

(b) On Aberdeen Proving Ground, except for activities authorized under 5 United States Code Chapter 71, Labor Management Relations, it is unlawful for any person to engage in any public displays of opinions made by protesting, picketing or any other similar demonstration without the approval of the Commander, U.S. Army Garrison, Aberdeen Proving Ground. Therefore, unless prior approval has been obtained as outlined below in 32 CFR 552.214, it will be unlawful for any person on Aberdeen Proving Ground to:

(1) Engage in protests, public speeches, marches, sit-ins, or demonstrations promoting a point of view.

(2) Interrupt or disturb the testing and evaluating of weapon systems, or any training, formation, ceremony, class, court-martial, hearing, or other military business.

(3) Obstruct movement on any street, road, sidewalk, pathway, or other vehicle or pedestrian thoroughfare.

(4) Utter to any person abusive, insulting, profane, indecent, or otherwise provocative language that by its very utterance tends to excite a breach of the peace.

(5) Distribute or post publications, including pamphlets, newspapers, magazines, handbills, flyers, leaflets, and other printed materials, except through regularly established and approved distribution outlets and places.

(6) Circulate petitions or engage in picketing or similar demonstrations for any purpose.

(7) Engage in partisan political campaigning or electioneering.

(8) Disobey a request from Department of Defense police, other government law enforcement officials (e.g., Federal, State, or local law enforcement officials), military police, or other competent authority to disperse, move along or leave the installation.

(c) In appropriate cases, the Commander, U.S. Army Garrison, Aberdeen Proving Ground may give express written permission for protests, picketing, or any other similar demonstrations on Aberdeen Proving Ground property outside the gates adjacent to the installation, borders, only if the procedures outlined below in 32 CFR 552.214 are followed.

§ 552.214 Procedures.

(a) Any person or persons desiring to protest, picket, or engage in any other similar demonstrations on Aberdeen Proving Ground must submit a written request to the Commander, U.S. Army Garrison, Aberdeen Proving Ground, ATTN: STEAP-CO, 2201 Aberdeen

Boulevard, Aberdeen Proving Ground, Maryland 21005-5001. The request must be received at least 30 calendar days prior to the demonstration, and it must include the following:

(1) Name, address, and telephone number of the sponsoring person or organization (If it is an organization, include the name of the point of contact.)

(2) Purpose of the event.

(3) Number of personnel expected to attend.

(4) Proposed date, time, location and duration of the event.

(5) Proposed means of transportation to and from APG.

(6) Proposed means of providing security, sanitary services and related ancillary services to the participants.

(b) Based on the Commander's concerns for discipline, mission accomplishment, protection of property, and the safeguarding of the health, morale, and welfare of the APG community, the Commander will determine whether to grant the request and, if granted, any limitations as to where and when it will take place.

§ 552.215 Responsibilities.

(a) Director, Law Enforcement and Security, U.S. Army, Garrison Aberdeen Proving Ground, will furnish police support as needed.

(b) Chief Counsel and Staff Judge Advocate, U.S. Army Test and Evaluation Command, will provide a legal review of the request.

§ 552.216 Violations.

(a) A person is in violation of the terms of this subpart if:

(1) That person enters or remains upon Aberdeen Proving Ground when that person is not licensed, invited, or otherwise authorized by the Commander, U.S. Army Garrison, Aberdeen Proving Ground pursuant to the terms of § 552.214; or

(2) That person enters upon or remains upon Aberdeen Proving Ground for the purpose of engaging in any activity prohibited or limited by this subpart.

(b) All persons (military personnel, Department of the Army civilian employees, civilian, and others) may be prosecuted for violating the provisions of this subpart. Military personnel may be prosecuted under the uniform code of military justice. Department of the Army civilian employees may be prosecuted under U.S.C. 1832, and/or disciplined under appropriate regulations. Civilians and others may be prosecuted under U.S.C. 1382.

(c) Administrative sanctions may include, but are not limited to, bar

actions including suspension of access privileges, or permanent exclusion from Aberdeen Proving Ground.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AE20

Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Blackburn's Sphinx Moth From the Hawaiian Islands

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) proposes endangered status pursuant to the Endangered Species Act of 1973, as amended (Act), for Blackburn's sphinx moth (*Manduca blackburni*). This species was found on the Hawaiian islands of Kauai, Oahu, Molokai, Maui, and Hawaii, but is currently known only from one population on Maui. This moth has been affected or is currently threatened by one or more of the following; habitat degradation, introduced animals, and biological pest control. Due to its currently restricted distribution and small population size, this species is also threatened by naturally occurring events. This proposal, if made final, would implement the protection provisions provided by the Act for this moth.

DATES: Comments from all interested parties must be received by June 2, 1997. Public hearing requests must be received by May 19, 1997.

