to 8,250 soldiers and over 2,700 vehicles.
69. Following a Land Use Requirement Study (LURS) in 1993 contemplating realistic battlefield training needs and anticipating evolving needs into the future, the Army determined a need for approximately 274,167 additional acres of maneuverable land. Accordingly, land withdrawal legislation was submitted to Congress on September 26, 2001, and the *Fort Irwin Military Lands Withdrawal Act of 2001* (P.L. 107-107, Title XXXIX Section 2901 et seq. December 28, 2001) was signed into law on January 11,

---

<sup>30</sup> Joshua trees are protected on BLM lands; digging, removing, or destroying any tree or shrub is prohibited on these lands. These prohibitions may offer protection to the LMMV in the form of reduced ground disturbance in the habitat area.

<sup>31</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, February 10, 2004.

2002 by President George W. Bush. This legislation withdrew for military use approximately 118,674 acres of land formerly under BLM jurisdiction and interspersed with private lands that will be acquired at a later date.

70. The DOD and the Service have consulted on the impact of current operations at Fort Irwin on the desert tortoise.<sup>32</sup> At that time, the LMMV was not yet a listed species. Because the Fort Irwin boundaries at that time (pre-expansion of the base) did not contain any of the LMMV habitat areas, the LMMV was therefore not included in that basewide consultation.<sup>33</sup> The DOD is in the process of revising its draft Integrated Natural Resources Management Plan (INRMP) to include resource management measures on the expansion area lands, including LMMV conservation measures.
71. The majority of the proposed CHD, 52 percent, lies within Fort Irwin boundaries. The major potential adverse impact to Lane Mountain milk-vetch is the degradation of habitat and potential loss of plants on approximately 6,660 acres of known habitat for the plant. Mitigation proposed by the DOD to address this impact includes designating as conservation areas over 4,019 acres of occupied habitat on Fort Irwin, and the acquisition of approximately 13,000 acres outside of the boundaries of Fort Irwin. The Service is proposing to designate privately owned land outside of Fort Irwin. Acquisition of these lands would place the entire proposed critical habitat for the LMMV into either DOD or BLM ownership.<sup>34</sup>
72. NASA's major activity within and directly surrounding the lands proposed for CHD is maintenance of its satellites. The "Venus Site," which abuts the proposed CHD for the LMMV is the only NASA site for high-powered research and development.<sup>35</sup> These space communication projects are vital to future space exploration efforts, including extended missions to the Moon and eventually to Mars. While NASA does not plan to construct any permanent buildings within the area proposed for critical habitat, they do plan to continue using the area as a test site, which may involve temporary construction of test stands and antennae.<sup>36</sup>

---

<sup>32</sup> U.S. Fish and Wildlife Service, *Biological Opinion on Reinitiation of Formal Consultation on the Army's Current Mission at the NTC, Fort Irwin, California* (USFWS, BO Number 1-8-95-F-16R, 1995), September 15, 1995.

<sup>33</sup> Written communication from U.S. Fish and Wildlife Service, Ventura Field Office, February 17, 2005.

<sup>34</sup> "Mitigation proposed to address this impact includes preservation of over 4,019 occupied habitat acres (1,626 ha) on Fort Irwin by designating them as conservation areas and the proposed acquisition of approximately 13,000 acres outside the boundaries of Fort Irwin to place all known Lane Mountain milk-vetch habitat into public ownership." Charis Professional Services Corporation, *Biological Assessment for the Proposed Addition of Maneuver Training Land at Fort Irwin, CA*, May 2003, page 5-27. The Service has stated that the DOD's off-site private land purchase estimate of 13,000 acres is incorrect and infeasible, as there are not 13,000 acres of LMMV habitat off of DOD and BLM lands (written communication with U.S. Fish and Wildlife Service, Ventura Field Office, August 20, 2004).

<sup>35</sup> Personal communication with Peter Robles, National Aeronautics and Space Administration, March 4, 2004.

<sup>36</sup> Letter from Dr. Robert A. Parker, Director, NASA Management Office, Jet Propulsion Laboratory, to Field Supervisor, Ventura Fish and Wildlife Office, "Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Astragalus Jaegerianus* (Lane Mountain Milk-vetch)", June 7, 2004.

## 2.2.2 OHV Activities

73. OHV activity may constitute a threat to the LMMV by contributing to the direct destruction of plants, crushing and killing them or their associated plant communities, and potentially through alteration of habitat due to increased levels of airborne dust. Vehicular use on BLM lands is currently managed in the proposed CHD according to the California Desert Conservation Area (CDCA) Plan. According to this plan, areas are designated as “open,” “closed,” or “limited” according to the following definitions.<sup>37</sup>

- **Open areas** permit travel “anywhere in the area if the vehicle operated responsibly in accordance with the regulations and subject to permission of private landowners if applicable.” According to the CDCA plan, only lands categorized as Class I, or “intensive use,” and certain sand dunes and dry lakebeds have designated open routes. None of the lands proposed for CHD for the LMMV are designated as Class I.<sup>38</sup>
- **Closed areas** prohibit access by motorized vehicles except: “(1) fire, military, emergency or law enforcement vehicles when used for emergency purposes; (2) combat or combat support vehicles when used for national defense purposes; (3) vehicles whose use is expressly authorized by an agency head under a permit, lease, or contract; and (4) vehicles used for official purposes by employees, agents, or designated representatives of the Federal Government or one of its contractors.”
- **Limited areas** limit use by motor vehicles in one or more of the following ways: “(1) number of vehicles allowed, (2) types of vehicles allowed, (3) time or season of vehicle use, (4) permitted or licensed vehicle use only, (5) establishment of speed limits.” At a minimum, vehicle use is restricted to existing routes and off-road use is not permitted.<sup>39</sup>

74. BLM does not issue permits for recreational OHV use within the areas proposed for CHD for the LMMV. OHV users are required to abide by the area designations. All areas within the proposed CHD are currently designated as “closed” or “limited.” Route designations are primarily undertaken to minimize surface disturbance, and are also

---

<sup>37</sup> Descriptions of route designations are from: Bureau of Land Management, “The California Desert Conservation Area Plan 1980, as Amended,” March 1999.

<sup>38</sup> U.S. Fish and Wildlife Service, *Biological Opinion for the California Desert Conservation Area Plan [Lane Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort]*, 6840(P) CA-063.50, 1-8-01-F-18, February 27, 2002.

<sup>39</sup> Ibid.

driven by desert tortoise conservation objectives.<sup>40</sup> These designations also, however, offer benefit to the LMMV.

75. Occasionally, permitted “dual sport” events may be routed through the lands proposed for CHD. A dual sport event is a self-guided motorcycle ride that may take place on highways, hardtop roads, backcountry and desert dirt roads, and trails across terrain not accessible by conventional automobile.<sup>41</sup> The participants are required to remain on open routes, and adherence to this rule is anticipated to avoid impacts to the LMMV. The BLM does, however, have the discretion to change the routes of these events if necessary to protect the species or habitat lands.

### **2.2.3 Mining Activities**

76. Mining for placer gold, which involves panning the soil for gold found as small flakes and nuggets, occurs within the proposed CHD. No commercial mines exist; however, 16 mining claims exist on BLM lands within the boundaries of the proposed CHD belonging primarily to small mining clubs.<sup>42</sup> Although this mining activity has the potential to impact LMMV habitat, most of the digging and panning occurs in pockets of deeper, gold-bearing soil, rather than the shallow-soiled areas where individuals of LMMV occur.<sup>43</sup>
77. In the past, casual use miners have not been required to file a Plan of Operation with the BLM as their disturbance to the land was likely to be negligible.<sup>44</sup> According to a forthcoming amendment to the California Desert Conservation Area Plan, the West Mojave Plan (WMP), as described in the following section, casual use mining affecting listed species or habitat, such as the LMMV, may require BLM review and permitting. Further, according to the WMP, the BLM will compensate claimants with valid mining claims on BLM managed lands. DOD funding will be dedicated for purchase of all private lands, including those used for small-scale recreational mining, within LMMV conservation areas. If Congress approves the minerals withdrawal of these areas as

---

<sup>40</sup> Personal communication with Charles Sullivan, Bureau of Land Management, Barstow Field Office, March 3, 2004.

<sup>41</sup> Bureau of Land Management, California Desert District, Instruction Memorandum CDD 98 – 09 on Policy for Permitting Dual Sport Events, accessed at <http://www.blm.gov/nhp/efoia/ca/Public/RAs/IMS/1998/CDDIM98-09.htm> on May 10, 2004.

<sup>42</sup> Written communication from U.S. Fish and Wildlife Service, Ventura Field Office, February 17, 2005.

<sup>43</sup> Communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004. The BLM stated that only casual use mining exists within the proposed critical habitat designation (personal communication with Charles Sullivan, BLM, March 3, 2004).

<sup>44</sup> Letter from Tim Read, Field Manager, BLM to Greg Herrig, First Class Miners, Reference 3000, 8300(P) CA-680.27, dated January 9, 2003.

proposed in the WMP, staking new claims in these areas would be precluded, and mining would be restricted to unrelinquished valid claims.<sup>45</sup>

#### **2.2.4 Conservation/Habitat Restoration Activities**

78. The West Mojave Plan (WMP) is currently being developed by the BLM, Service, State of California, and multiple local jurisdictions as a multi-species conservation plan and an amendment to the California Desert Conservation Area Plan for an area of approximately 9.4 million acres within the Mojave Desert, including the LMMV CHD. The area includes both public and private lands extending from the town of Olancho in the north to the San Bernardino Mountains in the south, and from Antelope Valley in the west to the City of Twenty-Nine Palms in the east.
79. The draft plan proposes reserve-level management for all occurrences for the LMMV outside the boundaries of Fort Irwin in the form of two conservation areas. Major provisions proposed for the LMMV include: acquisition of private lands, fencing, signage, and withdrawal from mineral entry.<sup>46</sup>

---

<sup>45</sup> Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment." May 2003, page 4-104. Written communication with U.S. Fish and Wildlife Service, Ventura Field Office, August 20, 2004.

<sup>46</sup> *Ibid.*, page 2-98.

80. This section summarizes key economic and demographic information for the counties likely to be impacted by the proposed CHD for the LMMV. Based on investigation into ongoing land uses in the proposed CHD, a limited number of land use activities have been, or likely are to be, affected by the listing and designation. County level data are presented to provide context for the discussion of economic impacts and to illuminate trends that may influence these impacts.
81. To provide context and comparison for the economic analysis, this section first provides demographic information for the broader study area, San Bernardino County, and more specifically the City of Barstow, which is the closest, populated area to the proposed CHD. This section then details economic activities taking place within and surrounding the proposed CHD.

### **3.1 Economic Profile of San Bernardino County**

82. San Bernardino County experienced significant population growth from 1990 to 2000 (Exhibit 3-1) and is anticipated to grow rapidly over the next 20 years. The principal economic sectors in San Bernardino County are manufacturing, retail trade, and services.

#### **3.1.1 Population Patterns**

83. In 2000, San Bernardino County had a population of 1,709,434, a 21 percent increase from 1990. The County is anticipated to experience continued growth over the next twenty years, with population forecast to reach 2,800,900 in 2020, a 64 percent increase over the 2000 estimate. As Exhibit 3-1 illustrates, all California counties surrounding the proposed CHD are forecast to experience population growth over 20

years.<sup>47</sup> Population of surrounding counties is discussed as individuals from these areas that recreate within the proposed CHD areas may be impacted by the designation.

**EXHIBIT 3-1: POPULATION ESTIMATES FOR COUNTIES SURROUNDING THE PROPOSED CHD**

	1990	2000	2010	2020	% Increase 1990-2000	% Increase 2000-2020
United States	248,709,873	281,421,906	--	--	13.2%	--
San Bernardino	1,418,380	1,709,434	2,231,600	2,800,900	20.5%	63.8%
Riverside	1,170,413	1,545,387	2,159,700	2,817,600	32.0%	82.3%
Orange	2,410,556	2,846,289	3,266,700	3,541,700	18.1%	24.4%
Kern	543,477	661,645	871,600	1,088,600	21.7%	64.5%
Inyo	18,281	17,945	19,400	20,700	-1.8%	15.4%
Los Angeles	8,863,164	9,519,338	10,605,200	11,584,800	7.4%	21.7%
Clark (Nevada)	741,459	1,375,765	1,827,770	--	85.6%	--
Nye (Nevada)	17,781	32,485	58,517	--	82.7%	--

Sources: (1) U.S. Census Bureau, State & County QuickFacts, accessed at <http://quickfacts.census.gov/qfd/> on May 10, 2004; (2) California Department of Finance, Demographic Research Unit, "Interim County Population Projections, Estimated July 1, 2000 and Projections for 2005, 2010, 2015 and 2002", <http://www.dof.ca.gov/HTML/EMOGRAP/repndat.htm#projections> accessed on May 10, 2004; (3) Nevada State Library and Archives, "Population Projections for Nevada Counties: 2000 to 2010", <http://dmla.clan.lib.nv.us/docs/nsla/sdc/stats/stat3.htm> accessed on May 11, 2004.

**3.1.2 Business Patterns**

84. The U.S. Census Bureau provides information on annual payrolls and the number of businesses within San Bernardino County industries. In 2001, the principal industries within San Bernardino County, in terms of annual payroll, included services, manufacturing, retail trade, and construction. Annual payroll within these industries totaled approximately \$9.7 billion, representing 73 percent of the total County payroll.
85. Exhibit 3-2 provides industry and payroll data for San Bernardino County. The "Total Establishments" column displays the total number of physical locations at which business activities are conducted with one or more paid employee in the year 2001. These figures provide a measure of the average density of commercial and industrial establishments in the region. For all of San Bernardino County, 27,352 businesses with one or more paid employee had a collective annual payroll of \$13.3 billion.

<sup>47</sup> California Department of Finance, Demographic Research Unit, "Interim County Population Projections, Estimated July 1, 2000 and Projections for 2005, 2010, 2015 and 2002", <http://www.dof.ca.gov/HTML/DEMOGRAP/repndat.htm#projections> accessed on May 10, 2004.

**EXHIBIT 3-2: 2001 COUNTY BUSINESS PATTERNS – SAN BERNARDINO COUNTY (2001 Dollars)**

<b>Industry</b>	<b>Annual Payroll (\$1,000)</b>	<b>% Total Annual Payroll</b>	<b>Total Establishments</b>
Forestry, Fishing, Hunting, and Agriculture support	\$10,669	0.1%	31
Mining	\$57,720	0.4%	37
Utilities	\$129,660	1.0%	85
Construction	\$1,310,921	9.9%	2,885
Manufacturing	\$2,223,027	16.7%	2,116
Wholesale trade	\$1,074,427	8.1%	1,867
Retail trade	\$1,488,869	11.2%	4,448
Transportation & Warehousing	\$905,188	6.8%	937
Information	\$385,819	2.9%	339
Finance, Insurance, & Real Estate	\$752,424	5.7%	2,485
Services	\$4,721,322	35.5%	11,696
Auxiliaries	\$235,809	1.8%	122
Unclassified establishments	\$8,751	0.1%	304
<b>Total</b>	<b>\$13,304,606</b>	<b>100%</b>	<b>27,352</b>

Source: U.S. Census Bureau, County Business Patterns, <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl> accessed on April 14, 2004. Estimates may not sum due to rounding.

### 3.1.3 Employment by Industry

86. Within San Bernardino County, the largest employment sectors are services, government, and transportation. In 2002, nearly 20 percent of the total jobs in San Bernardino County were government-related. Employment within the trade and services sectors constituted 54 percent of all jobs in the County. Exhibit 3-3 summarizes the employment by industry in San Bernardino County in 2002.

**EXHIBIT 3-3: EMPLOYMENT BY INDUSTRY IN SAN BERNARDINO (2002)**

Industry	Number Employees	% Total Employees
Agriculture	20,900	1.9%
Construction and Mining	91,400	8.5%
Manufacturing	114,700	10.6%
Transportation and Public Utilities & Retail and Wholesale Trade	224,300	20.8%
Information	14,000	1.3%
Finance, Insurance, and Real Estate	39,800	3.7%
Services	361,400	33.5%
Government	212,400	19.7%
<b>Total Employment</b>	<b>1,078,900</b>	<b>100.0%</b>

Source: California Employment Development Department, <http://www.calmis.ca.gov/file/COsnaps/RivSBsnap.pdf> accessed on May 10, 2004.

