

these species and dissemination of information regarding their essential habitat requirements.

Therefore, we believe that the designation of critical habitat is prudent for these 24 plant species:

Argyroxiphium sandwicense ssp. *macrocephalum*; *Asplenium fragile* var. *insulare*; *Clermontia lindseyana*; *Clermontia peleana*; *Colubrina oppositifolia*; *Cyanea mceldowneyi*; *Dubautia plantaginea* ssp. *humilis*; *Geranium arboreum*; *Geranium multiflorum*; *Gouania vitifolia*; *Hedyotis coriacea*; *Hesperomannia arbuscula*; *Lipochaeta kamolensis*; *Lysimachia lydgatei*; *Melicope adscendens*; *Melicope balloui*; *Melicope ovalis*; *Nototrichium humile*; *Remya mauiensis*; *Sanicula purpurea*; *Schiedea haleakalensis*; *Schiedea hookeri*; *Tetramolopium arenarium*; and *Tetramolopium capillare* because the potential benefits of critical habitat designation outweigh the potential threats.

Methods

As required by the Act and regulations (section 4(b)(2) and 50 CFR 424.12), we used the best scientific information available to determine areas that contain the physical and biological features that are essential for the conservation of *Adenophorus periens*, *Alectryon macrococcus*, *Argyroxiphium sandwicense* ssp. *macrocephalum*, *Asplenium fragile* var. *insulare*, *Bidens micrantha* ssp. *kalealaha*, *Bonamia menziesii*, *Brighamia rockii*, *Cenchrus agrimonoides*, *Centaurium sebaeoides*, *Clermontia lindseyana*, *Clermontia oblongifolia* ssp. *mauiensis*, *Clermontia samuelii*, *Clermontia peleana*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Cyanea copelandii* ssp. *haleakalaensis*, *Cyanea glabra*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea hamatiflora* ssp. *hamatiflora*, *Cyanea lobata*, *Cyanea mceldowneyi*, *Cyrtandra munroi*, *Delissea undulata*, *Diellia erecta*, *Diplazium molokaiense*, *Dubautia plantaginea* ssp. *humilis*, *Flueggea neowawraea*, *Geranium arboreum*, *Geranium multiflorum*, *Gouania vitifolia*, *Hedyotis coriacea*, *Hedyotis mannii*, *Hesperomannia arborescens*, *Hesperomannia arbuscula*, *Hibiscus brackenridgei*, *Ischaemum byrsonae*, *Isodendron pyrifolium*, *Kanaloa kahoolawensis*, *Lipochaeta kamolensis*, *Lysimachia lydgatei*, *Mariscus pennatifolius*, *Melicope adscendens*, *Melicope balloui*, *Melicope knudsenii*, *Melicope mucronulata*, *Melicope ovalis*, *Neraudia sericea*, *Nototrichium humile*, *Peucedanum sandwicense*, *Phlegmariurus mannii*, *Phyllostegia mannii*, *Phyllostegia mollis*,

Phyllostegia parviflora, *Plantago princeps*, *Platanthera holochila*, *Pteris lidgatei*, *Remya mauiensis*, *Sanicula purpurea*, *Schiedea haleakalensis*, *Schiedea hookeri*, *Schiedea nuttallii*, *Sesbania tomentosa*, *Solanum incompletum*, *Spermolepis hawaiiensis*, *Tetramolopium arenarium*, *Tetramolopium capillare*, *Tetramolopium remyi*, *Vigna owahuensis*, and *Zanthoxylum hawaiiense*. This information included the known locations, site-specific species information from the HINHP database and our own rare plant database; species information from the Center for Plant Conservation's (CPC's) rare plant monitoring database housed at the University of Hawaii's Lyon Arboretum; island-wide Geographic Information System (GIS) coverages (e.g., vegetation, soils, annual rainfall, elevation contours, land ownership); the final listing rules for these 69 species; the December 18, 2000, proposal; the April 3, 2002, revised proposal; information received during the public comment periods and the public hearings; recent biological surveys and reports; our recovery plans for these species; any species and management information received from landowners, land managers, and interested parties for the islands of Maui and Kahoolawe; discussions with botanical experts; and recommendations from the Hawaii and Pacific Plant Recovery Coordinating Committee (HPPRCC) (see also the discussion below) (GDSI 2000; HINHP Database 2000; HPPRCC 1998; Service 1995a, 1995b, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001; 65 FR 66808; 67 FR 3940; CPC, *in litt.* 1999).

In 1994, the HPPRCC initiated an effort to identify and map habitat believed to be important for the recovery of 282 endangered and threatened Hawaiian plant species. The HPPRCC identified these areas on most of the islands in the Hawaiian chain, and in 1999, we published them in our *Recovery Plan for the Multi-Island Plants* (Service 1999). The HPPRCC expects there will be subsequent efforts to further refine the locations of important habitat areas and that new survey information or research may also lead to additional refinement of identifying and mapping of habitat important for the recovery of these species.

The HPPRCC identified essential habitat areas for all listed, proposed, and candidate plants and evaluated species of concern to determine if essential habitat areas would provide for their habitat needs. However, the HPPRCC's mapping of habitat is distinct from the regulatory designation of

critical habitat as defined by the Act. More data have been collected since the recommendations made by the HPPRCC in 1998. Much of the area that was identified by the HPPRCC as inadequately surveyed has now been surveyed to some degree. New location data for many species have been gathered. Also, the HPPRCC identified areas as essential based on species clusters (areas that included listed species, as well as candidate species and species of concern) while we have only delineated areas that are essential for the conservation of the specific listed species at issue. As a result, the critical habitat designations in this rule include not only some habitat that was identified as essential in the 1998 recommendations but also habitat that was not identified as essential in those recommendations.

Primary Constituent Elements

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12, in determining which areas to propose as critical habitat, we are required to base critical habitat determinations on the best scientific and commercial data available and to consider those physical and biological features (primary constituent elements) that are essential to the conservation of the species and that may require special management considerations or protection. These features include, but are not limited to: Space for individual and population growth, and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing of offspring, germination, or seed dispersal; and habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species.

Much of what is known about the specific physical and biological requirements of *Alectryon macrococcus*, *Argyroxiphium sandwicense* ssp. *macrocephalum*, *Asplenium fragile* var. *insulare*, *Bidens micrantha* ssp. *kalealaha*, *Bonamia menziesii*, *Brighamia rockii*, *Cenchrus agrimonoides*, *Centaurium sebaeoides*, *Clermontia lindseyana*, *Clermontia oblongifolia* ssp. *mauiensis*, *Clermontia samuelii*, *Colubrina oppositifolia*, *Ctenitis squamigera*, *Cyanea copelandii* ssp. *haleakalaensis*, *Cyanea glabra*, *Cyanea grimesiana* ssp. *grimesiana*, *Cyanea hamatiflora* ssp. *hamatiflora*, *Cyanea lobata*, *Cyanea mceldowneyi*, *Cyrtandra munroi*, *Diellia erecta*, *Diplazium molokaiense*, *Dubautia plantaginea* ssp. *humilis*, *Flueggea*