ADDRESSES: Comments and materials concerning this proposal should be sent to Robert P. Smith, Pacific Islands Ecoregion Manager, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 6307, P.O. Box 50167, Honolulu, Hawaii 96850. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Robert P. Smith, at the above address (808/541-2749).

SUPPLEMENTARY INFORMATION:

Background

The Hawaiian archipelago includes eight large volcanic islands (Niihau, Kauai, Oahu, Molokai, Lanai,

Kahoolawe, Maui, and Hawaii), as well as offshore islets, shoals, and atolls set on submerged volcanic remnants at the northwest end of the chain (the Northwestern Hawaiian Islands). Each island was built sequentially from frequent, voluminous basaltic lava flows (Stearns 1985). The youngest island, Hawaii, is still volcanically active, and retains its form of coalesced (consolidated), gently sloping, unweathered shield volcanoes. Vulcanism on the older islands has long since ceased, with subsequent erosion forming heavily weathered valleys with steep walls, and well-developed streams and soils (Department of Geography 1983).

This range of topographies creates a great diversity of climates. Windward (northeastern) slopes can receive up to 1,000 centimeters (cm) (400 inches (in.)) of rain per year, while some leeward coasts that lie in the rain shadow of the high volcanoes are classified as deserts, receiving as little as 25 cm (10 in.) of rain annually. The range of moisture regimes, combined with an elevational range from coastal (0–300m (0–1000ft)) to alpine (over 3000 meters (m) (10,000 feet)(ft)) creates a diverse mosaic of natural plant communities, with nearly all of the world's plant formation types represented (Gagne and Cuddihy 1990). These habitats and plant communities in turn support one of the most unique arthropod faunas in the world, with an estimated 10,000 endemic species (Howarth 1990). Unusual characters of Hawaii's native arthropod fauna include the presence of relictual (remnant) groups, the absence of social insects such as ants and termites, generic endemism (the uniqueness of its genera), extremely small geographic ranges, large species radiations (significant divergence in species diversity from primary forms), novel (unusual) ecological shifts, flightlessness, and loss of certain antipredator behaviors (Zimmerman 1948; 1970; Simon *et al.* 1984; Howarth 1990).

Discussion of the Animal Taxon Included in This Proposed Rule

Blackburn's sphinx moth (*Manduca blackburni*) is Hawaii's largest native insect, with a wingspan of up to 120 millimeters (mm) (5 in.). Like other sphinx moths (family Sphingidae) it has long, narrow forewings, and a thick, spindle-shaped body tapered at both ends. It is grayish brown in color, with black bands across the apical margins of the hind wings, and five orange spots along each side of the abdomen. The larva is a typical large "hornworm" caterpillar, with a spine-like process on

the dorsal (upper) surface of the eighth body segment. Caterpillars occur in two color forms, bright green, or a grayish morph. Both color morphs have scattered white speckles throughout the dorsum (back or top), with the lateral (side) margin of each body segment bearing a horizontal white stripe, and segments 4–10 bearing diagonal stripes on the lateral margins (Riotte 1986).

Blackburn's sphinx moth was described by Butler in 1880 as *Protoparce blackburni*, and named in honor of the Reverend Thomas Blackburn who collected the first specimens. It was later synonymized with the tomato hornworm (*Sphinx celeus* Hubner = *Sphinx quinquemaculatus* Hawthorn) by Meyrick (1899), and then treated as a subspecies (*blackburni*) by Rothschild and Jordan (1903). Zimmerman (1958) placed both subspecies in the genus *Phlegethontius*. Riotte (1986) demonstrated that Blackburn's sphinx moth is a distinct taxon in the genus *Manduca*, endemic to the Hawaiian Islands, and reinstated it as a full species, *Manduca blackburni*. D'Abrera (1986) tentatively considered *Manduca blackburni* to be a synonym of *Manduca quinquemaculata*, but subsequent authors (Nishida 1992; Howarth and Mull 1992) have disagreed with this view, and the findings of Riotte (1986) are accepted here. Several different common names have also been used for this species, including the tomato hawk-moth (Swezey 1924b), tobacco horn worm (Browne 1941), the Hawaiian tobacco worm (Timberlake *et al.* 1921; Swezey 1931), the Hawaiian tomato hornworm (Fullaway and Krauss 1945; Zimmerman 1958), the Blackburn hawk moth (Hawaiian Entomological Society (HES) 1990; Howarth and Mull 1992), and Blackburn's sphinx moth (49 FR 21664). In order to avoid the confusion of these common names inconsistently associated with different scientific names, and because the name "Blackburn's sphinx moth" has been used before in the **Federal Register**, that name is used here.