**3.1.4 Unemployment**

87. Exhibit 3-4 summarizes unemployment rates for the geographic region of concern. San Bernardino County has experienced relatively low levels of unemployment. Average unemployment in 2003 was 5.8 percent, slightly lower than California's rate of 6.7 percent. The City of Barstow, however, which is closest to the proposed CHD for the LMMV, has recently experienced a slightly higher unemployment rate of approximately 7.4 percent.

**EXHIBIT 3-4: COMPARISON OF UNEMPLOYMENT RATES AT THE LOCAL, REGIONAL, AND NATIONAL LEVELS**

Year	All U.S.	California	San Bernardino County	City of Barstow
1990	5.6%	5.80%	5.6%	7.2%
1995	5.6%	7.80%	7.9%	10.1%
2000	4.0%	4.90%	4.70%	6.1%
2003 to date	6.0%	6.7%	5.8%	7.4%

Source: Bureau of Labor Statistics and California, Employment Development Department, Labor Market Information, <http://www.calmis.ca.gov/htmlfile/subject/lftable.htm>, accessed on April 22, 2004.

**3.2 Economic Activities in Critical Habitat Region**

88. Businesses located in the major towns within San Bernardino County may benefit from the activities that occur within the proposed CHD, specifically casual use mining and dual sport activities on BLM lands. The remainder of this section provides

socioeconomic information on the economically productive land use activities within the proposed critical habitat area, recreation associated with OHV use and mining.

### 3.2.1 Dual Sport Events

89. The high Mojave Desert region attracts approximately two million visitor-trips per year for OHV recreation. OHV recreation statewide contributes more than \$3 billion to the California economy, generates approximately \$1.6 billion in income, and affects 43,000 jobs.<sup>48</sup> A portion of the recreationists that visit the areas within or surrounding the CHD boundaries are individuals or clubs that engage in sport-utility vehicle (SUV), all-terrain vehicle (ATV), or motorcycle off-roading. BLM, however, does not allow use of vehicles off of designated routes within the areas proposed as critical habitat for the LMMV according to the CDCA plan as described in Section 2.3.2 of this analysis. This analysis does not anticipate that the activities of OHV users and dual sport participants will be constrained by the proposed designation, as they are already required to remain on designated routes. The following discussion is provided, however, to contextualize the proposed designation in terms of land use activities and their economic contribution.
90. Dual sport motorcycles are designed to perform off-street, but are also “street legal.” The BLM identified two dual sport events that have passed through the proposed critical habitat in recent years. First, the *LA to Barstow to Las Vegas* event (“LA B 2 V”) runs from Los Angeles to Las Vegas by way of Barstow and attracts up to 400 participants annually.<sup>49</sup> Second, “Lost Coyotes” is a motorcycle club based in Lancaster, California that participates in AMA District 37 desert events that may pass through lands containing the proposed CHD. The Lost Coyotes host a much smaller event than the LA B 2 V with nearly 80 entries that tour on existing roads and trails. Participants come from southern and central California, as well as from southern Nevada.<sup>50</sup>
91. The Service issued a biological opinion in October 1991 on dual sport rides in the California Desert, stating that a section 7 consultation is only required during the time when the desert tortoise is not in hibernation, March 2 through October 31. If a promoter wishes to plan a dual sport event outside of these dates, such as the LA B 2 V, the Service mandates a series of stipulations. The ride must be conducted entirely on existing open routes of travel, and no Federally listed or candidate species other than the desert tortoise or Mohave ground squirrel (for which the activities must be adequately managed) may be affected. Monitoring and evaluation of compliance has shown that promoters can

---

<sup>48</sup> Bureau of Land Management, California Desert District. “Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment.” May 2003, page 3-238.

<sup>49</sup> Four Strokes Only Corporation, “The History of Dual Sport Motorcycling, <http://www.4strokesonly.com/DSEOrigins.html>, accessed on May 12, 2004.

<sup>50</sup> Personal communication with Jim Wilson, “Lost Coyotes Motorcycle Club”, May 10, 2004.

generally comply with the Service's stipulations without jeopardizing the viability of their events.<sup>51</sup>

92. Participants in dual sport events that may pass through the proposed CHD typically originate from central California, southern California, and Southern Nevada. It is estimated that dual sport riders invest anywhere from \$3,000 to \$7,000 for the LA B 2 V Race. This includes event entry fees of \$50 to \$60, American Motorcyclist Association (AMA) membership dues of \$39 per year, and motorcycle equipment (a new motorcycle and related equipment costs from \$6,000 to \$7,000 whereas a used motorcycle and related equipment may cost \$3,000 to \$5,000).<sup>52</sup>
93. In addition to these durable goods, dual sport participants may spend money on a variety of consumable goods and services during the course of the event. LA B 2 V participants typically incur trip-related expenditures in the City of Barstow.<sup>53</sup> Categories of trip-related expenditures made by dual sport participants include food and drink, motorcycle equipment, transportation (including fuel) and lodging (including hotels and camping fees). Trip expenditures for consumable goods are anticipated to total approximately \$200 for a one-day event.<sup>54</sup>
94. Businesses that operate within Barstow, such as the eating establishments and hotels, may therefore benefit from the recreational activities that occur within the proposed CHD. Barstow also has one small business that sells dual sport motorcycles and accessories (Barstow Motorcycle Center) and markets to both local and tourist populations.<sup>55</sup>
95. These businesses are not anticipated to incur economic impacts associated with the CHD for a number of reasons. First, vehicles are currently restricted to open routes and may still continue to use the area adhering to that stipulation. Second, the Johnson-Stoddard Valley area, south of the proposed lands, is designated as an open ORV area and, as such, attracts more OHV recreationists than the proposed critical habitat lands. Net OHV use in the region is therefore not anticipated to be limited.<sup>56</sup>

### **3.2.2 Casual Use Mining**

96. Southern California is one of the most highly mineralized areas of the United States. Within the Coolgardie area of the proposed CHD, approximately 460 acres of land have been determined to have moderate potential and 7,500 acres have high

---

<sup>51</sup> Personal communication with Bureau of Land Management, Barstow Field Office, April 14, 2004.

<sup>52</sup> Personal communication with Vito Valento, Barstow Motorcycle Center, April 22, 2004.

<sup>53</sup> Ibid.

<sup>54</sup> Personal communication with Jim Wilson, Lost Coyotes Motorcycle Club, May 10, 2004.

<sup>55</sup> Personal communication with Bureau of Land Management, Barstow Field Office, April 14, 2004.

<sup>56</sup> Written communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

potential for recovery of placer gold deposits. There is no estimate of the amount of unrecovered gold within this area.<sup>57</sup>

97. The California Department of Conservation, Office of Mine Reclamation (OMR) and the State Mining and Geology Board (SMGB) are charged with administering the California Surface Mining and Reclamation Act (SMARA). SMARA was enacted in order to manage California's mineral resource supply and minimize the impacts of surface mining to public health, property, and the environment. The primary underlying motivation of SMARA is to ensure that mined lands are reclaimed to provide for the protection and subsequent beneficial use of the reclaimed lands. SMARA requirements apply to any parties engaged in surface mining operations in California, including those on BLM lands, which disturb more than one acre or remove more than 1,000 cubic yards of material.<sup>58</sup> The casual use gold mining that exists within the proposed critical habitat for the LMMV, however, is unlikely to result in this level of disturbance.
98. No commercial mines exist within the LMMV habitat lands.<sup>59</sup> There are, however, 22 casual use mining claims within the proposed CHD boundaries on BLM lands.<sup>60</sup> Mining is considered casual use if it involves "(a)ctivities ordinarily resulting in only negligible disturbance of the Federal lands and resources. For example, activities are generally considered casual use if they do not involve the use of mechanized earth moving equipment or explosives or do not involve the use of motorized vehicles in areas designated as closed to off-road vehicles."<sup>61</sup>
99. Casual use miners are not typically required by the BLM to file a plan of operation. Mining activities subject to the following guidelines are determined to result in "negligible" disturbance, and as such are considered casual use:
- Excavation and processing is limited to hand tools, such as a pick, shovel, drywasher, or related implement;
  - Site clean-up must occur on a daily basis, including keeping all trash and food items in closed containers;

---

<sup>57</sup> Communication between U.S. Fish and Wildlife Service, Ventura Field Office, June 10, 2004, and personal communication with Ken Shulte, Bureau of Land Management, Barstow Field Office, July 29, 2004.

<sup>58</sup> California Department of Conservation, Surface Mining and Reclamation Act and Associated Regulations, Public Resources Code, Division 2, Chapter 9, Section 2710 et seq.

<sup>59</sup> Two miners with Plans of Operation exist within this area. They are not, however, commercial miners. One employs mechanical earth-moving equipment and one lives on site. As a result, neither qualify as "casual use" miners and were required to file Plans of Operation. Personal communication with Ken Shulte, Bureau of Land Management, Barstow Field Office, July 29, 2004.

<sup>60</sup> Personal communication with Charles Sullivan, Bureau of Land Management, Barstow Field Office, March 3, 2004.

<sup>61</sup> 43 CFR 3809.

- Vehicular traffic is restricted to routes designated as open;
- Perennial vegetation and desert tortoise burrows are not disturbed;
- Pits and trenches must be constructed so that they will not entrap the desert tortoise or other wildlife;
- Handling of desert tortoise is prohibited unless the tortoise is in imminent danger;
- All pets must be restrained or confined; and
- Prior to leaving the area, all disturbed areas must be backfilled, recontoured, and raked.<sup>62</sup>

100. Members of at least four recreational prospecting organizations frequent this area. The larger clubs maintain membership of approximately 400 families.

101. The mineral deposits in the LMMV proposed CHD occur across a broad valley and are mostly recovered in tiny particles in the upper few feet of alluvial cover. Gasoline or hand-powered dry washing has occurred in this area since 1900. It is estimated that since this time, the total value of recovered placer gold is approximately \$100,000.<sup>63</sup> Accordingly, it is unlikely that the casual use mining that occurs in this area is conducted for economic reasons. It is more plausible that recreationists derive welfare benefits from visiting unpopulated desert areas and engaging in mining as a leisure activity.

---

<sup>62</sup> Bureau of Land Management, Barstow Field Office handout, "Casual Use Mining Guidelines in the Barstow Resource Area."

<sup>63</sup> Leszykowski, A., et al., 1993, "Mineral Resources of the West Mojave Desert Tortoise Habitat (category one and two lands)," U.S. Bureau of Mines, Western Field Operations Center, Special Publication, unpublished report prepared at the request of the BLM, 1993, page 43.

102. This section considers the economic impacts of actions taken to protect the LMMV and its habitat. It quantifies the economic effects of the proposed CHD, as well as protective measures taken as a result of the species' listing or other Federal, State, and local laws that aid habitat conservation in the areas proposed for designation. First, it provides an estimate of *pre-designation impacts*, which are associated with species and habitat conservation efforts in place from the time of listing to final designation of critical habitat as proposed by the Service. Impacts associated with these management efforts may be on-going until the time of final designation. Second, this section provides estimates of *post-designation impacts*, potential future impacts associated with the proposed CHD and other species and habitat conservation management efforts related to the LMMV.
103. Economic impacts associated with LMMV conservation are related to two main issues, species conservation efforts at Fort Irwin, and management of species and habitat according to the proposed West Mojave Plan (WMP), which proposes conservation measures for the proposed CHD on BLM and private lands. Significant uncertainty exists in estimating the economic impact of LMMV-related conservation efforts primarily because this analysis does not quantify the potential impacts to military readiness. The DOD is concerned that military training activities may be negatively impacted as a result of designating critical habitat on military training lands outside of the proposed LMMV conservation areas at Fort Irwin as discussed in section 4.1.<sup>64</sup>
104. The impacts associated with past and potential future species and habitat management efforts are manifested in economic efficiency effects (i.e., social welfare) as outlined below.
- Administrative Costs: Costs associated with engaging in section 7 consultation, including time spent attending meetings, preparing letters and biological assessments, and in the case of formal consultations, the development of a Biological Opinion by the Service are quantified as

---

<sup>64</sup> In its Biological Opinion on the DOD's proposal to conduct military training in the Fort Irwin expansion area, the Service made a "no jeopardy" finding regarding the LMMV. The DOD's proposal included the establishment of over 4,019 acres at Fort Irwin as conservation areas for the LMMV. These areas would not be subject to training activities. The Service is proposing to designate approximately 15,000 acres of critical habitat within Fort Irwin boundaries.

administrative costs. Section 7 consultation can require substantial administrative effort on the part of all participants. These impacts are measured as the cost of labor required to fulfill these managerial duties. Estimates of per-effort costs associated with informal and formal consultations are presented in Exhibit 4-1. Costs of the biological assessment are typically borne by the Action agency. Unless otherwise stated, this table is used to develop total administrative costs for consultations associated with activities within the proposed CHD for the LMMV.<sup>65</sup>

- Project Modification Costs: Species and habitat management efforts that involve project consultation activity are likely to result in project modifications to comply with the goals of the management efforts. Costs of implementing these modifications are associated with changes in labor or material requirements that may occur at one point in time and/or be on-going.

**EXHIBIT 4-1: ESTIMATED ADMINISTRATIVE COSTS OF CONSULTATION EFFORTS FOR LMMV (PER EFFORT)<sup>66</sup>**

<b>Consultation Type</b>	<b>Service</b>	<b>Action Agency</b>	<b>Biological Assessment</b>	<b>Total Costs</b>
Informal Consultation	\$1,000 - \$3,100	\$1,300 - \$3,900	\$0 - \$3,200	\$2,300 - \$10,200
Formal Consultation	\$3,100 - \$6,100	\$3,900 - \$6,500	\$3,200 - \$30,000	\$10,200 - \$42,600

<sup>65</sup> A comment provided on the draft version of this analysis stated that the range of administrative consultation costs applied in the DEA is too broad and offers that Federal agencies likely keep better track of consultation costs and may provide a more realistic range of costs (Letter from California Native Plant Society and Center for Biological Diversity to U.S. Fish and Wildlife Service, January 7, 2005). This analysis employs a consultation cost model (see Exhibit 4-1) to represent a likely range of administrative costs of informal and formal section 7 consultations. The broad range takes into consideration that consultations involved varied levels of effort. The cost model is based on anticipated administrative effort from a survey of a number of Federal agencies and Service Field Offices across the country. The administrative effort is typically defined in number of hours spent, and then translated into a dollar value by applying the appropriate average government salary rates. In interviewing the agencies relevant to this analysis, the representatives were asked if the estimated administrative costs seemed reasonable. In the case that the agency anticipated a different range of costs for their particular activities within the proposed designation, that cost range was applied to the relevant consultations in place of the generic cost model estimates. That is, where improved information was available regarding the level of effort for a particular consultation, the unique cost estimates were applied.

<sup>66</sup> The administrative cost model is based on data from the Federal Government General Schedule Rates, Office of Personnel Management, a review of consultation records from several Service field offices across the country, and communications with Biologists in the Service. Low and high estimates primarily reflect variations in staff wages and time involvement by staff. Communication with Mickey Quillman, Directorate of Public Works at Fort Irwin on May 5, 2003 confirmed that average administrative consultation costs were within this range and stated that the administration costs of a full Biological Assessment may be as high as \$30,000 in some cases.

