

propagation and outplanting, and weed control, Ulupalakua Ranch provided labor and materials valued at \$18,000, and USGS-BRD provided materials and technical assistance as well as staff and volunteer labor. In the 4 ha (10 ac) Auwahi project area, Ulupalakua Ranch has built the enclosure fence, outplanted native plants grown in the greenhouse including *Alectryon macrococcus* var. *auwahiensis* and *Zanthoxylum hawaiiense*, removed the majority of nonnative alien species within the fence, and removed all ungulates. The Service provided \$31,675 through an agreement with Ulupalakua Ranch for restoration work at Puu Makua. Ulupalakua Ranch has provided in-kind labor and materials valued at \$37,055 to construct a fence around the 40-ha (100-ac) enclosure, removal of ungulates, control of nonnative plants and out-planting of native plants. The first two tasks have been completed, with weed control and out-planting ongoing.

A third voluntary partnership project undertaken in cooperation with the Ulupalakua Ranch is the Auwahi II Dryforest Restoration Project. The Service provided \$76,500 (matched by in-kind services valued at \$52,000) for this 8-ha (20-ac) restoration effort adjacent to the Auwahi I project. This project is ongoing, and will employ the same methods used at Auwahi I: construct of ungulate enclosure fence; remove ungulates; control nonnative plants; and out-plant native species (including listed species).

In addition, Ulupalakua Ranch entered a partnership with Ducks Unlimited, a private conservation organization, and the Natural Resources Conservation Service's (NRCS) Wetland Reserve Program in 2000, to create wetland complexes suitable for two endangered birds, the Hawaiian Goose, nene (*Branta sandvicensis*) and Hawaiian duck, koloa (*Anas wyvilliana*). NRCS Wetland Reserve Program (WRP) provided \$100,000 for funding and technical support to develop the wetland complex, Ducks Unlimited provided matching funds and provided full survey, design, construction management and completion of wetland development practices, and Ulupalakua Ranch provided fencing, equipment, labor or other in-kind services as required to match the WRP funds. Ducks Unlimited also conducted waterfowl monitoring at the four ponds for one full year after pond construction. In 2001, a 14 ha (35 ac) area was fenced and encompassed four constructed artificial ponds and associated upland habitat at a 1,585 m (5,200 ft) elevation site. The ponds were created to attract nene and koloa pairs to forage and nest

within the protected pond/wetland area, which totals approximately 0.4 ha (1 ac) of surface water, with 1–2 m (3–6 ft) depths filled and maintained by natural hydrology and rainfall. Nene may naturally disperse to Ulupalakua Ranch from Haleakala National Park and the few koloa now present on Maui may disperse to potential higher elevation habitat at the ranch. Normal grazing and management of pasture lands throughout Ulupalakua Ranch will also provide additional foraging areas for nene.

As endangered species are anticipated on the ranch, Ulupalakua Ranch is developing a Safe Harbor Agreement with the Service and the State through the Safe Harbor program. The Safe Harbor program encourages proactive management to benefit endangered and threatened species on non-Federal lands by providing regulatory assurances to landowners that no additional Endangered Species Act restrictions will be imposed on future land, water, or resource use for enrolled lands. The intended purpose of the ranch's Safe Harbor Agreement is to restore and enhance foraging and breeding habitat for two endangered Hawaiian waterbirds at Ulupalakua Ranch in East Maui. Under this Agreement, Ulupalakua Ranch will create a fenced 14-ha (35-ac) pond/wetland area and maintain it for 20 years. If endangered species are attracted to the area, Ulupalakua Ranch's voluntary conservation activities will contribute to recovery by increasing their reproduction, survival, and distribution on Maui.

The portion of proposed units Maui H, I1, I2, and I4 on Haleakala Ranch Company lands is occupied habitat for seven species: *Alectryon macrococcus*; *Cyanea mceldowneyi*; *Diellia erecta*; *Diplazium molokaiense*; *Geranium arboreum*; *Melicope balloui*; and *Phlegmariurus mannii*. It is unoccupied habitat for 11 species: *Argyroxiphium sandwicense* ssp. *macrocephalum*; *Asplenium fragile* var. *insulare*; *Clermontia lindseyana*; *Cyanea glabra*; *Geranium multiflorum*; *Lipochaeta kamolensis*; *Neraudia sericea*; *Phyllostegia mannii*; *Phyllostegia mollis*; *Plantago princeps*; and *Platanthera holochila*.

Haleakala Ranch Company is involved in several important voluntary conservation agreements that benefit the species included in the proposed critical habitat. For example, in the mid-1980s, Haleakala Ranch Company granted TNCH a perpetual conservation easement that included over 19,000 ha (47,000 ac) (Waikamoi Preserve) on Maui in order to protect its native forest

resources and watershed from damage caused by pigs and cattle. Haleakala Ranch Company has been working with the Central Maui Soil and Water Conservation District to address soil and resource issues. In cooperation with the NRCS Environmental Quality Incentives Program (EQIP), Haleakala Ranch Company has implemented a weed control program that has been on-going for over 80 years. Eight years ago, the Haleakala Ranch Company Directors created and filled a Land Steward position in order to shepherd the ranch's conservation efforts and update the conservation plans for all Haleakala Ranch Company lands.

In addition, the Service's Partners for Fish and Wildlife Puu Pahu agreement with Haleakala Ranch Co. and NRCS within proposed unit Maui I1 was entered into in fiscal year 2001 with the stated purpose of protecting and restoring native subalpine dry shrubland. This agreement included construction of a 6.9 km (4.3 mi) enclosure fence and removal of ungulates within the area in order to allow the already semi-intact native vegetation to regenerate. Preservation of this area conserves critically endangered species of plants and animals in one of Hawaii's most restricted ecosystem types (subalpine dry shrubland). This management strategy is consistent with the recovery of these species. The Service and NRCS provided funding for fencing materials (\$91,418 from the Service) and are providing technical assistance on the conservation of *Geranium arboreum* and restoration of the subalpine dry shrubland. Haleakala Ranch Co. is building the fence and removing the ungulates (in-kind cost-share valued at \$28,875). This work is planned for completion by August 30, 2003. Haleakala Ranch Co. has also worked with DOFAW for the past 2 years on an ungulate-free reserve for native habitat regeneration in the Waiopae area. Haleakala Ranch Co. is fencing the area to improve grazing management from the forest to the shoreline. These actions will include riparian protection to improve habitat for native plants, especially *Lipochaeta kamolensis* and *Alectryon macrococcus*, and watershed management.

According to our published recovery plans, recovery of the species addressed in this rule will require self-sustaining populations distributed across the landscape of sufficient robustness to withstand periodic threats due to natural disaster or biological threats (Service 1995a, 1995b, 1996a, 1996b, 1997, 1998a, 1998b, 1999, 2001). The highest priority recovery tasks include active management such as plant