In Hawaii, Blackburn's sphinx moth can be confused with other large moths. Adult Blackburn's sphinx moths can be distinguished from the related sweetpotato hornworm (*Herse cingulata*) by the orange rather than white dorsal spots on the abdomen with black borders on both the anterior (front) and posterior (rear) margins of each segment, and the broader, marginal black band on the hind wing. Blackburn's sphinx moth is closely related to the North American tomato hornworm (*Manduca quinquemaculata*) and has been confused with this

species. The larvae of Blackburn's sphinx moth differ from those of the tomato hornworm and tobacco hornworm (*Manduca sexnotata*) by having two dark longitudinal stripes on the head capsule. Adults of Blackburn's sphinx moth can be distinguished from the tomato hornworm and tobacco hornworm by the presence of crescent-shaped white markings along the inner border of the black bands on the forewing.

Larvae of Blackburn's sphinx moth feed on plants in the nightshade family (Solanaceae). The natural host plants are native shrubs in the genus *Solanum* (popolo), and endemic trees in the genus *Nothocestrum* ('aiea) (Riotte 1986). Larvae voraciously consume leaves, stems, flowers and buds of these plants (Betsy Gagne, Hawaii Department of Land and Natural Resources, pers. comm., 1994). Several other host plants recorded for this species are not native to the Hawaiian Islands, and include *Nicotiana tabacum* (commercial tobacco), *Nicotiana glauca* (tree tobacco), *Solanum melongena* (eggplant), *Lycopersicon esculentum* (tomato), and possibly *Datura stramonium* (Jimson weed) (Riotte 1986). Development from egg to adult can take as little as 56 days (Williams 1947), but pupae may aestivate (lay dormant) in the soil up to a year (Williams 1931; B. Gagne, pers. comm., 1994). Adult moths can be found throughout the year, but seem to be most active during two periods, January to April, and July to October (Riotte 1986).

Blackburn's sphinx moth has been recorded from the islands of Kauai, Oahu, Molokai, Maui, and Hawaii, and collected from sea level to 760 m (2,500 ft) elevation. Most historical records were from coastal or dryland forest habitats in areas receiving less than 120 cm (50 in.) annual rainfall. On the island of Kauai, Blackburn's sphinx moth was recorded only from the coastal area of Nawiliwili. Populations were known from Honolulu, Honouliuli, and Makua on leeward Oahu, and Kamalo, Mapulehu, and Keopu on Molokai. On Hawaii, it was known from Hilo, Pahala, Kalaoa, Kona, and Hamakua. It appears that this moth was historically most common on Maui, where it was recorded from Kahului, Spreckelsville, Makena, Wailuku, Kula, Lahaina, and "West Maui." It is now known only from a single population on Maui.

Very few specimens of this species have been seen since 1940, and after a concerted effort by staff at the B.P. Bishop Museum to relocate this species in the late 1970's, it was considered to

be extinct (Gagne and Howarth 1985; 49 FR 21664). In 1984, a single population was discovered at Kanaio on East Maui. The population is located on State-owned land, which includes a natural area reserve and an area used by the Hawaii National Guard for military training. Between 1986 and 1991, a total of six specimens were taken in light traps at Kokomo, Maui, 16 kilometers (km) (10 miles (mi)) from Kanaio. This may indicate the presence of an additional population (P. Conant, Hawaii Department of Agriculture, pers. comm., 1994), although adult moths are strong fliers and these specimens could have originated at the Kanaio population. Larvae have been observed feeding on *Nothoecstrum latifolium* ('aiea) and tree tobacco (Howarth, Bishop Museum, *in litt.*, 1994), but the number of larvae and adults produced each year is unknown. While Blackburn's sphinx moth will colonize and utilize alien (non-native) plants for development, the only persistent population is associated with species of *Nothoecstrum*, and it is believed that these host plant populations are a requirement for the existence of this moth (B. Gagne, pers. comm. 1994).

The major threats to this species are predation by alien parasitoids and ants, habitat degradation through the loss of its natural host plant, and due to the single existing population, extinction by a naturally occurring event. Blackburn's Sphinx moth is also susceptible to over-collecting by private and commercial collectors. These threats will be discussed in detail in the "Summary of Factors Affecting this Species" section.

Previous Federal Action

An initial comprehensive notice of review for invertebrate animals was published May 22, 1984 (49 FR 21664), in which Blackburn's sphinx moth was considered a category 3A taxon. The Category 3A taxa classification that existed at that time were those species for which the Service had persuasive evidence of extinction. The Service published an updated notice of review for animals on January 6, 1989 (54 FR 554). Although Blackburn's sphinx moth had been rediscovered by 1985, the 1989 notice of review again listed this taxon as category 3A. In the November 15, 1994, notice of review for animals (59 FR 59020) this species was reclassified as a C1 or a candidate species for listing and was maintained as a candidate in the most recent notice of review published on February 28, 1996 (61 FR 7596).