105. The remainder of this section details these economic impacts. The first section discusses pre-designation impacts, including all management efforts that have occurred since the time of the listing of the LMMV in October 1998 through when the final designation as proposed is established in April 2005. The second section discusses post-designation impacts forecast from 2005 through 2025 associated with the proposed rule. Finally, Appendix A presents a screening level analysis of the potential effects of proposed CHD on small entities (i.e., small businesses, small organizations, and small government jurisdictions) to satisfy the requirements of the Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) of 1996.<sup>67</sup> Pursuant to Executive Order No. 13211, Appendix A also reports the potential impacts the proposed CHD is likely to have on the energy industry.
106. Pre-designation impacts in the areas proposed for CHD associated with LMMV conservation are summarized in Exhibit 4-2 and each element of the table is detailed in the subsections of Sections 4.1 and 4.2 of this analysis. Total estimated pre-designation costs associated with the proposed rule, including costs incurred between the time of listing in 1998 through the final CHD for the LMMV in April 2005, are **\$2.23 million to \$2.75 million**.<sup>68</sup> The majority of these costs, approximately 82 percent, concern DOD-related conservation efforts for the LMMV, including conservation efforts at Fort Irwin and DOD-funding of conservation efforts off of the Fort.

---

<sup>67</sup> Regulatory Flexibility Act, 5 U.S.C. 601 et. seq.

<sup>68</sup> Costs of project modifications and conservation measures known to occur in specific years before 2004 are inflated to 2004 dollars using the Bureau of Labor Statistics' Consumer Price Index accessed at <http://www.bls.gov/cpi/>. Costs are inflated to 2004 dollars so that they may be expressed in common terms and compared with future costs, which are likewise discounted to 2004 dollars.

**EXHIBIT 4-2: SUMMARY OF LMMV PRE-DESIGNATION CONSERVATION EFFORTS IN AREAS PROPOSED FOR CRITICAL HABITAT**

<b>Stakeholders</b>	<b>Date</b>	<b>General Description of Impacts of Conservation Effort</b>	<b>Cost (\$2004)</b>
<i>Pre-Designation Conservation Efforts in Proposed CHD for LMMV at Fort Irwin</i>			
Department of Defense (DOD)	January 2001	• Development and review of the report, Key Elements of Proposed Expansion Plan for Fort Irwin and the National Training Center (see Section 4.1.1)	\$20,400 - \$85,200
DOD	March 2001	• Preliminary Service review of Fort Irwin expansion proposal as relates to conservation measures for the LMMV (see Section 4.1.2).	\$20,400 - \$85,200
DOD	2001 - 2003	• DOD funded surveys for LMMV (see Section 4.1.3).	\$530,000
DOD	April 2002	• Administrative costs of informal section 7 consultation with the Service regarding initial review of draft INRMP (see Section 4.1.4).	\$2,300 - \$10,200
DOD	April 2002	• Formal consultation regarding the boundary survey of lands withdrawn according to the Fort Irwin Military Lands Withdrawal Act of 2001 (see Section 4.1.5).	\$13,600 - \$46,000
DOD	April 2003	• Informal section 7 consultation with the Service regarding fencing of the Goldstone population of the LMMV as a conservation area (see Section 4.1.6).	\$53,800 - \$61,700
DOD	June 2003	• Formal section 7 consultation with the Service regarding installation of fiber-optics cable at Fort Irwin (see Section 4.1.7).	\$7,200 - \$15,100
DOD	Ongoing	• Formal consultation regarding the expansion of military training lands at Fort Irwin as relates to conservation measures for the LMMV (see Section 4.1.8)	\$1.45 million
<b>SUBTOTAL ECONOMIC IMPACTS</b>			<b>\$2.09 million - \$2.28 million</b>
<i>Pre-Designation Conservation Efforts in Proposed CHD not associated with Fort Irwin</i>			
BLM	February 2002	• Administrative costs of programmatic section 7 consultation with the Service regarding impacts of the California Desert Conservation Area Plan (CDCA Plan) on the LMMV (see Section 4.2.1).	\$10,200 - \$42,600
BLM	June 2003	• Formal consultation for a route designation project in the western Mojave Desert area associated with the WMP (see Section 4.2.2).	\$96,000 - \$401,000
BLM, San Bernardino County	Ongoing	• Development and implementation of WMP, which establishes conservation areas for the LMMV to be managed at the reserve-level by the BLM (see Section 4.2.3).	\$30,000
<b>SUBTOTAL ECONOMIC IMPACTS</b>			<b>\$136,000 to \$474,000</b>
<b>TOTAL ECONOMIC IMPACTS</b>			<b>\$2.23 million to \$2.75 million</b>

Note: Estimates may not sum due to rounding. Where appropriate, costs are inflated to 2004 dollars using the Bureau of Labor Statistics, Consumer Price index accessed at <http://www.bls.gov/cpi/>.

#### **4.1 Pre-Designation Impacts in Proposed CHD Associated with Fort Irwin**

107. In 1981 Fort Irwin was designated as the NTC according to the mission of the U.S. military. In 1985, 1993, and 2002 the Army conducted Land Use Requirement Studies (LURS) to determine the amount of training land required to meet current and future training needs at the NTC, taking into account the types of units, kinds of maneuvers, and organizational characteristics of realistic battlefield missions. These surveys determined the need for an additional 274,167 acres of maneuverable training lands.<sup>69</sup>
108. In October 2000, the Army introduced a legislative proposal based on the results from the earlier LURS to develop boundaries for a western expansion area following extensive negotiations with the Service regarding desert tortoise habitat areas. In December of 2002, Congress issued its findings, including:
- “(1) The National Training Center at Fort Irwin, California, is the only instrumented training area in the world suitable for live fire training of heavy brigade-sized military forces and thus provides the Army with essential training opportunities necessary to maintain and improve military readiness and promote national security.
- (2) The National training Center must be expanded to meet the critical need of the Army for additional training lands suitable for the maneuver of large numbers of military personnel and equipment, which is necessitated by advances in equipment, by doctrinal changes, and by Force XXI doctrinal experimentation requirements.
- (3) The lands being considered for expansion of the National Training Center are home to the desert tortoise and other species that are protected under the Endangered Species Act of 1973, and the Secretary of Defense and the Secretary of the Interior, in developing a plan for expansion of the National Training Center, must provide for such expansion in a manner that complies with the Endangered Species Act of 1973, the National Environmental Policy Act of 1969, and other applicable laws.”<sup>70</sup>
109. Further, Congress authorized appropriation of approximately \$75 million to undertake appropriate conservation measures to protect the desert tortoise and other endangered species, including the LMMV.
110. On January 11, 2002, the President signed the Fort Irwin Military Lands Withdrawal Act of 2001 (Public Law 107-107) into law. This legislation withdrew for military use approximately 118,674 acres of land formerly under BLM jurisdiction.

---

<sup>69</sup> National Training Center, “Fort Irwin Land Expansion: Background Information,” accessed at [www.fortirwinlandexpansion.com/Background.htm](http://www.fortirwinlandexpansion.com/Background.htm) on March 18, 2004.

<sup>70</sup> Vol. 146 No. 155 Congressional Record H12262 (daily ed. December 15, 2000).

These “withdrawn” acres represent the Fort Irwin expansion area. Two of the populations of the plant, in proposed Units 1 and 2, occur almost entirely on the withdrawn lands. The expansion area lands are also interspersed with private lands that will be acquired at a later date. DOD is currently attempting to purchase each of these private parcels so that the expansion area lands are of continuous DOD ownership.

111. Responsibility for management of Natural Resources on the withdrawn lands was transferred to the DOD. Military training activities will not begin on these lands until compliance with the National Environmental Policy Act (NEPA), and ESA section 7 consultation regarding the LMMV and the desert tortoise have been completed. Military training activities are anticipated to commence in particular portions of the western expansion area in 2009.
112. The National Training Center has engaged the Service in regular review and consultation of its activities associated with acquisition and management of the expansion area lands.
113. NASA currently leases 996 acres within the Fort Irwin boundaries. NASA’s only activity within and directly surrounding the lands proposed for CHD is maintenance of its infrastructure, which is used for deep space communications. The LMMV population at this site is not fenced, although it is contiguous with the fenced Goldstone population on Fort Irwin lands. NASA is planning some expanded development within its leased area.
114. This analysis does not anticipate that past economic impacts were incurred associated with LMMV conservation efforts on the NASA-leased lands. NASA has deferred to Fort Irwin resource management guidelines for management direction for the LMMV. The past programmatic consultation regarding NASA activities involved assessment of impacts to the desert tortoise and did not include the LMMV. NASA plans, however, to report on the status of LMMV on its property in the future.<sup>71</sup>
115. Importantly, this analysis does not make any determination regarding impacts to military readiness. Approximately 15,000 acres of land are proposed for CHD for the LMMV on Fort Irwin lands; roughly 4,000 of these acres have been proposed as LMMV conservation areas, resulting in the proposed designation of approximately 11,000 acres of critical habitat for the LMMV outside of the proposed conservation areas. The DOD plans to conduct military training activities on a portion of these lands outside of the proposed conservation areas and has expressed concern that the designation of critical habitat on these lands will have a negative impact on the military’s ability to train. These lands are important transportation corridors in the Fort’s Western Expansion Area. The Service has determined in a past biological opinion that military training activities, as proposed in the Fort Irwin expansion area, will not result in jeopardy to the LMMV. The DOD, however, has expressed concern that if critical habitat is designated on the acres proposed for designation outside of the proposed conservation areas, the planned military

---

<sup>71</sup> Personal communication with Peter Robles, National Aeronautics and Space Administration, March 4, 2004.

training activities will be subject to lawsuits regarding adverse modification of habitat for the LMMV.<sup>72</sup>

#### **4.1.1 Development and Review of Key Elements Report**

##### *Description of Activity*

116. In its review of the proposed legislation to draw boundaries for a western expansion area at Fort Irwin, Congress directed the DOD and the Department of the Interior (DOI) to collaborate on a proposed plan for the expansion. According to Public Law 106-554 the Secretaries provided to Congress the “key elements” of the proposed expansion plan. The Key Elements Report identified the proposed expansion areas necessary to meet Fort Irwin’s training requirements and set forth proposed conservation measures to preserve and protect species and habitats within the area.
117. Conservation measures relevant to the LMMV outlined in the Key Elements Report included: establishment of areas of critical environmental concern in the West Mojave Desert to provide special management attention for wildlife resources; establishment of an East Alvord Mountain Research Natural Area and a Paradise Valley Research Natural Area to research status and needs of species; acquisition of non-Federal lands within the wildlife management areas in the West Mojave Desert to contribute to conservation efforts; construction of barriers and fences; and conducting research on the LMMV and its habitat.<sup>73</sup>

##### *Economic Impacts*

118. Economic costs associated with the Key Elements Report related to LMMV are assumed to have been primarily administrative, including review of past research and surveys, meeting with scientists and land management agencies, and drafting of the Report. Although this activity was not a section 7 consultation under the Endangered Species Act, the Service estimates the effort required to develop the report was approximately double that of a formal consultation. This analysis accordingly assigns double the administrative costs of a formal consultation, **\$20,400 to \$85,200**, to this past effort.<sup>74</sup>

---

<sup>72</sup> The DOD does not anticipate any negative impact on training activities as a result of setting aside the proposed LMMV conservation areas. The DOD has expressed concern, however, that there may be constraints to military training and subsequent impacts to military readiness as a result of designating critical habitat at Fort Irwin outside of these conservation areas. (Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004, October 15, 2004, and October 18, 2004.)

<sup>73</sup> Department of the Army and Department of the Interior, “Key Elements of the Proposed Expansion Plan for Fort Irwin and the National Training Center,” January 12, 2001.

<sup>74</sup> Written communication from U.S. Fish and Wildlife Service, Ventura Field Office, September 1, 2004.

#### 4.1.2 Preliminary Review of Fort Irwin Expansion Proposal

##### Description of Activity

119. Following the submission of the Key Elements Report, the Service was required to submit to the Secretaries a more specific preliminary review of the proposed plan that identified an approach for implementing the proposed expansion plan consistent with the Endangered Species Act of 1973.<sup>75</sup>
120. The proposed expansion included two parcels of land contiguous with the Fort Irwin boundaries already present. The withdrawal lands were to provide the DOD with an additional, brigade-sized maneuver corridor. A portion of the training lands in the Superior Valley and south was proposed for force-on-force maneuvers involving the movement of tracked and wheeled vehicles. Additionally, the DOD proposed to use a heated mineral oil obscurant for training in the expansion areas. The eastern parcel was proposed to serve as a staging area not subject to force-on-force training.
121. The DOD has committed \$75 million to conservation measures associated with the Fort Irwin expansion. This funding, however, has not yet been appropriated. Conservation measures identified in the preliminary review that are relevant to the LMMV include:
- Establishment of areas of critical environmental concern (ACECs) which encompass wildlife management areas in the western Mojave Desert to provide special management attention to protect and prevent irreparable damage to important wildlife resources.
  - Acquisition of non-Federal lands within the wildlife management areas in the western Mojave Desert.
  - Construction of barriers, fences, and other structures that are designed primarily to conserve species and habitats.
  - Conducting research studies on protecting and promoting conservation on sensitive species
  - Designation and implementation of a vehicle access network, including restoration of closed routes and signage where applicable.
  - Initial research on the impacts of training, such as the effects of dust and obscurants, on endangered species.
  - Withdrawal from mineral entry, and closure to mineral sales and leases.<sup>76</sup>

---

<sup>75</sup> Public Law 106-554.

<sup>76</sup> U.S. Fish and Wildlife Service, "Preliminary Review of the Effects of the Expansion of the National Training Center/Fort Irwin on the Desert Tortoise and Lane Mountain Milkvetch," March 28, 2001.

122. On March 18, 2001, the Service issued a preliminary analysis of the environmental effects of the proposed expansion plan on the desert tortoise and the LMMV. This review noted that the two largest known occurrences of the LMMV were located within the proposed expansion area. The Service also noted that all occurrences of the species within the training corridors with vehicle access would eventually be destroyed. Further, individual plants located outside of these corridors may be affected by dust and the use of obscurants, which may inhibit photosynthesis.

123. In the preliminary review, the Service recommended additional measures to reduce the extent of adverse effects and to acquire better information about the distribution of LMMV and potential indirect effects of training on this species. These measures included:

- Survey suitable habitat for new occurrences of the LMMV that can be protected from all adverse effects. In addition, survey existing population sites to determine abundance and distribution of species.
- Define which areas of the proposed lands will not be used for training.
- Develop a research program to determine whether obscurants or dust generated by training injure individual LMMV plants or degrade habitat.
- Fully conserve, through land acquisition, route designation, and land use planning or withdrawals, any newly located occurrences of the LMMV outside of the proposed expansion area.
- Permanently protect all lands set aside for conservation from activities that would inhibit conservation of the desert tortoise and LMMV.<sup>77</sup>

124. The Service states in this review that some of these objectives may be achieved through the WMP as discussed in Section 4.2.3 of this analysis. This initial proposal and the Service analysis of its impacts were replaced by formal consultation in 2004 as described in section 4.1.8 of this analysis.

#### *Economic Impacts*

125. At the time of the preliminary review, costs associated with the Fort Irwin expansion as related to the LMMV were administrative and included the drafting of conservation measures in the proposed plan, and the Service review of that plan, although this activity was not a section 7 consultation under the Endangered Species Act. The Service estimates that the level of effort required for this project was approximately

---

<sup>77</sup> U.S. Fish and Wildlife Service, "Preliminary Review of the Effects of the Expansion of the National Training Center/Fort Irwin on the Desert Tortoise and Lane Mountain Milkvetch," March 28, 2001.

double that of a formal consultation and accordingly assigns twice the administrative costs of a formal consultation, **\$20,400 to \$85,200**, to this past effort.<sup>78</sup>

#### **4.1.3 DOD Surveys for LMMV**

##### *Description of Activity*

126. Beginning in the summer of 2001, the U.S. Army contracted with Charis Corporation to conduct extensive surveys for the LMMV. These surveys clarified the distribution and abundance of the LMMV across known habitat and also resulted in the detection of an additional, fourth population of the species on Fort Irwin lands in an area known as Goldstone. These surveys were not undertaken as a result of section 7 consultation for the species, but to inform future revisions to the Fort Irwin draft INRMP.
127. In their 2002 report on these surveys, Charis noted that the total number of LMMV individuals from all surveys is approximately 5,800. Incorporating an observability factor of 30 to 70 percent, this results in a total population estimate of 20,534 to 47,890.<sup>79</sup> The Service employed the results of these surveys as a basis for the boundaries of the proposed critical habitat Units, and made subsequent modifications according to various criteria. Exhibit 4-3 maps the results of the surveys at the individual plant level against the proposed CHD for the LMMV.

