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**MEMORANDUM**

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**TO:** Peter Grigelis, U.S. Fish and Wildlife Service  
**FROM:** Krieg Brown, ENTRIX, Inc  
**DATE:** January 15, 2007  
**RE:** Economic Impacts associated with Final Critical Habitat  
Designation for the Holmgren and Shivwits Milk-Vetch

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The Final Economic Analysis of Critical Habitat Designation for the Holmgren and Shivwits Milk-Vetch (Final EA) assesses the potential economic impacts associated with the proposed designation of critical habitat for the Holmgren milk-vetch (*Astragalus holmgreniorum*) and Shivwits milk-vetch (*Astragalus ampullarioides*) (hereinafter, HMV and SMV respectively, or “species” collectively) as described by the U.S. Fish and Wildlife Service (Service) in the Proposed Rule.<sup>1</sup>

The Final EA quantifies potential economic impacts of species conservation efforts in the areas considered for critical habitat designation in the Proposed Rule at \$9.3 to \$17.7 million in undiscounted dollars, or \$8.7 to \$12.7 million in present value terms using a discount rate of seven percent and \$9.0 to \$13.6 million using a discount rate of three percent. In annualized terms, potential costs associated with the proposed designation range from \$0.8 to \$1.2 million at a seven percent discount rate and \$0.6 to \$0.9 million at a three percent discount rate. In the Final Rule designating critical habitat, the Service has excluded the footprint of the existing power transmission facility owned by the Dixie-Escalante Rural Electric Association located in the northeast corner of Unit H1c, and the footprint of urban development at SunRiver St. George, a master-planned community in the northern portion of Unit H1a. The Service also excluded lands owned by the Shivwits Band of the Paiute Indian Tribe of Utah in Washington County, Utah (all of Unit S2). In total, approximately 433 acres of the area originally proposed as critical habitat (8,903 acres) was excluded from the final designation (8,470 acres). Reasons for the various exclusions are discussed in the Final Rule.<sup>2</sup>

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<sup>1</sup> U.S. Fish and Wildlife Service, September 26, 2006, “Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for *Astragalus ampullarioides* (Shivwits Milk-Vetch) and *Astragalus holmgreniorum* (Holmgren Milk-Vetch), Revised proposed rule; reopening of public comment period, notice of availability of draft economic analysis and draft environmental assessment, and revisions to proposed critical habitat boundaries,” *Federal Register*, Vol. 71, No. 186, pp. 56085-56094.

<sup>2</sup> U.S. Fish and Wildlife Service, September 26, 2006, “Endangered and Threatened Wildlife and Plants: Designation of Critical Habitat for *Astragalus ampullarioides* (Shivwits Milk-Vetch) and *Astragalus*

Exhibit 1 provides an estimate of the economic impacts of species conservation efforts in areas designated as final critical habitat for HMV and SMV. Minimal impacts were associated with the areas that were excluded from critical habitat designation: Unit S2 impacts, as reported in the Final EA, ranged from \$0.68 to \$2.22 (in 2006 dollars) in lost grazing revenues, annually;<sup>3</sup> no impacts were associated with the footprint of the existing buildings, infrastructure, and construction. As a result, the impact of the final designation is expected to remain unchanged from that quantified in the Final EA.

**Exhibit 1:**

**Economic Impacts of Conservation Efforts for the Holmgren and Shivwits Milk-Vetch within the Areas Designated as Final Critical Habitat**

<b>Total Post-designation Impacts (2007-2026)</b>	<b>Impacts Estimated in Final EA</b>	<b>Impacts Estimated for Final CHD</b>
Undiscounted	\$9.3 million – \$14.7 million	\$9.3 million – \$14.7 million
Present Value (7% discount rate)	\$8.7 million – \$12.7 million	\$8.7 million – \$12.7 million
Annualized (7% discount rate)	\$0.8 million – \$1.2 million	\$0.8 million – \$1.2 million
Present Value (3% discount rate)	\$9.0 million – \$13.6 million	\$9.0 million – \$13.6 million
Annualized (3% discount rate)	\$0.6 million – \$0.9 million	\$0.6 million – \$0.9 million

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*holmgreniorum* (Holmgren Milk-Vetch), Revised proposed rule; reopening of public comment period, notice of availability of draft economic analysis and draft environmental assessment, and revisions to proposed critical habitat boundaries,” *Federal Register*, Vol. 71, No. 186, pp. 56085-56094.

<sup>3</sup> In response to the species being listed as endangered in 2001, the Shivwits Band of Paiute Indians installed a fence to prevent grazing and trampling within the SMV habitat. The fence excludes roughly three acres from grazing. With private grazing lease rates ranging from \$5 to \$15 per AUM, and stocking densities in the neighboring BLM grazing allotments ranging from 20.33 to 21.98 acres per AUM, the grazing value of the three acres of rangeland quantified in the EA is equivalent to approximately 0.14 to 0.15 AUMs, or \$0.68 to \$2.22 (in 2006 dollars) in annual revenues.