The processing of this proposed rule conforms with the Service's final Fiscal Year 1997 listing priority guidance

published in the **Federal Register** on December 5, 1996, (61 FR 64475).

Summary of Factors Affecting This Species

Section 4 of the Endangered Species Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to Blackburn's sphinx moth (*Manduca blackburni* (Butler)) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* Despite the fact that Blackburn's sphinx moth can feed on a variety of solanaceous plants, including alien weeds in disturbed areas, the only persistent population is associated with the native tree, *Nothoecstrum latifolium*, which is believed to be required for the survival of this species. *Nothoecstrum* is an endemic genus of four species confined to the Hawaiian islands (Symon 1990). All four species, *Nothoecstrum latifolium*, *N. breviflorum*, *N. longifolium* and *N. peltatum* occur in dry to mesic (medium moisture supply) forests, the habitat in which Blackburn's sphinx moth has been most frequently recorded. This dry forest habitat has been severely degraded due to past and present land management practices including ranching, deliberate introduction of alien plants and animals, and agricultural development (Cuddihy and Stone 1990). Due to these factors, *Nothoecstrum peltatum* on Kauai and *N. breviflorum* on Hawaii are now federally listed as endangered species (59 FR 3904; 59 FR 55770). *Nothoecstrum latifolium* occurs on Kauai, Oahu, Molokai, Lanai, and Maui. Although it is not presently a protected species, it is declining and uncommon on all these islands (Hawaiian Heritage Program (HHP) 1993; Medeiros *et al.* 1993). The stand of trees at Kanaio, one of the largest in the State (Medeiros *et al.* 1993), may be the reason it still supports a population of Blackburn's sphinx moth (Art Medeiros, National Biological Survey, pers. comm., 1994).

Although *Nothoecstrum latifolium* presently occurs at moderate densities at Kanaio (HHP 1993), there has been a complete lack of seedling survival (Medeiros *et al.* 1993) and the stand is being degraded by goats (*Capra hircus*) (Medeiros *et al.* 1993; F.G. Howarth, pers. comm., 1994; Stephen L.

Montgomery, Hawaii Conservation Council, pers. comm., 1994). Goats have played a major role in the destruction of dryland and mesic forests on the Hawaiian islands (Stone 1985; van Riper and van Riper 1982).

Bocconia frutescens (tree poppy) is an alien shrub/tree that is spreading at Kanaio. Tree poppy was first discovered in the Hawaiian Islands in 1920 and is now established in dry forests on Maui and mesic forests on Hawaii (Medeiros *et al.* 1993). This fast growing shrub, the seeds of which are dispersed by fruit-eating birds, threatens the host plant of Blackburn's sphinx moth primarily through displacement and shading of immature plants (Medeiros *et al.* 1993; B. Gagne, pers. comm., 1994). *Bocconia frutescens* has been designated as a noxious weed for eradication and/or control by the Hawaiian Department of Agriculture (Medeiros *et al.* 1993).

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* Rare butterflies and moths are highly prized by collectors (Morris *et al.* 1991), who often take all individuals obtainable (59 FR 18350; USDJ, *in litt.* 1993). Unrestricted collecting and handling for scientific purposes are known to impact populations of other species of rare Lepidoptera (butterflies and moths) (Murphy 1988) and are considered significant threats to Blackburn's sphinx moth. There are examples of rewards being offered for specimens of other rare Hawaiian sphinx moths such as *Tinostoma smargditis* (Zimmerman 1958) and high prices paid for very rare specimens (Morris *et al.* 1991). Large scale poaching rings dealing in rare and endangered Lepidopterans have been investigated by the Department of Justice resulting in the indictment of several individuals (USDJ, *in litt.* 1993). Specimens of Blackburn's sphinx moth have already been secured and traded by collectors (David Preston, B.P. Bishop Museum, pers. comm., 1994).

C. *Disease and predation.* The geographic isolation of the Hawaiian Islands has restricted the number of naturally colonizing arthropods and resulted in the development of an unusual fauna. An unusually small number (15 percent) of the known families of insects are represented by native Hawaiian species. Some groups that often dominate continental arthropod faunas, such as social Hymenoptera (group nesting ants, bees, and wasps), are entirely absent from the native Hawaiian fauna (Howarth 1990). Commercial shipping and air cargo to Hawaii has resulted in the establishment of over 2,500 species of alien arthropods (Howarth 1990;

Howarth *et al.* 1994), with a continuing establishment rate of 10–20 new species per year (Beardsley 1962; 1979). In addition to the accidental establishment of alien species, alien predators and parasites used for biological control of pests have been purposefully imported and released by individuals, Republic, Territorial, State, and Federal agencies, since 1865. Between 1890 and 1985, 243 alien species were introduced, sometimes with the specific intent of reducing populations of native Hawaiian insects (Funasaki *et al.* 1988; Lai 1988). Alien arthropods, whether purposefully introduced or adventive (opportunistically introduced), pose the most serious threat to Hawaii's native insects through direct predation and parasitism, as well as competition for food or space (Howarth and Medeiros 1989; Howarth and Ramsay 1991).