##### *Economic Impacts*

128. From 2001 to 2003, the DOD spent approximately \$514,000, which translates to **\$530,000** in 2004 dollars, on surveys for the LMMV to determine habitat boundaries and new populations on DOD and BLM lands throughout the proposed CHD.<sup>80</sup>

---

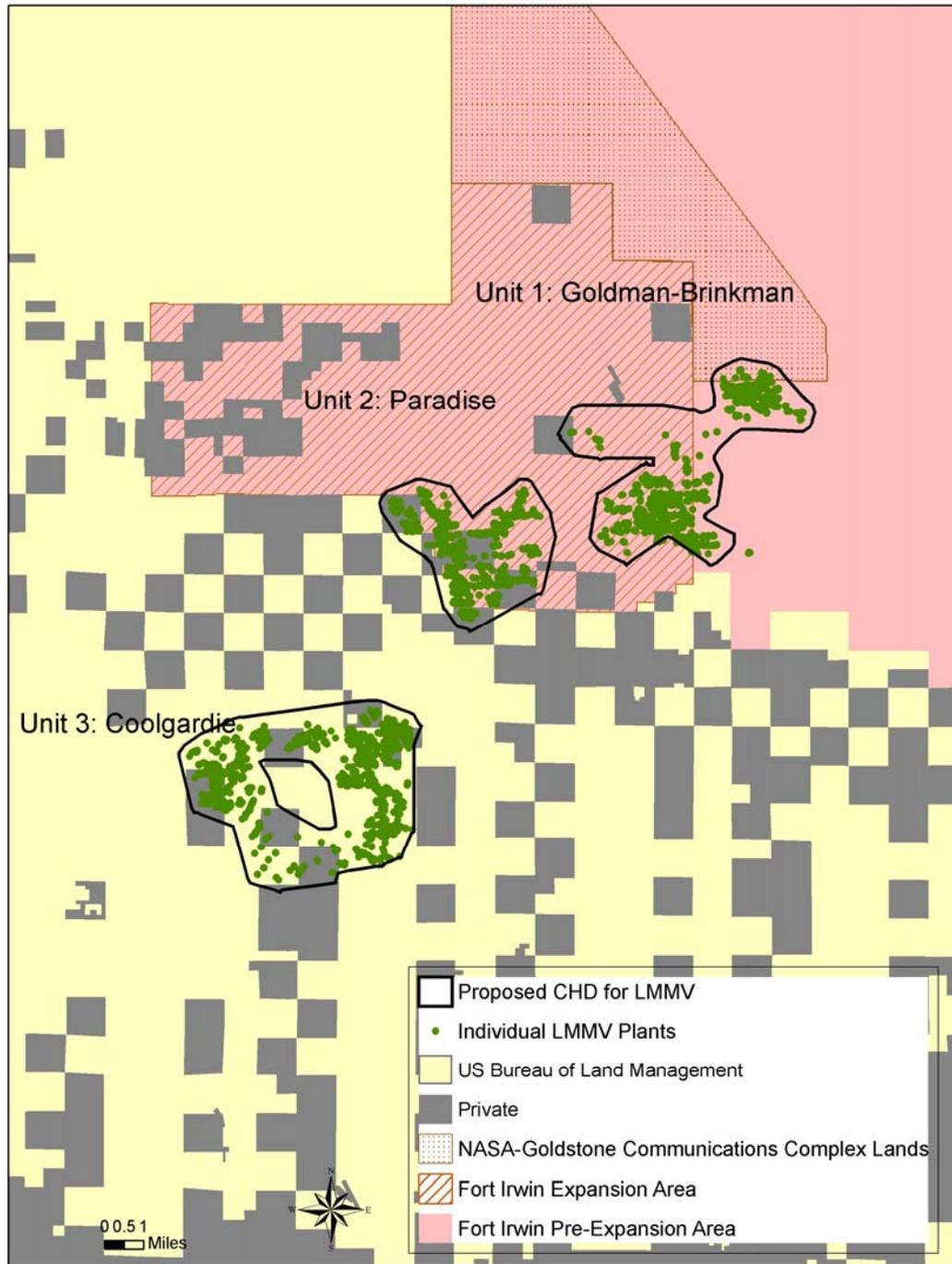
<sup>78</sup> Written communication from U.S. Fish and Wildlife Service, Ventura Field Office, September 1, 2004.

<sup>79</sup> Proposed Designation of Critical Habitat for *Astragalus jaegerianus* (Lane Mountain milk-vetch), published in the *Federal Register* on April 6, 2004, Vol. 69, No. 66

<sup>80</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004.

EXHIBIT 4-3

RESULTS OF LMMV PLANT SURVEYS



#### 4.1.4 Initial Review of Fort Irwin draft INRMP

##### Description of Activity

129. The Sikes Act Improvements Act (SAIA) of 1997 requires military installations to prepare and implement an Integrated Natural Resources Management Plan (INRMP). The purpose of the INRMP is to provide for:
- Conservation and rehabilitation of natural resources on military installations;
  - Sustainable multipurpose use of the resources, which shall include hunting, fishing, trapping, and nonconsumptive uses; and
  - Subject to safety requirements and military security, public access to military installations to facilitate the use of the resources.<sup>81</sup>
130. Section 318 of the Fiscal Year 2004 Defense Authorization Act revises the Endangered Species Act (ESA) provisions related to the DOD. Specifically, section 4(a)(3) of the ESA includes the following:
- “(B)(i) The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is being proposed for designation.
- (ii) Nothing in this paragraph affects the requirement to consult under section 7(a)(2) with respect to an agency action (as that term is defined in that section).
- (iii) Nothing in this paragraph affects the obligation of the Department of Defense to comply with section 9, including the prohibition preventing extinction and taking of endangered species and threatened species.”
131. In August of 2001, Fort Irwin requested Service review of their draft INRMP and associated environmental assessment. In April 2002 the Service responded that they did not concur that all natural resources were adequately addressed in the draft INRMP and

---

<sup>81</sup> Sikes Act Improvement Act of 1997, accessed at <http://www.denix.osd.mil/denix/Public/ESPrograms/Conservation/Laws/sikesamend.html>, May 17, 2004.

recommended that the DOD to initiate formal consultation coincident with proposed activities that may affect listed species.<sup>82</sup>

### Economic Impacts

132. Although Fort Irwin has an existing draft INRMP, it does not currently address the LMMV. In addition, it does not cover the withdrawn lands, which contain the proposed CHD. The DOD is in the process of amending its draft INRMP to address LMMV conservation throughout its lands, including the expansion area. As of July 2004, the DOD submitted a revised draft INRMP and an endangered species management plan for the Service to review. At the time of the initial review, the only costs resulting from the section 7 consultation regarding the draft INRMP were the administrative costs of the informal consultation for the DOD and Service, **\$2,300 to \$10,200**. The costs of incorporating LMMV conservation measures and the expansion area lands into the draft INRMP are associated with the current formal section 7 consultation with Fort Irwin as discussed in Section 4.1.8 of this analysis.

#### **4.1.5 Boundary Survey for Fort Irwin Withdrawn Lands**

##### Description of Activity

133. In April of 2002, the DOD requested formal consultation with the Service regarding establishment of the boundaries of lands withdrawn for the expansion Fort Irwin specifically for mitigation for direct impacts resulting from military training activities on the desert tortoise and LMMV. The DOD proposed to employ a survey crew to access the proposed expansion lands and use standard survey equipment, such as tripods and global positioning system (GPS) units to mark area boundaries.
134. The DOD anticipated ten days to conduct the survey activity and proposed implementing the following conservative behaviors relevant to the LMMV:
- Surveyors would only use all terrain vehicles (ATVs) when required based on walking distance and inability to move survey equipment.
  - ATVs would be limited to a speed of less than five miles per hour.
  - Survey crewmembers would attend awareness training for LMMV and desert tortoise.
  - Survey crews would avoid placing metal stakes directly in a host shrub containing LMMV.

---

<sup>82</sup> Letter from U.S. Fish and Wildlife Service, Ventura Field Office to Mr. Mickey Quillman, Directorate of Public Works, Fort Irwin, "Integrated Natural Resource Management Plan and Environmental Assessment for the U.S. Army National Training Center and Fort Irwin, San Bernardino County, California (AFZJ-PW-EV)," April 10, 2002; written communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

135. The Service issued a BO on the boundary delineation activity on April 19, 2002. It concluded that the proposed action was not likely to jeopardize the continued existence of the LMMV and recommended that if ATVs are used in LMMV habitat, a qualified biologist should precede the vehicles to avoid or minimize impacts to the species and habitat.<sup>83</sup>

#### *Economic Impacts*

136. Minimizing use of ATVs and avoiding placement of stake within host shrubs is not anticipated to have resulted in significant additional costs to the project. In addition to the administrative costs of the formal consultation of **\$10,200 to \$42,600**, this analysis estimates the costs of project modification for the boundary survey of withdrawn lands was approximately \$3,200, which translates to approximately **\$3,400** in 2004 dollars, to hire a biologist to monitor the project.<sup>84</sup>

#### **4.1.6 Informal Consultation Regarding Fencing of LMMV Habitat**

##### *Description of Activity*

137. In February of 2003, Fort Irwin proposed to fence the Goldstone population of the LMMV on Fort Irwin lands to protect them from direct impacts from military training vehicles. There are two types of conservation areas at Fort Irwin, 1) “off-limits,” on which no military activity is allowed, and 2) “no dig,” which specifies that there can be no ground disturbance in the area.<sup>85</sup> The fencing of the Goldstone population creates an “off-limits” area in accordance with the most recent version of the Fort Irwin draft INRMP.
138. The fence consists of two strands of barbed wire connecting metal pickets set six meters apart outlining the conservation area. Reflective Seibert stakes are attached to pickets at approximately 50-meter intervals. The DOD further agreed to monthly monitoring and maintenance when necessary of the fences. The Service agreed that the proposed action was not likely to adversely affect the LMMV.<sup>86</sup> This informal consultation considered both the LMMV and the desert tortoise.

---

<sup>83</sup> U.S. Fish and Wildlife Service, “Biological Opinion for the Boundary Survey of Lands Withdrawn Pursuant to the Fort Irwin Military Lands Withdrawal Act of 2001, San Bernardino County, California (1-8-02-F-27),” April 19, 2002.

<sup>84</sup> Cost of biologist assumes \$40 per hour for ten day project per personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004.

<sup>85</sup> Personal communication with Mark Hessing, Charis Corporation, March 4, 2004.

<sup>86</sup> Letter from U.S. Fish and Wildlife Service, Ventura Field Office, to Lt. Colonel Jeffrey S. Ogden, Directorate of Public Works, U.S. Army, NTC and Fort Irwin, April 30, 2003.

### Economic Impacts

139. The administrative costs of the informal consultation were anticipated to result in costs of approximately **\$2,300 to \$10,200**.
140. Total costs of fencing of the conservation area are included as direct costs associated with conservation measures for the LMMV as the sole reason for the fencing was to protect the Goldstone population of the LMMV. Costs of the fencing, including materials and construction, were approximately \$50,000, or **\$51,500** expressed in 2004 dollars.

#### **4.1.7 Formal Consultation Regarding Installation of Fiber Optics Cable**

### Description of Activity

141. In August of 2002 the DOD requested formal consultation with the Service regarding installation of a fiber optics cable to run approximately 32 miles from Fort Irwin and NASA Goldstone Deep Space Communications Complex to the China Lake Naval Weapons Station lying to the northwest of the expansion area lands. The project is intended to increase bandwidth and fulfill communication needs at Fort Irwin.
142. The LMMV is found in the vicinity of, and south of, the project site. As part of its proposed plan, the DOD specified that a biologist would accompany the construction crews to ensure minimization of damage to LMMV associated with placement of the cable.
143. After reviewing the proposed action, the Service concluded in its June 2003 BO that the proposed action was not likely to jeopardize the continued existence of the LMMV, specifying that if new LMMV populations were identified though the course of the project, they should be reported to the Service. This consultation considered both the LMMV and the desert tortoise.

### Economic Impacts

144. While this activity was a formal section 7 consultation according to the Endangered Species Act, personal communication with the Directorate of Public Works at Fort Irwin stated that the administrative effort was minimal. This analysis therefore assumes the administrative costs of an informal consultation, of **\$2,300 to \$10,200**, are more likely representative of this effort.
145. This project, though originally proposed in August 2002, is just beginning its implementation in May 2004. Project modifications to ensure appropriate consideration of the LMMV of hiring an accompanying biologist results in incremental costs of \$4,800, which is **\$4,900** in 2004 dollars.<sup>87</sup>

---

<sup>87</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004.

#### **4.1.8 Formal Consultation for the Proposed Addition of Training Lands at Fort Irwin**

##### *Description of Activity*

146. As part of the formal section 7 consultation and National Environmental Policy Act (NEPA) requirements associated with the withdrawal of lands for military training activity, the DOD prepared a comprehensive Biological Assessment (BA) published in May 2003. The main provisions for the LMMV put forth in the BA include establishment of two conservation areas for the LMMV, the East Paradise Conservation Area, and the NASA/Goldstone Conservation Area.
147. Related to the LMMV on Fort Irwin, this BA concluded:
- The proposed conservation areas will not likely be directly impacted by military training activities. These areas may be subject to indirect effects, such as airborne dust. Loss of individuals associated with indirect impacts is expected to be minimal.
  - In high-intensity use areas, frequent and intense training activities may ultimately cause the loss of up to 100 percent of the LMMV individuals and habitat.
  - For moderate-intensity use areas, up to 60 percent of the habitat may over time become unsuitable for LMMV.
  - For low-intensity use areas, there may be a 20 percent loss of LMMV habitat over time.
148. The BA further states that approximately 6,660 acres of LMMV habitat on Fort Irwin expansion lands may be subject to direct disturbance from force-on-force military training activities. When adjusted for low, medium and high-intensity use, this translates to a potential elimination of approximately 5,331 acres, which represents approximately 25 percent of the total known habitat for the LMMV. Approximately 4,360 of these acres occur in proposed critical habitat Unit 1 that supports the Brinkman population, and 971 of these acres occur in proposed Unit 2 that supports the Paradise Valley population.
149. Mitigation for this proposed expansion includes purchase of all non-Federal land identified as LMMV habitat outside of the Fort Irwin boundaries. Approximately 2,500 acres of private land have already been purchased: 200 acres within the Paradise Unit and 2,300 within the Coolgardie Unit. Approximately 1,807 acres of private land outside of Fort Irwin are currently being proposed for designation of critical habitat for the LMMV and remain to be purchased in the future.<sup>88</sup> A portion of this land will allow the creation of the West Paradise ACEC to be managed by the BLM contiguous with the East

---

<sup>88</sup> Personal communication with U.S. Fish and Wildlife Service, Ventura Field Office, February 17, 2005, and Priscilla Kernek, Charis Corporation, March 15, 2005.

Paradise Conservation Area. This effort will result in the placement of 100 percent of the LMMV habitat on Federal lands, managed by either the BLM or DOD. Additionally, the DOD proposed to assist with road closures outside of Fort Irwin boundaries.<sup>89</sup>

150. The Service issued a BO regarding the proposed addition of maneuver training lands on March 15, 2004. The BO noted the following change to the BA as a result of numerous subsequent meetings between the Service and Fort Irwin between the submission of the BA and issuance of the BO: creation of a “no dig” area of approximately 1,872 acres in the Brinkman population of LMMV in proposed critical habitat Unit 1. This revises the potential percent acreage of habitat lost due to direct impact from training activities to 21.5 percent (from 25 percent).
151. The Service concluded in its BO that the addition of training lands at Fort Irwin is not likely to jeopardize the continued existence of the LMMV. After the implementation of the proposed action, approximately 58.6 percent of LMMV habitat will be subject to special management as either a conservation area or no dig zone at Fort Irwin, or an ACEC managed by BLM.<sup>90</sup>

#### Economic Impact

152. The DOD estimates that the comprehensive BA as contracted to Charis Corporation cost approximately \$150,000, including research and surveys required for its preparation.<sup>91</sup> This BA, however, included assessment of impact of the proposed activity on multiple species, the desert tortoise being of primary concern. The Service estimates that the administrative efforts associated with this consultation were approximately double that of a high-end cost formal consultation. This analysis therefore applies double the administrative formal consultation cost estimate at the high end, **\$85,200**, for this effort.<sup>92</sup>
153. This analysis assumes the following project costs, although not yet fully implemented, have occurred or will occur before the final designation of critical habitat for the LMMV in April 2005.<sup>93</sup>

---

<sup>89</sup> Charis Professional Services Corporation, *Biological Assessment for the Proposed Addition of Maneuver Training Land at Fort Irwin, CA*, May 2003.

