

discrepancies existed between different data sources, the most current data were used. Changes in this final rule that decrease the boundaries of many units are based on additional information received during the public comment period and in meetings with additional species experts and land managers who were not available for comment during the preparation of the proposals. The changes in boundaries reflected in this final rule are based on additional information about areas lacking primary constituent elements or those that are too degraded to be restored. While we agree that additional time would be beneficial for the preparation of these final rules, we are required under the court-approved stipulation to finalize this designation by January 31, 2003. If provided with new information, we may revise the critical habitat designation in the future.

(3) *Comment:* One peer reviewer asked if the Service considered modeling the potential distribution based on known habitat correlates, as in Elith and Burgman (2002). Another peer reviewer stated that the Service should use spatial modeling of estimated values of selected habitat parameters for each species (such as elevation, median annual rainfall, vegetation units) as a first step in the process, rather than screen-digitizing. Some of the data on primary constituent elements (e.g., breeding system, dispersal mechanisms) can be inferred from similar species, but other pieces of critical information may not be currently available and should be the subject of further research. After the preliminary habitat polygons are identified, historic range can be determined either objectively or subjectively based on the known location points for a particular species. The steps going from narrative descriptions of habitat elements to geographical units are not well documented. The Service should elaborate on its methodology for defining the primary constituent elements for each species and the subsequent critical habitat.

*Our Response:* We agree that modeling of potential distribution within historic range is important, and have used this type of modeling, based on the limited available information. We did not feel that valid habitat parameters for each species could be developed without first digitizing known current and historic range and using that information, along with available digitized information on elevation, rainfall, and vegetation units, to determine potential habitat. Using the information from existing and historically known plant locations, we

used available digitized information on elevation, rainfall, and vegetation units, as well as advice from species experts, to model the potentially suitable habitat for each species. The critical habitat designated is the subset of suitable habitat that was determined to be essential to the conservation of each species (see the "Methods" section for more detail).

(4) *Comment:* Some reviewers commented that deletion of significant portions of any of the proposed critical units is likely to prevent the recovery of, and lead to the extinction of, listed species. Smaller units present real management challenges and may be so small that their ecological integrity and the viability of listed plants can't be maintained. The new proposal indicates that a wide range of habitats are covered in the areas proposed by the Service as critical habitat units. Units have been expanded to provide contiguous blocks of habitat that will reduce fragmentation and edge effects and are large enough to offer a variety of microsites. This will also improve the ability of listed species to maintain gene flow, reestablish populations following population declines or catastrophes, and to colonize new areas. However, the amount of dry and mesic forest included in proposed critical habitat is still very limited. Protecting critical habitat is essential not only for the recovery of threatened and endangered plant species, but also to protect the ecosystems on which these species rely for their long-term survival and recovery. Management actions for critical habitat need to allow for the expansion of populations and include the ecological matrix in which critical habitat is embedded. It is important that the adjacent noncritical habitat areas be managed for control or elimination of nonnative species, if recovery is to be achieved for the areas of less than 1,000 acres. On the other hand, some commenters felt that the increase in acreage from the first to the second proposal was the Service's attempt to get the community to be willing to go back to the original proposal. One commenter asked what the Service would do if newly obtained, good quality, scientific information proves the current best scientific knowledge is totally inaccurate.

*Our Response:* The Act requires us to use the best available scientific and commercial information in undertaking species listing and recovery actions, including the designation of critical habitat as set forth in this rule. In this final rule, we concluded that many areas were not essential for the conservation of the Kauai plant species, based on newly available information

concerning status of the species in specific areas and level of habitat degradation. Several units or portions of units proposed as critical habitat have been excluded because they are not essential for the conservation of the species. We determined them to be non-essential due to their lacking primary constituent elements, or having primary constituent elements but there are other places for these species that have more primary constituent elements and/or are less degraded. See the "Summary of Changes from the Revised Proposed Rule" section for the justification for each unit's changes.

We realize that smaller areas will most likely require more management to maintain the plant populations and their habitat, but in many cases they are the only areas with the primary constituent elements needed for each species. We concur on the importance of protecting the ecosystems on which these species depend, as stated in purpose of the Act (section 2(b)), and of managing areas large enough to maintain and expand populations. We considered the importance of this, as well as the location of primary constituent elements, when delineating the boundaries of critical habitat for these final designations of critical habitat. We included areas that provide the biological and other processes that are essential for the conservation of the species. We acknowledge the potential negative impacts of edge effects on small habitat fragments. However, these species' primary constituent elements are found only within the areas that were designated critical habitat, and making them larger would add areas that lack the primary constituent elements. All of the changes in critical habitat from the first proposal, through the second, to this final, are based on the best available information received during comment periods, and are based on biological issues, not political or social issues. If new information becomes available indicating the existing critical habitat designations are not essential for the conservation of the species and/or that other areas are, we may propose revised designations for those species at that time.

(5) *Comment:* Critical habitat designation should be primarily directed toward areas that are currently being intensively managed or may be the subject of conservation agreements in the future for those species that are known to naturally occur in these habitats. A suggested method is that once realistic management units have been identified based on the management factors to address limiting factors (e.g. fence lines, fire control), the