Ants are not a natural component of Hawaii's arthropod fauna, and endemic insect species evolved in the absence of predation pressure from ants (Reimer 1993). Ants can be particularly destructive predators because of their high densities, recruitment behavior (ability to recruit other individuals to exploit a food source), aggressiveness, and broad range of diet (Reimer 1993). Ants are known to affect prey populations independent of prey density, and can locate and destroy isolated individuals and populations (Nafus 1993a). At least 36 species of ants are known to be established in the Hawaiian Islands, and three particularly aggressive species have had severe effects on the native insect fauna (Zimmerman 1948).

By the late 1870's, the big-headed ant (*Pheidole megacephala*) was present in Hawaii and its predation on native insects was noted by Perkins (1913), "It may be said that no native Hawaiian Coleoptera insect can resist this predator, and it is practically useless to attempt to collect where it is well established. Just on the limits of its range one may occasionally meet with a few native beetles, e.g. species of *Plagithmysus*, often with these ants attached to their legs and bodies, but sooner or later they are quite exterminated from these localities." With few exceptions, native insects, including most moths, have been eliminated from areas where the big-headed ant is present (Perkins 1913; Gagne 1979; Gillespie and Reimer 1993). This predator generally does not occur at elevations higher than 600 m (2,000 ft), and is also restricted by rainfall, rarely being found in particularly dry (less than 38–50 cm (15–20 in.) annually) or wet areas (more than 250 cm (100 in.) annually) (Reimer *et al.*

1990). It has been observed preying on eggs and all instars (developmental stages) of native Lepidoptera caterpillars, and can completely exterminate populations (Illingworth 1915; Zimmerman 1958). This ant occurs at Kanaio (Medeiros *et al.* 1993) and is a direct threat to the population of Blackburn's sphinx moth.

The Argentine ant (*Iridomyrmex humilis*) was discovered on the island of Oahu in 1940 (Zimmerman 1941) and is now established on all the main islands. Unlike the big-headed ant, the Argentine ant is primarily confined to elevations greater than 600 m (2,000 ft) in areas of moderate rainfall (Reimer *et al.* 1990). This species has been demonstrated to reduce, or even eliminate populations of native arthropods, including Lepidopterans, at high elevations in Haleakala National Park on Maui (Cole *et al.* 1992). In the Kula area of Maui, within 6 km (10 mi) of the population of Blackburn's sphinx moth population, Argentine ants have been shown to be significant predators on fruit flies (Wong *et al.* 1984).

The long-legged ant (*Anoplolepis longipes*) appeared in Hawaii in 1952 and now occurs on Oahu, Maui, and Hawaii (Reimer *et al.* 1990). It inhabits low elevation (less than 600 m (2,000 ft)), rocky areas of moderate rainfall (less than 250 cm (100 in.) annually) (Reimer *et al.* 1990). Direct observations indicate that Hawaiian arthropods are susceptible to predation by this species (Gillespie and Reimer 1993) and Hardy (1979) documented the disappearance of most native insects from Kipahulu Stream on Maui after the area was invaded by the long-legged ant.

At least two species of fire ants, *Solenopsis geminita* and *Solenopsis papuana*, are also important threats to native Hawaiian fauna (Reagan 1986; Gillespie and Reimer 1993) and occur on all the major islands (Reimer *et al.* 1990). Ants, including the fire ant, are considered to be the most important and consistent mortality factor on eggs and probably larvae of the butterfly *Hypolimnas bolina* in Guam, where both predator and prey are native (Nafus 1993a; 1993c). *S. geminita* is also known to be a significant predator on pest fruit flies in Hawaii (Wong and Wong 1988). *S. papuana* is the only abundant, aggressive ant that has successfully invaded intact mesic forest above 600 m (2,000 ft) and is still expanding its range in Hawaii (Reimer 1993).