<sup>90</sup> U.S. Fish and Wildlife Service, “Biological Opinion for the Proposed Addition of Maneuver Training Lands at Fort Irwin, California (1-8-03-F-48),” March 15, 2004.

<sup>91</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004.

<sup>92</sup> Written communication from U.S. Fish and Wildlife Service, Ventura Field Office, September 1, 2004.

<sup>93</sup> Importantly, the acquisition of private lands is a sustained effort and, as such, the costs of the purchase of 4,321 acres of private land outside of Fort Irwin are assumed to be post-designation costs and are spread out over the twenty year time frame of the post-designation cost analysis.

- Fencing of the Brinkman “no-dig” area in Unit 1: **\$75,000**<sup>94</sup>
- Education program for contractors and crew members: **\$960** (\$120 per year since species listing)<sup>95</sup>
- Monitoring and maintenance of fencing: **\$8,400**<sup>96</sup>
- Purchase of 2,500 acres of private lands off-site of Fort Irwin: **\$1.25 million**<sup>97</sup>
- Pollination study (conducted in accordance with the BA in 2003): **\$27,000**<sup>98</sup>

154. This analysis accordingly estimates \$1.45 million in pre-designation costs associated with this effort (\$85,200 in administrative costs plus the approximately \$1.36 million described above).<sup>99</sup> Importantly, these costs represent the DOD’s *direct costs* of conservation measures for the LMMV.<sup>100, 101</sup>

---

<sup>94</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 5, 2004.

<sup>95</sup> Assumes 30 minutes per month for training at approximately \$20 per hour (personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 18, 2004). Users of the installation have been subject to this education program since the time of the listing. Therefore, this analysis assumes eight years of costs.

<sup>96</sup> Assumes four worker days, or 32 hours, per month at \$22 per hour. \$8,400 is an annual cost anticipated to occur in one year pre-CHD and each year post-CHD (personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 18, 2004).

<sup>97</sup> DOD has purchased 200 acres of private land within the Paradise Unit and 2,300 acres of private land within the Coolgardie Unit, for a total of approximately \$1.25 million (Personal communication with U.S. Fish and Wildlife Service, Ventura Field Office, February 17, 2005, and Priscilla Kernek, Charis Corporation, March 15, 2005).

<sup>98</sup> Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 18, 2004.

<sup>99</sup> The draft version of this analysis incorporated an additional \$601,000 for DOD funding for fencing out LMMV habitat off of Fort Irwin. Subsequent communication with the DOD determined that they have since determined that fencing of these areas is not necessary and that the funding would be better spend on other efforts, such as ranger to patrol and ticket violators of the vehicle restrictions (Written communication from Priscilla Kernek, Charis Corporation, March 15, 2005). The analysis of post-designation costs in section 4.3 of this report already incorporates costs of increased law enforcement in the areas proposed for critical habitat off of Fort Irwin.

<sup>100</sup> This analysis does not attempt to estimate the potential impacts to military readiness that may be associated with constraining military training at Fort Irwin. The DOD is concerned that designating critical habitat outside of the proposed conservation areas for the LMMV may negatively impact military training in those areas. (Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, October 15, 2004 and October 18, 2004.)

<sup>101</sup> A letter from the California Native Plant Society and Center for Biological Diversity provided during the public comment period for this analysis stated that conservation efforts associated with the Fort Irwin expansion pre-designation consultations are overstated because many of these consultations involved multiple species. The comment stated that DOD monitoring and maintenance costs do not appear to be prorated to include the other sensitive species that occur on DOD lands (Letter from California Native Plant Society and Center for Biological Diversity, January 7, 2005). This analysis identifies costs specifically related to LMMV conservation wherever possible. Specifically, administrative costs as estimated in the DEA (e.g., associated with development of the Key Elements Report, preliminary review of expansion lands proposal and INRMP, etc.) are those estimated to be

## 4.2 Other Pre-Designation Impacts in Proposed CHD

### 4.2.1 Programmatic Consultation on CDCA Plan

155. Congress designated the California Desert Conservation Area (CDCA) in 1980 according to section 601(c) of the Federal Land Policy and Management Act.<sup>102</sup> The \$8 million management plan for the 25 million acres of desert land was approved in 1980.<sup>103</sup> Approximately 12 million acres of the CDCA are public lands.<sup>104</sup> The purpose of the plan is to provide for the use of public lands and resources of the CDCA, including educational, scientific, and recreational uses by designating multiple-use classes for distinct geographic areas. The CDCA plan currently provides the primary management blueprint for BLM management of its California desert lands, including approximately 32 percent of the proposed CHD for the LMMV. At the time of plan approval, the LMMV was not a listed species.<sup>105</sup>

#### Description of Activity

156. In March 2000, the Center for Biological Diversity, Sierra Club, and Public Employees for Responsibility filed suit against the BLM for alleged failure to comply with section 7(a)(2) of the Endangered Species Act (the Act). These groups cited BLM's failure to conduct a programmatic consultation with the Service regarding effects of the CDCA on multiple species, including the LMMV.
157. Although a programmatic-level consultation had not previously been done for the CDCA, the BLM and Service have consulted in the past regarding the impacts of specific CDCA plan provisions on species and habitats. For example, sheep grazing has been terminated from certain areas of critical habitat for the desert tortoise as of 1991.<sup>106</sup> While the removal of sheep grazing from these areas may benefit the LMMV, the habitat areas that overlap with the desert tortoise critical habitat were closed to sheep grazing seven years previous to the listing of the LMMV. This analysis accordingly assumes that the LMMV and its habitat are not causative factors of removing these lands from sheep grazing activities.

---

attributable to consideration of LMMV and habitat. The costs of surveys, monitoring and fencing in the DEA also represent only LMMV-specific efforts and not similar efforts for other species.

<sup>102</sup> 43 U.S.C. §§ 1701-1782, October 21, 1976.

<sup>103</sup> Bureau of Land Management, "The California Desert Conservation Area," accessed at [http://www.ca.blm.gov/cdd/cdca\\_q-a.html](http://www.ca.blm.gov/cdd/cdca_q-a.html) on May 17, 2004.

<sup>104</sup> Written communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

<sup>105</sup> Bureau of Land Management, "The California Desert Conservation Area Plan 1980, as Amended," March 1999.

<sup>106</sup> U.S. Fish and Wildlife Service, *Biological Opinion for the California Desert Conservation Area Plan [Lane Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort]*, 6840(P) CA-063.50, 1-8-01-F-18, February 27, 2002.

158. The Service issued a Biological Opinion (BO) resulting from the programmatic consultation considering certain CDCA Plan impacts on the LMMV, Ash Meadows gumplant, and Amargosa Niterwort in February of 2002. This BO concluded that “(t)he low level of activities that are ongoing within the habitat of the Lane Mountain milk-vetch, Amargosa Niterwort, and Ash Meadows gumplant provides an indication that most occurrences of these species are not experiencing direct and immediate threats and impacts as a result of the implementation of the California Desert Conservation Area Plan.” Through this BO the Service made a “no jeopardy” finding regarding the proposed CDCA Plan.<sup>107</sup>
159. With respect specifically to the LMMV, the Service included the following nonbinding conservation recommendations in the BO:
- Conduct surveys for the LMMV to determine the full extent of its range and document potential threats to the species;
  - Designate areas occupied by the LMMV as areas of critical environmental concern (ACEC) and develop a management plan accordingly;
  - Acquire private lands occupied by the LMMV;
  - Reduce or avoid effects of mineral entry (mining) on the proposed LMMV ACECs, including conducting a validity examination on all mining claims for which a plan of operations is proposed, and acquire any valid mining claims;
  - Determine whether mining club activity on Coolgardie Mesa is affecting the LMMV;
  - Undertake research to ensure that the management actions are appropriate;
  - Conduct studies on habitat requirements, dispersal, colonization, reproduction, and other actions that may limit population numbers or densities;
  - Monitor the demographics, population trends, and threats to the LMMV on a long-term basis;
  - Restore any degraded habitat; and
  - Control the spread of Sahara mustard into LMMV habitat through monitoring and removal.<sup>108</sup>

---

<sup>107</sup> Ibid.

<sup>108</sup> Ibid.

### Economic Impacts

160. If implemented, these nonbinding conservation recommendations will result in economic costs to the BLM, and users of the lands proposed for CHD for the LMMV. The BLM and other stakeholder organizations have developed the West Mojave Plan (WMP) to serve as a multi-species habitat conservation plan (HCP) and as an amendment to the CDCA Plan. The WMP incorporates each of these nonbinding conservation recommendations into its preferred management alternative for the LMMV. Accordingly, this analysis ascribes only the administrative costs of consultation to this programmatic consultation regarding the impacts of the CDCA Plan on the LMMV. The costs of the implementing the conservation measures are more appropriately included as costs associated with development and implementation of the WMP as detailed in Section 4.2.3 of this analysis.
161. The total economics costs of LMMV protection associated with this effort is therefore anticipated to have ranged from **\$10,200 to \$42,600**.

#### **4.2.2 Formal Consultation with BLM Regarding Route Designation in the Western Mojave Desert**

##### Description of Activity

162. In March 2003, the BLM proposed to reduce the density of routes within a large portion of the Western Mojave Desert, including the area occupied by the LMMV. The net reduction in routes was implemented by eliminating access along duplicate routes as part of a major route designation and closure effort conducted for multiple reasons, including minimizing ground disturbance, increasing manageability of the area, and preserving habitat for sensitive species. The associated environmental assessment considered the environmental effects of adopting the “motorized vehicle access network” developed through the WMP planning process. This consultation, while associated with the WMP, was conducted previous to the WMP to meet a court-mandated deadline for the BLM to issue a Record of Decision regarding route designation in the West Mojave plan area.
163. Within the BLM West Mojave Desert Superior subregion which contains the proposed CHD for the LMMV, the goals of the route designation that relate to the LMMV are to:
- Protect the intent of the proposed ACEC and the wilderness area by minimizing the likelihood of the creation of new “volunteer” routes (not designated as open);
  - Minimize redundancy while providing enough network connectivity to minimize the creation of “volunteer” routes;

- Provide adequate commercial and private property access. Provide adequate intraregional connectivity in recreational route network in order to minimize the proliferation of “volunteer” routes. Eliminate routes that are redundant and don’t meet the above criteria; and
- Avoid Lane Mountain milk-vetch.<sup>109</sup>

164. As a result of this plan, the total route mileage within the LMMV habitat area was reduced by 16 percent, from 25 to 21 miles.<sup>110</sup> The BLM intends to “vertically mulch” the closed routes in order to ensure that they are not accidentally re-opened to traffic. Vertical mulching is a generic term that is used to describe the process of camouflaging an area, for example a former road that the BLM would prefer to make unrecognizable to prevent re-use. The process may involve raking, revegetating, moving rocks, constructing barriers, or the use of an earth-moving machine to break apart a route. In the area of the LMMV habitat, however, the process consists mainly of moving rocks and vegetation to obscure the former road.<sup>111</sup>

165. In June 2003, the Service issued a BO regarding the BLM’s proposed activity and concluded: “The proposed action is not likely to appreciably reduce the abundance, reproduction, or distribution of the Lane Mountain milk-vetch because the route network would be less dense than the network that currently exists on the ground.”

166. The Service further recommended that the BLM maintain sufficient law enforcement personnel within the proposed network of routes of travel to ensure compliance with route closures, and that monitoring be undertaken to document the impacts of the route designation on the desert tortoise and LMMV.<sup>112</sup>

---

<sup>109</sup> Bureau of Land Management, California Desert District. “Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment.” May 2003, pages 2-136 and 2-137.

<sup>110</sup> Email from Nanette Pratini, BLM, to Ventura Field Office, U.S. Fish and Wildlife Service, dated May 6, 2004.

<sup>111</sup> Personal communication with Charles Sullivan, Bureau of Land Management, Barstow Field Office, July 26, 2004.

<sup>112</sup> U.S. Fish and Wildlife Service, “Biological Opinion for the Designation of Routes of Travel in the Western Mojave Desert, California (6842 CA-063.50) (1-8-03-F-21),” June 30, 2003.

### Economic Impacts

167. The BLM estimates that approximately \$700,000 was spent surveying all routes within the WMP area to develop the environmental assessment. Of this, approximately **\$20,000 to \$30,000** was associated with the lands proposed for CHD for the LMMV. Further, the Service is anticipated to have borne the average estimated administrative costs of a formal consultation of **\$3,100 to \$6,100**.
168. Costs associated with increased law enforcement specifically within the areas proposed for CHD for the LMMV are speculative. An objective of the WMP related primarily to the presence of critical habitat for the desert tortoise is a gradual increase of law enforcement presence in the area. As the proposed CHD for the LMMV overlaps the desert tortoise critical habitat, it would likely benefit from this initiative as well. The costs are associated with the road designation program throughout the entire WMP planning area:
- Hiring additional law enforcement officers, visitor service staffers, and maintenance workers: \$1.25 million per year;
  - Funding for route rehabilitation: \$100,000 per year;
  - Signing of open routes: \$10,000;
  - Installing informational kiosks and interpretive signing: \$50,000;
  - Developing and publishing maps and brochures: \$20,000; and
  - Maintenance of signs, kiosks, routes, maps, and brochures: \$30,000 per year.<sup>113</sup>
169. This analysis assumes that these measures, although not currently fully implemented, will be implemented previous to the final CHD for the LMMV in April 2005. For costs that occur on an annual basis, this analysis quantifies one year of implementation costs as pre-designation costs (occurring in 2004, previous to final designation in 2005). Importantly, the annual costs listed above cover the routes within the entire planning area of the WMP. The BLM anticipates that a range of five to 25 percent of the route maintenance costs of the WMP are applicable to the LMMV

---

<sup>113</sup> Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment," May 2003, page 2-147.

proposed CHD.<sup>114</sup> Accordingly, this analysis finds that pre-designation costs associated with the implementation of these conservation measures are **\$73,000 to \$365,000.**<sup>115,116</sup>

170. This action is not anticipated to have resulted in significant indirect economic costs from the decreased number of routes as the routes closed were considered “duplicate routes.” Further, the routes involved are rural roads and are not subject to high traffic volume. Reducing the number of roads in the LMMV proposed CHD areas are therefore not likely to result in social welfare impacts associated with increased waiting time and frustration with traffic.

### **4.2.3 Development of the West Mojave Plan**

#### *Description of Activity*

171. The WMP is currently being developed by the BLM, Service, State of California, and multiple local jurisdictions as a multi-species conservation plan and an amendment to the California Desert Conservation Area Plan for an area of approximately 9.4 million acres within the Mojave Desert, including the LMMV CHD; approximately 3.3 million acres are public lands managed by the BLM. This plan serves two needs:

---

<sup>114</sup> Personal communication with William Haigh, Bureau of Land Management, May 18, 2004 and September 13, 2004.

<sup>115</sup> Staff from the U.S. Fish and Wildlife Service, Ventura Field Office estimate that the percentage of route designation costs associated with LMMV protections (up to 25 percent based on professional opinion by the BLM) is likely too high as the route designation effort was conducted for multiple reasons, including minimizing ground disturbance in the desert, and increasing manageability. As it is not possible to determine which of these causative factors is the precipitating reason for each route designation, however, this analysis assumes that up to 25 percent of the route designation costs are co-extensively related to conservation of the LMMV.

