

in the Koloa caves (D. Hopper, *in litt.*, 1998b, 2000a).

The narrow confines of most caves often result in focusing human travel and associated impacts to a small area, and increase the likelihood of troglobite mortality from unintentional trampling and the destruction or disturbance of food resources (e.g., roots, detrital matter). In addition, human use of caves frequently results in the importation of garbage, which encourages the invasion of caves by potential competitors and predators such as cockroaches (F. Howarth, Bishop Museum, pers. comm., 1994; A. Asquith, *in litt.*, 1994a).

The restricted area in which the Koloa cave animals occur is rapidly undergoing development (KBGM Peat Marwick 1993). The shallow cave habitat has been, and continues to be, degraded or destroyed through surface alterations such as the removal of perennial vegetation, soil fill, grading, paving, collapsing and filling of caves, diversion of waste water into subterranean voids and spaces, and other activities associated with development and agriculture.

The Kauai cave wolf spider and Kauai cave amphipod are also increasingly at risk from predation and competition for space, water, and nutrients by introduced, nonnative animals (Howarth 1985, pers. comm., 1994; A. Asquith, *in litt.*, 1994a, b; D. Hopper, *in litt.*, 1999), biological and chemical pest control activities associated with residential and golf course development (Hawaii Office of State Planning 1992); and an increased likelihood of extinction from naturally occurring events due to the small number of remaining individuals, populations, and their limited distribution.

Due to the small number of known caves inhabited by these animals, we remain concerned that these threats may be exacerbated by the publication of the exact locations of individual caves. Since publication of the proposed listing rule for these animals in 1997 (62 FR 64340), we have found evidence of increased entry and vandalism in these caves (D. Hopper, *in litt.* 1998b, 2000b). While direct and intentional threats to these species from human take and collection are not documented, the sensitive nature of these animals and their habitat to increased human presence makes increased human awareness of these caves a potential direct threat to the Kauai cave wolf spider and Kauai cave amphipod.

#### Previous Federal Action

On June 16, 1978, we published in the **Federal Register** a proposal to list the Kauai cave wolf spider as an

endangered species and the Kauai cave amphipod as threatened (43 FR 26084). That proposal was withdrawn on September 2, 1980 (45 FR 58171) as a result of a provision in the 1978 Amendments to the Endangered Species Act of 1973 that required withdrawal of all pending proposals that were not made final within 2 years of the proposal or within one year after passage of the Amendments, whichever period was longer. An initial comprehensive Notice of Review for invertebrate animals was published on May 22, 1984 (49 FR 21664), in which the Kauai cave wolf spider and Kauai cave amphipod were treated as category 2 candidates for Federal listing. Category 2 taxa were those for which conclusive data on biological vulnerability and threats were not currently available to support proposed rules to list the species as threatened or endangered.

We published an updated Notice of Review for animals on January 6, 1989 (54 FR 554). In this notice, the Kauai cave wolf spider and Kauai cave amphipod were treated as category 1 candidates for Federal listing. Category 1 taxa were those for which we had on file substantial information on biological vulnerability and threats to support preparation of listing proposals. However, in the Notice of Review for all animal taxa published on November 21, 1991 (56 FR 58804), the two Kauai cave arthropods were listed as category 2 candidates. In the November 15, 1994, Notice of Review for all animal taxa (59 FR 58982), the two Kauai cave arthropods were again elevated to category 1 candidates. Upon publication of the February 28, 1996, Notice of Review (61 FR 7596), we ceased using candidate category designations and included the two cave arthropods as candidate species. Candidate species are those for which we have on file sufficient information on biological vulnerability and threats to support proposals to list the species as threatened or endangered. The two cave arthropods were included as candidate species in the September 19, 1997 (62 FR 49398), Notice of Review.

A proposed rule to list these two species as endangered was published on December 5, 1997 (62 FR 64340), and the final rule to list them was published on January 14, 2000 (65 FR 2348). Since that time, we have conducted conservation efforts for the Kauai cave wolf spider and Kauai cave amphipod through voluntary partnerships with two private landowners in the Koloa area.

In the proposed listing rule, we indicated that designation of critical

habitat for the Kauai cave wolf spider and Kauai cave amphipod was not prudent. Our concern was that publication of precise maps and descriptions of critical habitat in the **Federal Register** could increase human visitation to these highly sensitive cave habitats, which could lead to incidents of vandalism, destruction of habitat, and unintentional cases of take. Also, we believed that critical habitat designation would not provide any additional benefit to these species beyond that provided through listing as endangered.

However, in the final listing rule, we determined that critical habitat designation was prudent as we did not find specific evidence of taking, vandalism, collection, or trade of these species or any other similarly situated species. Also, we found that there may also be some educational or informational benefit to designating critical habitat. Therefore, we found that the benefits of designating critical habitat for these two species outweighed the benefits of not designating critical habitat.

On June 2, 2000, we were ordered by the U.S. District Court for the District of Hawaii (in *Center for Biological Diversity v. Babbitt and Clark*, Civ. No. 99-00603 (D. Haw.)) to publish the final critical habitat designation for both cave animals by February 1, 2002. The plaintiffs and the Service entered into a consent decree in a separate action agreeing to jointly seek an extension of this deadline (*Center for Biological Diversity v. Norton*, Civ. No. 01-2063 (D.D.C. October 2, 2001)).

On February 14, 2001, we contacted landowners on the island of Kauai, notifying them of our requirement to designate critical habitat for the Kauai cave wolf spider and Kauai cave amphipod. We included a copy of a fact sheet describing the two species and their habitat, and a map showing the presumed historic and current range (based on occupied habitat and the distribution of similar geology and soils) of one or both of these species.

On January 30, 2002, the U.S. District Court in Hawaii approved a joint stipulation to modify the terms of the June 2 order to extend the deadline to August 10, 2002. Subsequently, the Service determined that an additional extension of time was needed to complete this designation process. On August 21, 2002, the U.S. District Court in Hawaii approved another joint stipulation extending the date for the final rule designating critical habitat for both cave animals to March 31, 2003.

The proposed rule published March 27, 2002, proposed to designate four critical habitat units which collectively