Hawaii also has a limited fauna of native Hymenoptera parasitoids. Only two species in the family Braconidae are native to the islands (Beardsley 1961) and neither are known to attack Blackburn's sphinx moth. In contrast,

species of Braconidae are common parasitoids on the larvae of the tobacco hornworm and the tomato hornworm in North America (Gilmore 1938). There are now at least 74 alien species, in 41 genera, of braconid wasps established in Hawaii, at least 35 species of which were purposefully introduced as biological control agents (Nishida 1992). Most species of alien Braconidae and Ichneumonidae wasps that are parasitic on Lepidoptera are not host specific, but attack the caterpillars or pupae of a variety of moths (Zimmerman 1945; 1978; Funasaki *et al.* 1988). These wasps have become the dominant larval parasitoids of Hawaii even in intact, high elevation, native forest areas (Zimmerman 1948; Howarth *et al.* 1994). Wasps eggs are laid in the eggs or caterpillars of Lepidoptera and upon hatching the larvae consume internal tissues of the larvae, eventually destroying the host. At least one species established in Hawaii, *Hyposoter exiguae*, is known to attack the tobacco hornworm and the tomato hornworm in North America (Carlson 1979). This species has been recorded from all the main islands except Lanai (Nishida 1992) and was recorded parasitizing the lawn armyworm (*Spodoptera maurita*) on *Nicotiana glauca* (tree tobacco) at Spreckelsville, Maui, an alternate host at an historical locality of Blackburn's sphinx moth (Swezey 1927).

The rarity of Blackburn's sphinx moth has precluded direct documentation of alien braconid and ichneumonid wasps as parasites, but given the abundance and host breadth of the wasps, they are considered significant threats to this species (Howarth 1983; Gagne and Howarth 1985; Howarth *et al.* 1994; F.G. Howarth, pers. comm., 1994).

Small wasps in the family Trichogrammatidae parasitize insect eggs, with numerous adults sometimes developing within a single host egg. The taxonomy of this group is confusing, and it is unclear if Hawaii has any native species (Nishida 1992; Jack Beardsley, University of Hawaii, pers. comm. 1994). Several alien species are established in Hawaii (Nishida 1992) including *Trichogramma minutum*, which is known to attack the sweet potato hornworm in Hawaii (Fullaway and Krauss 1945). In 1929, the wasp *Trichogramma chilonis* was introduced in Hawaii as a biological control agent for the Asiatic rice borer (*Chilo suppressalis*) (Funasaki *et al.* 1988). This wasp parasitizes the eggs of a variety of Lepidoptera in Hawaii, including sphinx moths (Funasaki *et al.* 1988). Williams (1947) found 70% of the eggs of Blackburn's sphinx moth to be parasitized by a *Trichogramma* wasp,

probably *T. chilonis*. Over 80% of the eggs of the alien grass webworm (*Herpetogramma licarsisalis*) in Hawaii are parasitized by these wasps (Davis 1969). In Guam, *Trichogramma chilonis* effectively limits populations of the sweetpotato hornworm (Nafus and Schreiner 1986), which is considered to be under complete biological control by this wasp in Hawaii (Lai 1988). While this wasp probably affects Blackburn's sphinx moth in a density dependent manner, the level of parasitism varying with the density of the host (Nafus 1993a), and is theoretically unlikely to directly cause extinction of a population or the species, the availability of more abundant, widespread alternate hosts (any other lepidopteran eggs) may allow for the extirpation of Blackburn's sphinx moth by this or other egg parasites as part of broader host base (Tothill *et al.* 1930; Howarth 1991; Nafus 1993b).

Hawaii has no native parasitic flies in the family Tachinidae (Nishida 1992). Two species of tachinid flies, *Lespesia archippivora* and *Chaetogaedia monticola*, were purposefully introduced to Hawaii for biological control of armyworms (Funasaki *et al.* 1988; Nishida 1992). These flies lay their eggs externally on caterpillars, and upon hatching, the larvae burrow into the host, attach to the inside surface of the cuticle, and consume the soft tissues (Etchegaray and Nishida 1975b). In North America, *Chaetogaedia monticola* is known to attack at least 36 species of Lepidoptera in eight families, including Sphinx moths. *Lespesia archippivora* is known to attack Sphinx moths in addition to over 60 other species of Lepidoptera in 13 families (Arnaud 1978). These species have been recorded to attack a variety of Lepidoptera in Hawaii and are believed to depress populations of at least two native species of moths (Lai 1988). Over 40% of the caterpillars of the monarch butterfly (*Danaus plexippus*) on Oahu are parasitized by *Lespesia archippivora* (Etchegaray and Nishida 1975a) and the introduction of a related species to Fiji resulted in the extinction of a native moth there (Tothill *et al.* 1930; Howarth 1991). Both these species occur on Maui and are direct threats to Blackburn's sphinx moth.

