

we are excluding portions of proposed Units 1 and 2 because some private landowners are managing portions of their lands for the conservation benefit of the moth and numerous other listed species. We believe that the benefits of exclusion outweigh the benefits of including these areas as critical habitat because there is a higher likelihood of beneficial conservation activities occurring in those two areas without designated critical habitat. *See* Exclusions Under Section 4(b)(2) for a more detailed discussion of the excluded areas.

(3) *Comment:* The majority of peer reviewers noted the lack of knowledge regarding basic biology of the species. They noted that little peer-reviewed biological and ecological information is available for the Blackburn's sphinx moth, and that much of the technical information used for the critical habitat designation is based on unpublished reports and field observations by Service staff, State biologists, and university researchers. One peer reviewer with DOFAW stated that the use of information from studies of other sphinx moths or butterflies is probably not valid for Blackburn's sphinx moth. Another peer reviewer suggested the use of studies for other lepidopterans could be problematic. However, other peer reviewers agreed that it was acceptable and appropriate for the Service to use studies and information on other lepidopterans, especially since there is limited information on the moth.

*Our Response:* As noted in the Background section of this rule, we recognize the limited amount of scientific data available for this species, especially the very limited amount of information that is available in a peer-reviewed format. However, the Act requires us to use the best available scientific and commercial information in undertaking species listing and conservation actions, including the designation of critical habitat as set forth in this rule.

Prior to the rulemaking process associated with listing the Blackburn's sphinx moth as endangered, we participated in, led, or sponsored a number of surveys and studies in numerous habitat areas on several islands to document the presence or absence of the moth or its essential host plant species at these locations. In addition, other natural resource agencies and organizations, including the University of Hawaii, USGS-BRD, DLNR, and the National Botanical Garden, provided us with reports of field observations at many sites on several islands. While we acknowledge the limited amount of peer-reviewed

published information regarding the Blackburn's sphinx moth, as required by law we have used the best scientific and commercial data available to identify and delineate the critical habitat boundaries. Furthermore, we believe that we have been cautious in using information from studies of other, similar lepidoptera in identifying critical habitat for this moth species. For example, throughout this rule, we have explicitly identified where we were making comparisons between Blackburn's sphinx moth and related taxa rather than making assumptions outright about the moth. We have also acknowledged throughout the rule that additional studies are needed to confirm certain aspects of the species's biology, including, but not limited to, its host plant co-interactions.

(4) *Comment:* Some commenters stated that the Service did not adequately consider recovery science and management in its proposed critical habitat designation.

*Our Response:* When developing the rule to designate critical habitat for the moth, we have used the best scientific and commercial data available. This included, but is not limited to, documented locations of known Blackburn's sphinx moth populations and locations of the primary constituent elements, including peer-reviewed scientific publications; unpublished reports by researchers; the rule listing the species (65 FR 4770); the Blackburn's sphinx moth Recovery Outline (Service 2000); the HHP's current database; island-wide Geographic Information System (GIS) coverages (e.g., vegetation, soils, annual rainfall, elevation contours, landownership); information received during the public comment periods and public hearings; recent biological surveys and reports; information received in response to outreach materials and requests for species and management information that we sent to all landowners, land managers, and interested parties; responses to the published Blackburn's sphinx moth critical habitat proposed rule; and the DEA.

The critical habitat unit approach in this rule addresses the numerous risks to the long-term survival and conservation of Blackburn's sphinx moth by employing two widely recognized and scientifically accepted methods for promoting viable populations of imperiled species—(1) creation or maintenance of multiple populations to reduce the possibility that a single or series of catastrophic events could threaten to extirpate the species; and (2) increasing the size of

each population in the respective critical habitat units to a level where the threats of genetic, demographic, and normal environmental uncertainties are diminished (Tear *et al.* 1995; Meffe and Carroll 1996; Service 1997a).

In general, the larger the number of populations and the larger the size of each population, the lower the probability of extinction (Raup 1991; Meffe and Carroll 1996). This basic conservation principle of redundancy applies to Blackburn's sphinx moth. By maintaining viable populations in the designated critical habitat units, the threats represented by a fluctuating environment are reduced and the species has a greater likelihood of achieving conservation. Conversely, loss of a Blackburn's sphinx moth critical habitat unit will result in an appreciable increase in the risk that the species may not recover and survive.

Re-establishing the species to a diverse set of habitats and climates within its former range is necessary to remove the long-term risk of rangewide extinction due to catastrophic events and the numerous direct threats to the species and its habitat (Service 1997a). We are keenly aware that simply designating an area as critical habitat will not ensure its long-term conservation and recovery and, in fact, we know and recognize that active management actions and proven recovery science methods will be far more important in the long run for the moth. In accordance with our policy on peer review published on July 1, 1994 (59 FR 34270), we also solicited the expert opinions of appropriate and independent specialists regarding the proposed rule. The purpose of this peer review was to ensure that our designation methodology of critical habitat for the Blackburn's sphinx moth was based on scientifically sound data, assumptions, and analysis, and recovery science. The comments of all of the peer reviewers were taken into consideration in the development of this final designation. Furthermore, we are in the process of developing a draft recovery plan for the moth, and all peer reviewers, stakeholders, and other interested parties will have an opportunity to provide input to ensure that the best recovery science is outlined for the moth's long-term conservation and recovery.

(5) *Comment:* Numerous comments were submitted regarding the Service's identification of the Blackburn's sphinx moth's primary constituent elements. Most peer reviewers stated that the Service had properly identified the primary constituent elements for this species. However, several reviewers,