

**Hermes copper butterfly:**

The following table presents specific threats to the species as described in the petition, and our evaluation of that information against information in our files.  
DRAFT 3/29/06

Petition claims for Factor A. The present or threatened destruction, modification, or curtailment of its habitat or range	Petition Information Source	Information in Service Files	Service conclusion regarding petition claims
<p>Hermes copper butterfly is highly vulnerable to extinction due to loss of populations and dispersal habitat to expanding urban development in San Diego County and northern Baja California.</p>	<p>Comstock 1927 (intro, 15) Wright 1930 (intro) Brown 1991 (intro, 15) Michael Klein (page 10) Murphy 1991 (page 15)</p> <p>Table on 11-13 indicate 14 sites as either developed or slated for development.</p>	<p>Comstock 1927 Wright 1930 Brown 1991 Faulkner and Brown 1993 Brown 1980 Draft species assessment 2004 Michael Klein (pers. comm) Faulkner and Klein (pers. comm 2006)</p>	<p>-Carlsbad FWS office files support the petition claims with additional information. -The published documents predict that Hermes copper butterfly will be affected by the loss and fragmentation of habitat as a result of urbanization. -Nine of 25 properties known to be occupied are privately owned and have either been developed or are being considered for development. Likely additional habitat exists, but is not surveyed. -Of 45 documented sites (including museum specimens, 14 sites on Table 11-13 in petition were verified as already developed.</p>
<p>The threat of urban development is compounded by the additional threat of excessive wildfires. The butterfly is highly vulnerable to extinction due to the threat of fire. Excessive, human-induced fire poses a significant threat to the survival of the species, even on lands otherwise protected from development. Hermes copper butterfly populations were devastated by fire in October 2003. The 2003 Paradise, Cedar, and Mine Fires burned an estimated 39% of Hermes copper habitat. Many populations were destroyed. Recovery is very slow or may be converted to exotic herbaceous cover. Fire has been known to eliminate large stands of the species' larval host plant.</p>	<p>Betzler et al. 2003 (intro, 16) California Department of Fish and Game (2002) Michael Klein, pers. comm. (intro,16,19) Brown 1991 (page 7) Thorne 1963 (page 7) Keeley and Fotheringham 2002 (17,18) Keeley et al. 1999 (17) Wells et al 2004 (17) Zedler 1983 (17) Brooks et al. 2002 (18) Bryeau, pers. comm (19)</p> <p>Table on 11-13 indicate 22 known sites identified as burned from fire.</p>	<p>Betzler 2003 Brown 1991 Faulkner and Klein pers. comm. 2006 Draft species status assessment 2004 (Brown 1991) (Klein and Faulkner 2003)</p>	<p>-Carlsbad FWS office files contain substantial information regarding threat of wildfire due to increased human-induced fire. -Fire has directly killed adults and larvae. -The 2003 fire burned 39% of Hermes copper habitat. -Excessive fires burned large stands of the species' larval host plant and entire colonies. In 1982 fire in Mission Gorge destroyed one of the largest colonies known at that time. -Table 11-13 indicates that of 45 documented sites (including museum specimens, 22 sites are identified as gone from fire. Nineteen sites burned in the 2003 fire. -Frequent fires have eliminated large stands of the species' larval host plant and entire colonies. Post fire analysis surveys following 1982 Mission Gorge fire failed to see butterfly until June 2000, eighteen years later.</p>
<p>Prescribed fire is also likely to harm Hermes copper butterfly populations</p>	<p>Schlicht and Orwig 1999 (19)</p>	<p>Revised Land Management Plan (2005)</p>	<p>-Information in FWS files does not contain substantial information to support the petition</p>