D. *The inadequacy of existing regulatory mechanisms.* The single known population of this moth occurs on State owned land. Federal listing would automatically invoke listing under Hawaii State law, which prohibits taking and encourages conservation by State Government agencies. State regulations prohibit the removal, destruction, or damage of animals found on State lands. However, the regulations

are difficult to enforce because of limited personnel. Hawaii's Endangered Species Act (HRS, Sect. 195D-4(a)) states, "Any species of aquatic life, wildlife, or land plant that has been determined to be an endangered species pursuant to the [Federal] Endangered Species Act shall be deemed to be an endangered species under the provisions of this chapter and any indigenous species of aquatic life, wildlife, or land plant that has been determined to be a threatened species pursuant to the [Federal] Endangered Species Act shall be deemed to be a threatened species under the provisions of this chapter." Further, the State may enter into agreements with Federal agencies to administer and manage any area required for the conservation, management, enhancement, or protection of endangered species (HRS, Sect. 195D-5(c)). Funds for these activities could be made available under section 6 of the Federal Act (State Cooperative Agreements). Listing of this animal species will therefore reinforce and supplement the protection available under State law.

Alien predatory and parasitic insects are the primary cause of the reduction in range and abundance of Blackburn's sphinx moth, and are the most serious present threat to its continued existence. Some of these alien species have been purposefully introduced by the State of Hawaii's Department of Agriculture or other agricultural agencies (Funasaki *et al.* 1988) and importations and augmentations of lepidopteran parasitoids continues. Presently, there are no Federal statutes that specifically require biocontrol agents to be reviewed before they are introduced. The limited Federal review process is based on other related Federal statutes, primarily quarantine acts, registration acts, and protective acts for endangered species. These statutes have substantial limitations as tools for regulating biological control agents (Miller and Aplet 1993). Although the State of Hawaii requires that new introductions are reviewed before release (HRS Chapt. 150A), post-release biology and host range cannot be predicted from laboratory studies (Gonzalez and Gilstrap 1992; Roderick 1992) and the intentional release or augmentation of any lepidopteran predator or parasitoid is a potential threat to Blackburn's sphinx moth (Gagne and Howarth 1985; Simberloff 1992).

E. *Other natural or manmade factors affecting its continued existence.* Alien predators and parasitoids and the loss of its host plant have extirpated all populations of this moth at lower elevations and in more mesic areas.

Thus, if the Kanaio population is severely reduced in size there is now no potential for recolonization or "rescue" (Brown and Kodric-Brown 1977) of the remaining population by immigrants (Arnold 1983). The single population of Blackburn's sphinx moth increases the potential for extinction from naturally occurring events. Isolated, random events such as hurricanes, landslides and fires could result in extinction of this species if the single population site is affected.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by this species in determining to propose this rule. Based on this evaluation, the preferred action is to list Blackburn's sphinx moth (*Manduca blackburni*) as endangered. This species is threatened by habitat degradation through loss of its native host plant and by predation from ants and alien parasitoid wasps. The single extant (existing) population of this species makes it susceptible to extinction from naturally occurring events. This species is in danger of extinction throughout all of its range, and therefore the preferred action is to list the Blackburn's sphinx moth as endangered.

Critical habitat is not being proposed for this species, for reasons discussed in the "Critical Habitat" section of this rule.

Critical Habitat

Critical habitat is defined in section 3 of the Act as: (i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection and; (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not prudent for Blackburn's sphinx moth at this time. Service regulations (50 CFR

424.12(a)(1)) state that designation of critical habitat is not prudent when one or both of the following situations exist—(1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

The listing of this species under the Act publicizes the rarity of this moth and, thus, can make it attractive to researchers and/or collectors of rare Lepidoptera. In light of the existence of dealers in rare and endangered Lepidopterans (USDJ *in litt.* 1993), **Federal Register** publication of maps with precise locations and descriptions of critical habitat, as required for the designation of critical habitat, would increase the degree of threat to this moth from take by collectors and could contribute to its decline.

All involved parties including the major landowners have been notified of the importance of protecting the habitat of the remaining population of this species. Protection of the habitat of the species will also be addressed through the Act's recovery process and section 7 consultation process. Part of the single remaining population of this moth is located on State lands utilized for military training of the Hawaii National Guard. The Department of Defense is aware of the species' occurrence on the site and is required to consult with the Service to ensure that any actions that it authorizes, funds or carries out do not jeopardize the continued existence of the species. Therefore, the Service finds that designation of critical habitat for this species is not prudent at this time, because such designation would increase the degree of threat from collecting and would provide no additional benefit to the species.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation actions by Federal, State, and local agencies, private organizations, and individuals. The Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402. Section 7(a)(4) requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to insure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service.

Part of the single remaining population of this moth is located on State land utilized for military training of the Hawaii National Guard. Federally supported activities that could affect Blackburn's sphinx moth and its habitat in the future include, but are not limited to, the following: release or augmentation of biological control agents, road and firebreak construction, troop movements, and fire resulting from the use of live ammunition. Conservation of this moth is consistent with most ongoing operations at the occupied site, and the proposed listing of the species is not expected to result in significant restrictions on military use of the land, or insect pest control in Hawaii.