<sup>116</sup> With respect to the WMP, a comment from the Center for Biological Diversity and California Native Plant Society stated that costs of route designation appear highly inflated. The comment reasons that if \$700,000 was spent surveying routes in the WMPs 9.4 million acres, \$20,000 to \$30,000 seems high for the 25 miles of routes in the LMMV proposed CHD. The comment further states that the estimate of five to 25 percent of the route maintenance costs as attributable to LMMV conservation seems high as proposed CHD makes up less than 0.2% of the total WMP area (Letter from California Native Plant Society and Center for Biological Diversity to U.S. Fish and Wildlife Service, January 7, 2005). In response, according to the BLM (personal communication with William Haigh, May 18, 2004) the \$700,000 was spent surveying 1.5 million acres within the WMP area, not 9.4 million acres. Second, it is not necessarily appropriate to assume that there is a linear relationship between miles surveyed and survey cost. Rather than develop a “rule of thumb,” the DEA employs specific information provided by the BLM regarding their estimated total expenditures on the surveys (\$700,000) and the portion of that cost relevant to surveys within LMMV conservation areas as outlined by the proposed WMP (\$20,000 to \$30,000). As the BLM conducted these efforts, this is considered to be the best information available regarding these costs. Further, multiple instances of communication with the BLM (May 18, 2004 and September 13, 2004) have supported the DEA estimate that up to 25 percent of route maintenance costs of the WMP are related to LMMV conservation. The BLM notes and the DEA reflects, however, that this is a high end estimate and that the actual range of potential costs related to LMMV conservation is between five and 25 percent of the total costs. Although the proposed CHD is relatively small as compared to the entire WMP area, this range of costs is reasonable considering that sensitive species (i.e., LMMV) are known within the proposed CHD area and therefore more effort may be spent in maintenance of the LMMV occupied acres as compared to other, less sensitive lands.

“1) A regional biological strategy to conserve plant and animal species and their habitats and prevent future listing; and

2) An efficient, equitable, and cost effective process for complying with threatened and endangered species laws.”

172. As a result, the WMP was drafted to meet the requirements of Section 10 (A) of the Endangered Species Act by serving as a multiple species habitat conservation plan on private lands, and as an amendment to the CDCA for public lands.

173. The goal of the WMP as relates to the LMMV is to “Protect viable, unfragmented habitat on public lands throughout the limited range.” To this end, the preferred management alternative described in the draft plan provides reserve-level management for all occurrences for the LMMV outside the boundaries of Fort Irwin in the form of two new areas of critical environmental concern (ACECs), the Coolgardie Mesa ACEC, and the West Paradise ACEC.

- **Coolgardie Mesa ACEC:** This proposed area comprises 13,354 acres. Reserve-level management includes withdrawal from minerals entry (mining), minimization of vehicle routes of travel, fencing of LMMV populations, and acquisition of private lands. The entirety of proposed critical habitat Unit 3 for the LMMV is contained within the boundaries of this ACEC.<sup>117</sup>
- **West Paradise ACEC:** This proposed area comprises 1,243 acres and is contiguous with the East Paradise Conservation Area at Fort Irwin. Reserve-level management includes withdrawal from minerals entry, minimization of vehicle routes of travel, fencing of LMMV populations, and acquisition of private lands. The portion of proposed critical habitat Unit 2 that falls outside of Fort Irwin is contained within the boundaries of this ACEC.

174. Current activities that take place within these lands include casual use mining and occasionally dual sport events as described in Section 3 of this analysis. The management objectives relevant to the LMMV outlined in the draft WMP are as follows:

- Development of two new ACECs;
- Surveys are required prior to issuing permits; no destruction of individuals is allowed;
- Closed routes will be obliterated (vertically mulched); fencing and signage of other routes as appropriate;

---

<sup>117</sup> Personal communication with Charles Sullivan, Bureau of Land Management, Barstow Field Office, July 26, 2004.

- No grazing allowed;
- Acquisition of private lands within the proposed ACECs;
- Withdraw all lands from mineral entry;
- Compensate claimholders with existing valid rights;
- Revise the Management Plan for the Rainbow Basin Natural Area to add LMMV protection as a goal;
- Notify mine claimholders of the presence of the LMMV; restrictions on casual use mining that results in ground disturbance may be developed.<sup>118</sup>

175. In addition, the West Mojave management team will prepare an annual report summarizing progress on conservation measures and status of the LMMV in the WMP planning area.

176. The proposed ACECs for the LMMV contain nearly 8,000 acres of moderate to high potential for gold.<sup>119</sup> The WMP guides the BLM to withdraw from mineral entry the lands subject to the plan. For lands successfully withdrawn from mineral entry, the BLM performs “validity exams” to determine the potential of minerals recovery from particular areas on each of the 22 existing mining claims which cover approximately 1,000 acres.<sup>120</sup>

---

<sup>118</sup> Bureau of Land Management, California Desert District. “Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment.” May 2003, pages 2-98 and 2-99.

<sup>119</sup> Determination of level of potential for gold recovery is used to determine the sale value of the land. Lands with high potential for gold do not necessarily contain economic deposits of the mineral, but rather are lands marked as the best place to research the presence of gold. Therefore, although approximately 8,000 acres of land in this area have moderate to high potential for gold, the casual use mining in the area is not necessarily economically profitable. Communication between U.S. Fish and Wildlife Service, Ventura Field Office, June 10, 2004, and personal communication with Ken Shulte, Bureau of Land Management, Barstow Field Office, July 29, 2004.

<sup>120</sup> A letter provided during the public comment period for a draft version of this analysis stated that, as the WMP is in developmental stages and no Final EIR has been completed, the analysis of the WMP and its conservation efforts for the LMMV are speculative and should be represented as such or deleted from the analysis. Following that, the comment states specifically that the costs of an annual report on the progress of the WMP should be deleted because the WMP is still only a draft, and further, under the WMP, annual monitoring is not required. The same comment letter stated that, similarly, while a minerals withdrawal from the WMP lands is preferable, there is no guarantee this would happen and so associated costs are not certain (Letter from California Native Plant Society and Center for Biological Diversity, January 7, 2005). This analysis acknowledges that the WMP is not yet complete (Section 2.2.4). Significant time and effort, however, have been already devoted to its development (the BLM estimates more than \$5 million has been spent on the Plan) and the NOA for the final EIS is expected to be published in the Federal Register soon (letter from BLM to USFWS, January 6, 2005). As such, this analysis considers the implementation of the WMP to be a reasonable forecast of future land management in the region. Regarding the costs of annual reporting, the West Mojave Management Team (developers of the WMP) anticipates preparing a report summarizing progress specifically on LMMV conservation measures and the status of the LMMV on WMP lands. The DEA estimates that this report will cost on the order of a typical biological assessment, or \$30,000.

### Economic Impacts

177. The development of the WMP to date has cost the BLM and local governments on the order of \$5 million.<sup>121</sup> This includes related research, meetings, and other administrative duties considering all of the species subject to management. Efforts related to route designations as described in Section 4.2.2 of this analysis is the main cost component of the WMP that is relevant to the LMMV.<sup>122</sup>
178. Aside from the costs associated with route designation as described previously in Section 4.2.2, implementation of conservation measures relevant to the include review of mining claims and annual reporting on the status of the LMMV and habitat within the WMP lands. The remaining direct costs of fencing and land acquisition may be funded by the DOD as mitigation for impacts of military training activities as described in Section 4.1 of this analysis.
179. This analysis assumes the following project costs, although not yet fully implemented, will occur before the final designation of critical habitat for the LMMV in April 2005. Annual reporting on the status of the LMMV and habitat is anticipated to result in costs comparable to the development of a BA, **\$30,000 per year**. This analysis assumes one year of these costs previous to the final designation of critical habitat for the LMMV.
180. The anticipated cost for conducting validity exams is approximately \$25,000 per claim. Validity exams on existing mining claims are included in post-designation costs as they will be begin to be conducted if the area is approved by Congress to be withdrawn from mineral entry as proposed by the WMP.<sup>123</sup>

---

<sup>121</sup> A comment letter received during the public comment period stated that the costs of developing the WMP seem underestimated. In response, according to the BLM (personal communication with William Haigh, May 18, 2004), the primary agency involved in the multijurisdictional WMP, the costs of developing of the WMP were approximately \$5 million. Importantly, this estimate is provided for context and is not a cost component of the DEA. The WMP covers a large area and considers many species; the DEA evaluates only the portion of those costs relevant to the LMMV.

<sup>122</sup> Personal communication with William Haigh, Bureau of Land Management, May 18, 2004.

<sup>123</sup> A comment letter regarding the draft version of this analysis stated that the WMP costs should be divided among species considered in the plan. This comment offered that costs of LMMV conservation may be determined by applying the ratio of proposed CHD acreage to the entire WMP acreage or as a percentage of the total number of species covered in the WMP (Letter from California Native Plant Society and Center for Biological Diversity to U.S. Fish and Wildlife Service, January 7, 2005). In response, it is not appropriate in this case to simply divide the acreage of the proposed CHD that overlaps the proposed WMP area by the total acres covered in the WMP to establish the percentage of total WMP costs relevant to the LMMV. It is likely that particular regions of the WMP area require more active management than others. The lands within the WMP that contain proposed CHD for the LMMV, for example, may require particular attention and management as they are known to contain sensitive species. This analysis also acknowledges that the WMP considers multiple sensitive species and, as such, does not include all costs of WMP conservation efforts for all species, but isolates those related to the LMMV. That is, the full costs of development and implementation of the WMP are not attributed to LMMV conservation efforts in this analysis. This analysis isolates conservation efforts specifically included in the proposed WMP for the LMMV,

### 4.3 Post-Designation Impacts of Proposed CHD

181. This section forecasts over a 20 year time horizon costs that may occur if the designation as proposed is finalized in April 2005. It discusses future management actions involving species and habitat protection, including a discussion of the types of economic impacts associated with each component of these management actions.
182. Post-designation impacts associated with LMMV conservation in the proposed CHD are summarized in Exhibit 4-5 and detailed in the following discussion. Total nominal post-designation costs from 2005-2025 are anticipated to be approximately \$4.61 million to \$10.82 million. Applying a seven percent discount rate, this present value of future costs associated with LMMV conservation is approximately **\$2.93 million to \$5.87 million, or \$277,000 to \$587,000 annualized over 20 years.**<sup>124</sup>
183. Previous to the final CHD for the species, two major conservation efforts for the species have been undertaken: two conservation areas and “no dig” zones have been proposed to be set aside at Fort Irwin, and the WMP proposed establishment of ACECs to be managed as reserve-level by the BLM for all occurrences of the species outside of the Fort Irwin. Additionally, a goal common to these disparate major conservation efforts is to place all occurrences of the LMMV under Federal ownership and management in the long term.<sup>125</sup>
184. The majority, 69 percent of post-designation costs are expected to be borne by the BLM and are associated with implementation of the conservation measures outlined in the West Mojave Plan (WMP), an HCP that considers the LMMV. Another 25 percent are forecast to be borne by the DOD for management of LMMV conservation areas, and private land acquisition to place LMMV habitat under Federal management. The remaining six percent of anticipated post-designation costs may be borne by NASA in developing annual reports on the status of the LMMV on its leased lands.
185. This analysis determines that the project accounting for the majority of forecast post-designation costs associated with conservation for the LMMV is maintenance of route designations within the ACECs. This accounts for approximately 64 percent of total forecast post-designation costs. Another 17 percent of post designation costs stem

---

including increasing law enforcement (of OHV restrictions) in the proposed LMMV conservation areas, route maintenance and rehabilitation, and maintenance of signage and route maps (this is detailed in Section 4.3.4 of this analysis).

<sup>124</sup> “Present value” terms are often used to compare economic costs incurred in different time periods. A discount rate is used to bring a series of future cash flows to their present value in order to state them in today's dollars. That is, the present value is the sum of a series of future cash flows expressed in today's dollars.

<sup>125</sup> This analysis assumes that, consistent with the goals of the Fort Irwin expansion plan and the WMP, all private lands within the area are purchased. The private lands within the boundaries of Fort Irwin may be acquired through eminent domain and will be managed by the DOD. The DOD has also proposed to assist with purchase of private lands outside the boundaries of Fort Irwin to be managed by the BLM. These lands, however, will only be purchased from willing sellers. The statement that all of the proposed critical habitat lands will be Federally-managed in the future assumes that all private landowners of parcels outside of Fort Irwin are willing sellers.

from the DOD acquisition of the remaining 1,807 acres of private lands outside of Fort Irwin to aid in placing LMMV populations under Federal (BLM) management.

186. Where the information is available, it is best to present results of the economic analysis in the smallest geographical scale possible to inform the Service of the impacts of designating particular land parcels. Exhibit 4-4 presents a subset of the estimated post-designation costs by Unit. Importantly, this does not include all forecast costs as not all costs are separable on a Unit-by-Unit basis.

**EXHIBIT 4-4: SUBSET OF TOTAL ESTIMATED POST-DESIGNATION COSTS OF PROPOSED CHD BY UNIT**

Proposed CHD Unit	Description of Estimated Costs	Nominal Cost
Unit 1	<ul style="list-style-type: none"> <li>Costs of NASA reporting on status of LMMV on its leased lands</li> </ul>	\$642,000
Unit 2	<ul style="list-style-type: none"> <li>Cost to DOD of purchasing 607 acres of private land outside the boundaries of Fort Irwin</li> </ul>	\$252,000 to \$407,000
Unit 3	<ul style="list-style-type: none"> <li>Cost to DOD of purchasing 3,714 acres of private land outside the boundaries of Fort Irwin</li> </ul>	\$865,000 to \$1.4 million

187. In the case of the LMMV proposed CHD, forecast economic impacts are not all separable on a Unit-by-Unit level. For example the following post-designation costs are not Unit specific for the following reasons:

- The majority of the high-end post designation costs of the proposed CHD, \$7.45 million or 69 percent, are associated with implementation of the WMP, including route rehabilitation and destruction, conducting validity exams on existing mining claims on BLM lands, and increased enforcement of OHV users. These costs are associated with Unit 3 of the proposed designation, which is entirely within BLM lands to be managed by the BLM according to the WMP, and Unit 2, 16 percent of which falls within BLM lands to be managed by the BLM according to the WMP. It is unclear to what extent the cost of these efforts may be reduced by the exclusion of a portion of these Units from CHD.
- Approximately 6.9 percent, or \$750,000, of the forecast post-designation costs are associated with DOD studies on the cumulative impacts of training, including dust and obscurants, near the LMMV habitat. These impacts are a result of CHD of Unit 1, which falls entirely within DOD lands, and a portion of Unit 2, of which approximately 84 percent falls within DOD lands. The cost of these efforts is not expected to be changed if the Service changes any of the Unit boundaries in the proposed CHD thus the costs of these efforts are not due to the inclusion of any one proposed Unit.

- Approximately 1.6 percent, or \$170,000, of the estimated high-end post-designation costs are borne by the DOD for monitoring and maintenance of LMMV management areas, and implementation of an education program for land-users. These impacts are a result of CHD of Unit 1, which falls entirely within DOD lands, and a portion of Unit 2, of which approximately 84 percent falls within DOD lands. The cost of these efforts is not expected to be changed if the Service changes any of the Unit boundaries in the proposed CHD thus the costs of these efforts are not due to the inclusion of any one proposed Unit.

188. Most notably, the primary uncertainty associated with the CHD for the LMMV is the potential economic impacts to military readiness associated with constraining military training on Fort Irwin lands. The DOD proposed to set aside and manage over 4,000 acres of land as conservation areas for the LMMV. The Service, however, has proposed designation of about 15,000 acres for LMMV critical habitat in Fort Irwin lands. This results in approximately 11,000 acres of proposed critical habitat on Fort Irwin lands that will not be set aside for conservation purposes. Of these acres, planned military training activities at the Fort are anticipated to result in degradation of habitat and potential loss of plants on approximately 6,660 acres.<sup>126</sup> As mitigation for this potential loss, the DOD is purchasing private lands outside of the Fort to be managed at the reserve level for the LMMV. The Service determined that the military training activity and conservation measures proposed by the DOD would not result in jeopardy to the LMMV.<sup>127</sup> It is unclear, however, whether proposed military training activities will result in adverse modification of critical habitat for the LMMV. In the case that lawsuits arise regarding adverse modification associated with the planned military training, this analysis does not quantify the potential impacts to military readiness of constraints to military training activities on the 11,300 acres of proposed CHD for the LMMV.<sup>128</sup>

189. Further, this analysis does not anticipate significant economic impacts to casual use miners. The casual use mining that occurs within this area does not typically result in significant ground disturbance.<sup>129</sup> Service staff believe that soils that support LMMV are shallower than those typically targeted by recreational miners for gold prospecting.<sup>130</sup> As described and quantified in Section 4.2 of this report, however, the BLM will review all

---

<sup>126</sup> Charis Professional Services Corporation, *Biological Assessment for the Proposed Addition of Maneuver Training Land at Fort Irwin, CA*, May 2003, page 5-27.

<sup>127</sup> U.S. Fish and Wildlife Service, "Biological Opinion for the Proposed Addition of Maneuver Training Lands at Fort Irwin, California (1-8-03-F-48)," March 15, 2004.

<sup>128</sup> The DOD has stated that the impact of designating critical habitat on Fort Irwin lands outside of the proposed conservation areas may concern military readiness as a result of constraining training activities in these areas. (Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, October 15, 2004 and October 18, 2004.)

<sup>129</sup> Personal communication with Charles Sullivan, Bureau of Land Management, March 3, 2004.

<sup>130</sup> Personal communication with U.S. Fish and Wildlife Service, Ventura Field Office, March 2, 2004.

existing mining claims in terms of their potential to adversely impact the LMMV within the proposed CHD. If the case that the potential for adverse impact to LMMV is identified, the claimant would be required to develop a Plan of Operations that took into account LMMV conservation. Additionally, if the lands are withdrawn from minerals entry, as mentioned above, the BLM would conduct a validity exam, and if the claim was valid, would purchase the claim. The extent to which these two measures will be necessary is speculative, as it is uncertain whether casual use mining is disturbing the plant or habitat, and uncertain whether the lands will be withdrawn from mining activity.

190. Likewise, this analysis does not anticipate significant economic impacts to OHV users. Recreational OHV use is allowed only on designated routes within the proposed CHD lands. While dual sport events occur approximately once per year (conservative estimate), the planners of these events are typically able to avoid routes that travel through the ACECs and re-route on a nearby open road. Such a re-routing is not anticipated to result in significant economic costs.<sup>131</sup>

---

<sup>131</sup> Personal communication with Charles Sullivan, Bureau of Land Management, March 3, 2004.

**EXHIBIT 4-5: SUMMARY OF LMMV POST-DESIGNATION CONSERVATION EFFORTS IN AREAS PROPOSED FOR CHD (2005-2025)**

Stakeholders	Date	General Description of Impacts of Conservation Effort	Nominal Cost
<i>Post-Designation Conservation Efforts in Proposed CHD for LMMV at Fort Irwin</i>			
DOD	2005-2025	• Maintenance of LMMV conservation areas and education program	\$170,000
	2005-2009	• DOD research on the cumulative effects of training on nearby LMMV populations (see Section 4.3.1)	\$750,000
NASA	2005-2025	• Annual reporting of species status on NASA-leased property (see Section 4.3.2)	\$642,000
DOD	2005-2025	• DOD acquisition of 4,321 acres of private lands outside of Fort Irwin (see Section 4.3.3)	\$1.12 million to \$1.81 million
<b>SUBTOTAL ECONOMIC IMPACTS</b>			<b>\$2.68 million to \$3.37 million</b>
<i>Post-Designation Conservation Efforts in Proposed CHD not associated with Fort Irwin</i>			
BLM	2005-2025	• Implementation of conservation measures associated the WMP, including route designation maintenance and conducting validity exams on existing mining claims (see Section 4.3.4)	\$1.93 million - \$7.45 million
<b>SUBTOTAL ECONOMIC IMPACTS</b>			<b>\$1.93 million - \$7.45 million</b>
<b>TOTAL ECONOMIC IMPACTS</b>			<b>\$4.61 million to \$10.82 million</b>
<i>Present Value (7%) of total economic impacts</i>			<i>\$2.93 million to \$6.22 million</i>
<i>Annualized</i>			<i>\$277,000 to \$587,000</i>
<i>Present Value (3%) of total economic impacts</i>			<i>\$3.72 million to \$8.34 million</i>
<i>Annualized</i>			<i>\$351,000 to \$787,000</i>

Note: Estimates may not sum due to rounding. Costs known to occur in specific years are discounted accordingly.

### 4.3.1 Implementation of Conservation Measures on Fort Irwin Lands

191. This analysis assumes the following project costs associated with management of conservation areas on Fort Irwin will occur annually after the final designation of critical habitat for the LMMV in April 2005.

- Education program for contractors and crew members: **\$2,400** (\$120 per year)<sup>132</sup>
- Monitoring and maintenance of fencing: **\$168,000** (\$8,400 per year)<sup>133</sup>

192. In addition, DOD will be spending approximately \$150,000 in 2005, and estimates it will similarly spend an additional \$150,000 per year for four more years (five years total) researching the impacts of training on the LMMV. Approximately \$100,000 per year of this is for research on seed germination and banking and the management of experimental populations. The remaining \$50,000 per year is to study the cumulative impacts of continuous travel activity, including the resulting dust and obscurants, near the LMMV. This analysis therefore includes a cost of **\$750,000** over five years for the DOD associated with the studies.<sup>134</sup>

193. As mentioned in Section 4.1.8 these costs represent the *direct costs* of conservation measures for the LMMV.

### 4.3.2 NASA Annual Reporting

194. This analysis does not anticipate impacts to NASA activities associated with conservation measures for the LMMV. The past programmatic consultation regarding NASA activities involved assessment of impacts to the desert tortoise and did not include the LMMV, as the LMMV was not known to occur on NASA-leased lands at the time of consultation. The current infrastructure that houses NASA operations is not proposed as CHD for the LMMV as impervious surfaces lack the primary constituent elements necessary to support the species.

195. NASA's major activity within and directly surrounding the lands proposed for CHD is maintenance of its satellites. Space communication projects occur at the NASA's Venus Site, which abuts the proposed CHD for the LMMV. These space communication projects are consistent with the President's goals for future space exploration efforts, including extended missions to the Moon and eventually to Mars. NASA does not have plans for large-scale development in this area, such as permanent infrastructure. They do,

---

<sup>132</sup> Assumes 30 minutes per month for training at approximately \$20 per hour; personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 18, 2004.

<sup>133</sup> Assumes four worker days, or 32 hours, per month at \$22 per hour. \$8,400 is an annual cost anticipated to occur each year post-CHD. Personal communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, May 18, 2004

<sup>134</sup> Written communication with Mickey Quillman, Directorate of Public Works, Fort Irwin, February 10, 2005.

however, plan to continue using the area as a test site, which may involve temporary construction and management of test stands and antennae.<sup>135</sup>

196. NASA expressed concern in a letter to the Service regarding the proposed designation that their space exploration endeavours may be constrained by the proposed CHD at the Venus site.<sup>136</sup> As details are not available regarding the precise nature of these research and development activities, and because they have not been previously reviewed by the Service in terms of their potential effect on the LMMV, it is unclear how NASA's activities may be modified with an eye toward the LMMV and its habitat. Accordingly, this analysis does not quantify project modification costs to NASA's research and development activities due to the speculative nature of potential mitigation.
197. NASA also plans to report on the status of LMMV on its property in the future.<sup>137</sup> NASA anticipates that, in preparation for LMMV status, it will conduct species surveys similar to past DOD surveys on its leased lands coincident with the first report. These surveys and initial report may cost approximately \$300,000 the first year. In subsequent years the annual report will result in administrative costs to NASA of approximately \$18,000 per year.<sup>138</sup> Accordingly this analysis estimates costs to NASA of **\$642,000** over the next 20 years.<sup>139</sup>

### **4.3.3 Private Lands Acquisition**

198. As a conservation measure associated with the Fort Irwin land expansion, the DOD proposed to purchase all non-Federal land identified as LMMV habitat outside of the Fort Irwin boundaries so they may be afforded management protections by the BLM. Approximately 1,807 acres remain of private land outside of Fort Irwin that were proposed for designation of critical habitat for the LMMV; 407 acres within proposed

---

<sup>135</sup> Letter from Dr. Robert A. Parker, Director, NASA Management Office, Jet Propulsion Laboratory, to Field Supervisor, Ventura Fish and Wildlife Office, "Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Astragalus Jaegerianus* (Lane Mountain Milk-vetch)", June 7, 2004.

<sup>136</sup> Ibid.

<sup>137</sup> Personal communication with Peter Robles, National Aeronautics and Space Administration, March 4, 2004.

<sup>138</sup> Written communication from Peter Robles, National Aeronautics and Space Administration, July 14, 2004.

<sup>139</sup> The draft version of this analysis estimated costs of LMMV monitoring and reporting based on written communication from NASA (March 4, 2004 and July 14, 2004) of approximately \$500,000 in the first year (reflecting NASA's stated intention to re-survey all of the areas previously surveyed by DOD to independently verify the species' distribution on their lands leased from DOD) and \$30,000 per year in subsequent years to monitor and report on the status of the species. Communication with NASA following the publication of the DEA clarified that these cost estimates include costs for surveys and monitoring of not only the LMMV, but also the desert cymopterus and the Mojave ground squirrel. NASA estimated that actually three-fifths of the costs from the draft are due to consideration of the LMMV. The revised economic analysis therefore revises impacts to NASA of LMMV conservation efforts to \$300,000 in the first year and 18,000 per year in subsequent years for monitoring and reporting on the status of LMMV on its lands leased from DOD (Written communication with Peter Robles, NASA, February 9, 2005).

Unit 2 and 1,400 acres within proposed Unit 3. A portion of this land will allow the creation of the West Paradise LMMV ACEC to be managed by the BLM contiguous with the DOD-managed East Paradise Conservation Area. This will result in the placement of 100 percent of the LMMV habitat on Federal lands. Recent DOD experience purchasing lands within the Fort Irwin expansion area resulted in a per acre price range of \$618 to \$1000. Although this conservation measure is associated with the Fort Irwin expansion plan, the acquisition of private lands is a sustained effort. As such, the costs of the purchase of 1,807 acres of private land outside of Fort Irwin, **\$1.12 million to \$1.81 million**, are assumed to be post-designation costs and are spread out over the twenty year time frame of the post-designation cost analysis.<sup>140</sup>

#### 4.3.4 Implementation of the WMP

199. The following conservation measures related to route designations outlined in the WMP are anticipated to have annual implementation costs.

- Hiring additional law enforcement officers, visitor service staffers, and maintenance workers: \$1.25 million per year;
- Funding for route rehabilitation: \$100,000 per year; and
- Maintenance of signs, kiosks, routes, maps, and brochures: \$30,000 per year.<sup>141</sup>

200. This analysis assumes that these measures will be implemented annually following the final CHD for the LMMV in April 2005. Importantly, the annual costs listed above cover the routes within the entire planning area of the WMP. Because this analysis assumes that all private lands within the area are acquired with the assistance of the DOD, the costs associated with management of these areas under the WMP are anticipated to be borne solely by the BLM and not San Bernardino County. The BLM anticipates that a range of five to 25 percent of these total costs may be associated with conservation measures for the LMMV.<sup>142</sup> This analysis accordingly estimates post-designation costs associated with the implementation of these conservation measures for 20 years post CHD for the LMMV to be **\$1.38 million to \$6.9 million**.<sup>143</sup>

---

<sup>140</sup> Assumes DOD will acquire all 1,807 acres of private land at \$618 to \$1000 per acre. The source of the per acre cost range is written communication between Mickey Quillman, Directorate of Public Works, Fort Irwin and Priscilla Kernek, Charis Corporation, May 17, 2004 and is based on actual recent land purchases by the DOD in this region.

<sup>141</sup> Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment." May 2003, page 2-147.

<sup>142</sup> Personal communication with William Haigh, Bureau of Land Management, May 18, 2004 and September 13, 2004.

<sup>143</sup> Staff from the U.S. Fish and Wildlife Service, Ventura Field Office estimate that the percentage of route designation costs associated with LMMV protections (up to 25 percent based on professional opinion by the BLM)

201. Additionally, the BLM expects to conduct validity exams for existing mining claims. The WMP proposes to withdraw from minerals entry those lands for which the Service has proposed CHD for the LMMV. Upon Congressional approval of the withdrawal, the BLM will conduct validity exams at existing mining claims. The anticipated cost for conducting validity exams is approximately \$25,000 per claim. For the 22 existing mining claims within the proposed CHD for the LMMV the total cost of these exams is **\$550,000**. Although this effort is associated with WMP, which the BLM anticipates will be approved before the final CHD for the LMMV in April 2005, conducting validity exams is a sustained effort. As such, the costs of this effort are assumed to be post-designation costs and are spread out over a five time frame.
202. Importantly, however, the mining claims that exist within the areas proposed for CHD for the LMMV are all for non-commercial mining. These claims have not historically been significantly productive, producing approximately one-quarter ounce of gold per day in the entire region.<sup>144</sup> More importantly, mining activity provides a recreational opportunity for its claimants. The extent to which mining activity may affect the LMMV and habitat is speculative as this has not been formally investigated by the BLM.

---

is likely too high as the route designation effort was conducted for multiple reasons, including minimizing ground disturbance in the desert, and increasing manageability, and consideration of multiple species of concern (e.g., the desert tortoise). As it is not possible to determine which of these causative factors is the precipitating reason for each route designation, however, this analysis assumes that 25 percent of the route designation costs are co-extensively related to conservation of the LMMV.

<sup>144</sup> Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment." May 2003, Appendix M.4.

## REFERENCES

- American Motorcyclist Association, District 37 Website, <http://www.district37ama.org/dualsport/ridingevents.php>, accessed on May 12, 2004.
- Bureau of Labor Statistics and California, Employment Development Department, Labor Market Information, <http://www.calmis.ca.gov/htmlfile/subject/lftable.htm>, accessed on April 22, 2004.
- Bureau of Labor Statistics, Consumer Price Index, accessed at <http://www.bls.gov/cpi/> on August 5, 2004.
- Bureau of Land Management, Barstow Field Office handout, "Casual Use Mining Guidelines in the Barstow Resource Area."
- Bureau of Land Management Surface Management Designation (43 CFR 3809).
- Bureau of Land Management, "The California Desert Conservation Area," accessed at [http://www.ca.blm.gov/cdd/cdca\\_q-a.html](http://www.ca.blm.gov/cdd/cdca_q-a.html) on May 17, 2004.
- Bureau of Land Management, "The California Desert Conservation Area Plan 1980, as Amended," March 1999.
- Bureau of Land Management, California Desert District, Instruction Memorandum CDD 98 – 09 on Policy for Permitting Dual Sport Events, accessed at <http://www.blm.gov/nhp/efoia/ca/Public/RAs/IMs/1998/CDDIM98-09.htm>.
- Bureau of Land Management, California Desert District. "Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment." May 2003.
- California Department of Conservation, Surface Mining and Reclamation Act and Associated Regulations, Public Resources Code, Division 2, Chapter 9, Section 2710 et seq.
- California Department of Finance, Demographic Research Unit, "Interim County Population Projections, Estimated July 1, 2000 and Projections for 2005, 2010, 2015 and 2002", <http://www.dof.ca.gov/HTML/DEMOGRAP/repndat.htm#projections> accessed on May 10, 2004.
- California Employment Development Department, <http://www.calmis.ca.gov/file/COsnaps/RivSBsnap.pdf> accessed on May 10, 2004.
- Charis Professional Services Corporation, Biological Assessment for the Proposed Additional of Maneuver Training Land at Fort Irwin, CA, May 2003.

Department of the Army and Department of the Interior, “Key Elements of the Proposed Expansion Plan for Fort Irwin and the National Training Center,” January 12, 2001.

Dun and Bradstreet, “Dun’s Market Identifiers.” Dialog search of File 516.

Executive Order 12866, “Regulatory Planning and Review,” September 30, 1993.

Executive Order 13211, “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001.