The Act and its implementing regulations set forth a series of general trade prohibitions and exceptions that apply to all endangered wildlife. The prohibitions, codified at 50 CFR 17.21, in part, make it illegal for any person subject to the jurisdiction of the United States to take (includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or attempt any of these), import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce, any listed species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations

governing permits are codified at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in the course of otherwise lawful activities.

It is the policy of the Service, published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of this listing on proposed and ongoing activities within the species' range. The Service believes that, based on the best available information, the following action will not result in a violation of section 9:

(1) Possession, delivery, or movement, including interstate transport and import into or export from the United States, involving no commercial activity, dead specimens of this taxon that were collected prior to the date of publication in the **Federal Register** of a final regulation adding this taxon to the list of endangered species.

Potential activities involving Blackburn's sphinx moth that the Service believes will likely be considered a violation of section 9 include, but are not limited to, the following:

(1) Collection of specimens of this taxon for private possession or deposition in an institutional collection;

(2) Sale or purchase of specimens of this taxon, except for properly documented antique specimens of this taxon at least 100 years old, as defined by section 10(h)(1) of the Act;

(3) Unauthorized use of chemical insecticides that take Blackburn's sphinx moth in violation of label restrictions;

(4) The unauthorized release of biological control agents which attack any life stage of this taxon, and;

(5) The removal or destruction of the native host plant, defined as any species in the genus *Nothocestrum*, within areas occupied by this taxon.

Questions regarding whether specific activities will constitute a violation of section 9 should be directed to the Field Supervisor of the Service's Pacific Islands Office (see **ADDRESSES** section). Requests for copies of the regulations concerning listed animals and inquiries regarding prohibitions and permits may be addressed to the U.S. Fish and Wildlife Service, Ecological Services, Endangered Species Permits, 911 N.E. 11th Avenue, Portland, Oregon, 97232-4181 (telephone 503/231-2063; facsimile 503/231-6243).

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning—

(1) Biological, commercial trade, or other relevant data concerning threat (or lack thereof) to this species;

(2) The location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population size of this species; and

(4) Current or planned activities in the subject area and their possible impacts on this species.

Final promulgation of the regulations on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to a final regulation that differs from this proposal.

The Endangered Species Act provides for one or more public hearings on this proposal, if requested. Requests must be

received within 45 days of the date of publication of the proposal in the **Federal Register**. Such requests must be made in writing and be addressed to the Ecoregion Manager (See **ADDRESSES** section).

National Environmental Policy Act

The Fish and Wildlife Service has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

Required Determinations

The Service has examined this regulation under the Paperwork Reduction Act of 1995 and found it to contain no information collection requirements. This rulemaking was not subject to review by the Office of Management and Budget under Executive Order 12866.

References Cited

A complete list of all references cited herein, as well as others, is available upon request from the Pacific Islands Office (see **ADDRESSES** above).

Author: The primary author of this document is Adam Asquith, Ecological Services, Pacific Islands Ecoregion, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, Room 6307, P.O. Box 50167, Honolulu, Hawaii 96850 (808/541-3441).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

Proposed Regulation Promulgation

Accordingly, the Service hereby proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500; unless otherwise noted.

2. Section 17.11(h) is amended by adding the following, in alphabetical order under INSECTS, to the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
* INSECTS	*	*	*	*	*		*
* Moth, Blackburn's Sphinx.	* <i>Manduca blackburni</i>	* U.S.A. (HI)	* NA	* E	* NA	* NA	* NA
*	*	*	*	*	*		*

Dated: February 12, 1997.

John G. Rogers,

Acting Director, Fish and Wildlife Service.

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50 CFR Part 17

RIN 1018-AD09

Endangered and Threatened Wildlife and Plants; Notice of Reopening of Comment Period on Proposed Rule To List Five Plants and a Lizard From Monterey County, California, as Endangered or Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; Notice of reopening of comment period.

SUMMARY: The Fish and Wildlife Service (Service), pursuant to the Endangered

Species Act of 1973, as amended (Act), gives notice that the comment period is reopened on the proposed rule to list *Astragalus tener* var. *titi* (coastal dunes milk-vetch), *Piperia yadonii* (Yadon's piperia), *Potentilla hickmanii* (Hickman's potentilla), *Trifolium trichocalyx* (Monterey clover) and the black legless lizard (*Anniella pulchra nigra*) as endangered; and *Cupressus goveniana* ssp. *goveniana* (Gowen cypress) as threatened. The comment period has been reopened to allow all interested parties to submit new information on the proposal and to provide opportunity for comment on the