Federal Government General Schedule Rates, Office of Personnel Management, a review of consultation records from several Service field offices across the country and communications with Biologists in the Service.

Federal Land Policy Management and Act of 1976 (43 U.S.C. §§ 1701-1782, October 21, 1976).

Four Strokes Only Corporation, “The History of Dual Sport Motorcycling, <http://www.4strokesonly.com/DSOrigins.html>, accessed on May 12, 2004.

Gramlich, Edward M., A Guide to Benefit-Cost Analysis (2nd Ed.), Prospect Heights, Illinois: Waveland Press, Inc., 1990; and U.S. 240-R-00-003, September 2000, available at <http://yosemite.epa.gov/ee/epa/eed.nsf/webpages/Guidelines.html>.

Leszczykowski, A., et al., 1993, “Mineral Resources of the West Mojave Desert Tortoise Habitat (category one and two lands),” U.S. Bureau of Mines, Western Field Operations Center, Special Publication, unpublished report prepared at the request of the BLM, 1993.

National Archives and Records Administration, 5 U.S.C. § 601 et seq.

National Training Center, “Fort Irwin Land Expansion: Background Information,” accessed at [www.fortirwinlandexpansion.com/Background.htm](http://www.fortirwinlandexpansion.com/Background.htm) on March 18, 2004.

Nevada State Library and Archives, “Population Projections for Nevada Counties: 2000 to 2010”, <http://dmla.clan.lib.nv.us/docs/nsla/sdc/stats/stat3.htm> accessed on May 11, 2004.

New Mexico Cattle Growers Ass’n v. U.S.F.W.S., 248 F.3d 1277 (10th Cir. 2001) Proposed Designation of Critical Habitat for *Astragalus jaegerianus* (Lane Mountain milk-vetch), published in the Federal Register on April 6, 2004, Vol. 69, No. 66. Regulatory Flexibility Act, 5 U.S.C. 601 et. seq.

Sikes Act Improvement Act of 1997. From <http://www.denix.osd.mil/denix/Public/ES-Programs/Conservation/Laws/sikesamend.html>, May 17, 2004.

U.S. Census Bureau, County Business Patterns, <http://censtats.census.gov/cgi-bin/cbpnaic/cbpsect.pl>. accessed on April 14, 2004.

- U.S. Census Bureau, State & County QuickFacts, accessed at <http://quickfacts.census.gov/qfd/> on May 10, 2004.
- U.S. Endangered Species Act, Section 9, 16 U.S.C. 1532, 16 U.S.C. 1538.
- U.S. Endangered Species Act, Section 4, 16 U.S.C. 1533.
- U.S. Fish and Wildlife Service, “Biological Opinion for the Proposed Addition of Maneuver Training Lands at Fort Irwin, California (1-8-03-F-48), March 15, 2004.
- U.S. Fish and Wildlife Service, “Biological Opinion for the Boundary Survey of Lands Withdrawn Pursuant to the Fort Irwin Military Lands Withdrawal Act of 2001, San Bernardino County, California (1-8-02-F-27),” April 19, 2002.
- U.S. Fish and Wildlife Service, “Endangered Species and Habitat Conservation Planning.” From: <http://endangered.fws.gov/hcp/>.
- U.S. Fish and Wildlife Service, “Preliminary Review of the Effects of the Expansion of the National Training Center/Fort Irwin on the Desert Tortoise and Lane Mountain Milkvetch,” March 28, 2001.
- U.S. Fish and Wildlife Service, Biological Opinion for the California Desert Conservation Area Plan [Lane Mountain Milk-vetch, Ash Meadows Gumplant, and Amargosa Niterwort], 6840(P) CA-063.50, 1-8-01-F-18, February 27, 2002.
- U.S. Fish and Wildlife Service, Biological Opinion on Reinitiation of Formal Consultation on the Army’s Current Mission at the NTC, Fort Irwin, California (USFWS, BO Number 1-8-95-F-16R, 1995), September 15, 1995.
- U.S. Fish and Wildlife Service, Ventura Field Office letter to Mr. Mickey Quillman, Directorate of Public Works, National Training Center and Fort Irwin, “Integrated Natural Resource Management Plan and Environmental Assessment for the U.S. Army National Training Center and Fort Irwin, San Bernardino County, California (AFZJ-PW-EV),” April 10, 2002.
- U.S. Fish and Wildlife Service, Ventura Field Office, letter to Lt. Colonel Jeffrey S. Ogden, Directorate of Public Works, U.S. Army, NTC and Fort Irwin, April 30, 2003. Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, M-01-27, Office of Management and Budget, July 13, 2001, <http://www.whitehouse.gov/omb/memoranda/m01-27.html>.
- U.S. Office of Management and Budget, “Appendix 4: Guidelines to Standardize Measure of Costs and Benefits and the Format of Accounting Statements,” in Report to Congress on the Costs and Benefits of Federal Regulations, March 22, 2000.

U.S. Office of Management and Budget, “Circular A-4,” September 17, 2003, available at <http://www.whitehouse.gov/omb/circulars/a004/a-4.pdf>.

U.S. Office of Management and Budget, “Draft 2003 Report to Congress on the Costs and Benefits of Federal Regulations; Notice,” 68 Federal Register 5492, February 3, 2003.

Vol. 146 No. 155 Congressional Record H12262 (daily ed. December 15, 2000).

Letter from Tim Read, Field Manager, BLM to Greg Herrig, First Class Miners, Reference 3000, 8300(P) CA-680.27, dated January 9, 2003.

Letter from Dr. Robert A. Parker, Director, NASA Management Office, Jet Propulsion Laboratory, to Field Supervisor, Ventura Fish and Wildlife Office, “Endangered and Threatened Wildlife and Plants; Proposed Designation of Critical Habitat for *Astragalus Jaegerianus* (Lane Mountain Milk-vetch)”, June 7, 2004.

Personal communication with:

American Motorcyclist Association

Barstow Chamber of Commerce

Barstow Motorcycle Center

Charis Corporation

Department of Army, National Training Center and Fort Irwin

Lost Coyotes Motorcycle Club

National Aeronautics and Space Administration (NASA)

San Bernardino County Planning Office

U.S. Bureau of Land Management (BLM), Barstow Field Office

U.S. Bureau of Land Management (BLM), California Desert District Office

U.S. Fish and Wildlife Service, Ventura Field Office

## APPENDIX A:

### ANALYSIS OF IMPACTS TO SMALL ENTITIES AND ENERGY MARKETS

1. This appendix considers the extent to which the analytic results presented in this analysis reflect impacts to small businesses or energy markets. The analysis of the effect of LMMV habitat conservation on small entities is conducted pursuant to the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA) in 1996. The energy analysis is required by Executive Order No. 13211.

#### **A.1 SBREFA Analysis**

2. Under SBREFA, whenever a Federal agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comments a regulatory flexibility analysis that describes the effect of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions).<sup>145</sup> No regulatory flexibility analysis is required, however, if the head of an agency certifies that the rule will not have a significant economic impact on a substantial number of small entities.<sup>146</sup> SBREFA amended the RFA to require Federal agencies to provide a statement of the factual basis for certifying that a rule will not have significant economic impact on a substantial number of small entities.
3. To assist in this process, the following represents a screening level analysis of the potential effects of the designation of conservation activities for the LMMV on small entities due to the proposed rulemaking. This analysis is based on the estimated impacts associated with the proposed rulemaking.

#### **A.1.1 Identification of Activities That May Involve Small Businesses**

4. The prospective economic costs associated with conservation measures for the LMMV are a result of multiple causative factors including implementation of conservation measures proposed as part of the Fort Irwin military training lands expansion plan and the West Mojave Plan, an HCP that considers the LMMV among other species. As a result, this analysis does not anticipate significant impacts to small entities as a result of this rulemaking. The following discussion is provided simply to provide context on the small entity environment surrounding the lands proposed for designation for the LMMV.
5. The DOD manages military activities, including conservation efforts, at Fort Irwin, and, as such, small businesses are not relevant. Of the approximately 29,500 acres proposed for CHD for the LMMV, approximately 15,300 are within the boundaries of the Fort Irwin. The remaining 14,300 acres of land proposed for CHD are primarily BLM

---

<sup>145</sup> 5 U.S.C. 601 et seq.

<sup>146</sup> Thus, for a regulatory flexibility analysis to be required, impacts must exceed a threshold for “significant impact” and a threshold for a “substantial number of small entities.” 5 U.S.C. 605(b).

lands (approximately 200 acres are State-owned and 4,000 acres are privately owned). The following discussion of small businesses relates to OHV and mining activities within the BLM and private lands proposed for CHD.

6. Land use activities taking place within or surrounding the proposed CHD that may involve small businesses are OHV use, such as dual sport events, and casual use mining. This analysis does not anticipate significant constraints on these activities due to the proposed CHD for the following reasons:

- First, vehicles are currently restricted to open routes within the habitat area, and may still continue to use the area adhering to that stipulation. Second, the Johnson-Stoddard Valley area, south of the proposed lands, is designated as an open ORV area and, as such, attracts more OHV recreationists than the proposed critical habitat lands. OHV use in the region is therefore not anticipated to be significantly changed due to conservation measures for the LMMV.<sup>147</sup>
- Second, no commercial mining exists within the proposed designation. The BLM has not determined whether casual use mining that occurs in the area is adversely affecting the LMMV or habitat. The Service does not expect mining activities result in impacts to the LMMV because most of the digging and panning occurs in pockets of deeper, gold-bearing soil, rather than the shallow-soiled areas where individuals of LMMV occur.<sup>148</sup>

Accordingly, economic impacts to the types of small businesses summarized in Exhibit A-1 are not anticipated, as conservation measures associated with the LMMV are not expected to result in appreciable reduction of either mining or dual sport activities in the region.

7. Dual sport participants and casual-use miners may spend money on a variety of consumable goods and services. Categories of trip-related expenditures made by dual sport participants include food and drink, motorcycle equipment, transportation (including fuel) and lodging (including hotels and camping fees). The small business expenditures related to casual-use mining is uncertain, but may similarly include food and drink, transportation, and lodging.

8. As highlighted in Exhibit A-1, the majority of businesses of this nature within San Bernardino County are considered small businesses. As a result, this analysis assumes that the majority of expenditures associated with casual-use mining and dual sport events is made in the local economy and is made at small businesses.<sup>149</sup> Exhibit A-1 reports the

---

<sup>147</sup> Written communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

<sup>148</sup> Communication with U.S. Fish and Wildlife Service, Ventura Field Office, June 22, 2004.

<sup>149</sup> Participants in OHV recreation in the proposed critical habitat area may originate outside of San Bernardino County, for example, from southern California, central California, and southern Nevada, and may therefore purchase equipment in any of a number of locations throughout the region.

total number of businesses in San Bernardino that are associated with these expenditures, by NAICS (North American Industry Classification System) code. This exhibit also indicates the number of these businesses that are classified as small businesses. In particular, in San Bernardino County, 647 small businesses are related to Motor Vehicle and Parts Dealers; 1511 are related to retail Food and Beverage Stores; and 1989 are related to Food Services and Drinking Places, and 79 are related to Sporting and Athletic Goods Manufacturing, Transportation Equipment/Supplies.<sup>150</sup>

9. The socioeconomic portion of the draft Environmental Impact Statement for the WMP quantifies the potential impact of decreasing expenditures by OHV recreationists within the area of the WMP. Importantly, this statement is in reference to the entire 9.4 million acres of the WMP, and not specific to the 14,300 acres of proposed critical habitat designation for the LMMV outside of Fort Irwin.

“Most OHV visitors, however, are part of a larger group, which significantly reduces realistic shopper-trip potential associated with OHV recreation, particularly for non-dining retail expenditures. In addition, a significant portion of OHV trip related expenditures are made within the hometown location of recreation visitors who primarily drive up from areas of Southern CA. Consequently, non-dining retail expenditures are not likely to support more than 50 retail sector jobs, providing \$30,360 in annual income per worker, on average. A greater portion of OHV visitors can be expected to make dining-related expenditures during a given visit. A 60.0 percent incident rate describing the purchase of a hot or cold meal within the West Mojave (aggressive) suggests equivalent economic support for roughly 140 restaurant jobs providing an average of \$14,960 in annual income per worker, on average.”<sup>151</sup>

10. This illustrates the low level of contribution that expenditures associated with these recreational activities may have on the study area. This analysis does not anticipate that dual sport participation or casual use mining will experience future economic impacts associated with the proposed rulemaking.

---

<sup>150</sup> Exhibit 4-5 presents small business information for all of San Bernardino County, encompassing approximately 13 million acres. In contrast, the area of the proposed CHD outside the boundaries of the NTC is approximately 14,000 acres and lies north of Barstow. As such, these estimates overstate the number of potentially affected businesses.

<sup>151</sup> Bureau of Land Management, California Desert District. “Draft Environmental Impact Report and Statement for the West Mojave Plan: A Habitat Conservation Plan and California Desert Conservation Area Plan Amendment.” May 2003, page 4-97.

**EXHIBIT A-1: TOTAL NUMBER OF RETAIL SMALL BUSINESSES ASSOCIATED WITH  
PRIMARY DUAL SPORT AND CASUAL-USE MINING EXPENDITURES**

San Bernardino County, CA			
NAICS Code	Expenditure Category	All Businesses	Small Businesses
<i>Motor Vehicle and Parts Dealers:</i>			
44121	Recreational Vehicle Dealers	55	51
44131	Automotive Parts and Accessories Stores	416	402
44132	Tire Dealers	203	194
<i>Food and Beverage Stores:</i>			
44511	Supermarkets and Other Grocery (except Convenience) Stores	618	595
44512	Convenience Stores	285	284
44521	Meat Markets	52	44
44522	Fish and Seafood Markets	14	14
44523	Fruit and Vegetable Markets	36	34
44529	Other Specialty Food Stores	337	317
44531	Beer, Wine, and Liquor Stores	228	223
<i>Food Services and Drinking Places:</i>			
72211	Full-Service Restaurants	1912	1002
72221	Limited-Service Eating Places	1255	780
72233	Mobile Food Services	9	8
72241	Drinking Places (Alcoholic Beverages)	209	199
<i>Sporting and Athletic Goods Manufacturing, Transportation Equipment/Supplies :</i>			
339920	Sporting goods (except ammunition, clothing, footwear, small arms) manufacturing	48	44
423860	Transportation Equipment and Supplies:	37	35

Source: Dialog search of File 516, Dun and Bradstreet, "Dun's Market Identifiers."

## **A.2 Potential Impacts to the Energy Industry**

11. Pursuant to Executive Order No. 13211, “Actions Concerning Regulations that Significantly Affect Energy Supply, Distribution, or Use,” issued May 18, 2001, Federal agencies must prepare and submit a “Statement of Energy Effects” for all “significant energy actions.” The purpose of this requirement is to ensure that all Federal agencies “appropriately weigh and consider the effects of the Federal Government’s regulations on the supply, distribution, and use of energy.”<sup>152</sup> The Office of Management and Budget has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute “a significant adverse effect” when compared without the regulatory action under consideration:
- Reductions in crude oil supply in excess of 10,000 barrels per day (bbls);
  - Reductions in fuel production in excess of 4,000 barrels per day;
  - Reductions in coal production in excess of 5 million tons per year;
  - Reductions in natural gas production in excess of 25 million Mcf per year;
  - Reductions in electricity production in excess of 1 billion kilowatts-hours per year or in excess of 500 megawatts of installed capacity;
  - Increases in energy use required by the regulatory action that exceed the thresholds above;
  - Increases in the cost of energy production in excess of one percent;
  - Increases in the cost of energy distribution in excess of one percent; or
  - Other similarly adverse outcomes.<sup>153</sup>
12. None of these criteria are relevant in this analysis. This analysis does not foresee any energy-related activity occurring within the proposed CHD.

---

<sup>152</sup> Memorandum For Heads of Executive Department Agencies, and Independent Regulatory Agencies, Guidance For Implementing E.O. 13211, M-01-27, Office of Management and Budget, July 13, 2001, <http://www.whitehouse.gov/omb/memoranda/m01-27.html>.

<sup>153</sup> Ibid.