

(TNCH 1993, 1994a, 1994b, 1997, 1999a, 1999b, 1999c).

Under the NAP program, the State of Hawaii provides matching funds on a two-to-one basis for management of private lands dedicated to conservation. In order to qualify for this program, the land must be dedicated in perpetuity through transfer of fee title or a conservation easement to the State or a cooperating entity. The land must be managed by the cooperating entity or a qualified landowner according to a detailed management plan approved by the Board of Land and Natural Resources. Once approved, the 6-year partnership agreement between the State and the managing entity is automatically renewed each year so that there are always 6 years remaining in the term, although the management plan is updated and funding amounts are reauthorized by the board at least every 6 years. By April 1 of any year, the managing partner may notify the State that it does not intend to renew the agreement; however, in such case, the partnership agreement remains in effect for the balance of the existing 6-year term, and the conservation easement remains in full effect in perpetuity. The conservation easement may be revoked by the landowner only if State funding is terminated without the concurrence of the landowner and cooperating entity. Prior to terminating funding, the State must conduct one or more public hearings. The NAP program is funded through real estate conveyance taxes which are placed in a Natural Area Reserve Fund. Participants in the NAP program must provide annual reports to the DLNR and DLNR makes annual inspections of the work in the reserve areas. See Haw. Rev. Stat. Secs. 195-1-195-11 and Hawaii Administrative Rules Secs. 13-210.

Management programs within the three preserves are documented in long-range management plans and yearly operational plans. These plans detail management measures that protect, restore, and enhance the rare plants and their habitats within the preserves and in adjacent areas (TNCH 1993, 1994a, 1994b, 1997, 1999a, 1999b, 1999c). These management measures address the factors which led to the listing of the 19 species including control of non-native species of ungulates, rodents, weeds, and fire control. In addition, habitat restoration and monitoring are also included in these plans.

#### Kamakou Preserve

The primary management goals within Kamakou Preserve are to prevent degradation of native forest by reducing feral ungulate damage; suppress

wildfires; and improve or maintain the integrity of native ecosystems in selected areas of the preserve by reducing the effects of non-native plants.

Specific management actions to address feral ungulate impacts include the construction of fences, including strategic fencing (fences placed in proximity to natural barriers such as cliffs); staff hunting; and implementation of organized hunting through the Molokai Hunters Working Group. By monitoring ungulate activity within the preserve, the staff are able to direct hunters to problem areas, thereby increasing hunting success. If increased hunting pressure does not reduce feral ungulate activity in the preserve, the preserve staff will work with the hunting group to identify and implement alternative methods (TNCH 1994, 1999).

The non-native plant control program within Kamakou Preserve focuses on habitat-modifying non-native plants (weeds) and prioritizes them according to the degree of threat to native ecosystems. A weed priority list has been compiled for the preserve, and control and monitoring of the highest priority species are ongoing. Weeds are controlled manually, chemically, or through a combination of both. Preventive measures (prevention protocol) are required by all who enter the preserve. This protocol includes such things as brushing footwear before entering the preserve to remove seeds of non-native plants. In addition, the staff are actively promoting awareness of aggressive non-native plants in Hawaii and their impacts to native ecosystems in the local communities on Molokai through public education at schools, fairs, and displays at the airport.

Wildfire pre-suppression and response plans are coordinated with the Maui County Fire Department and the DOFAW Maui District Forester. The Kamakou Wildfire Management Plan is reviewed annually with the fire department and updated as necessary (TNCH 1994, 1999). In the event of fires in areas bordering the preserve, staff from Kamakou assist with fire suppression in concert with DOFAW staff.

Natural resource monitoring and research address the need to track the biological and physical resources of the preserve and evaluate changes in these resources to guide management programs. Vegetation is monitored throughout the preserve to document long-term ecological changes; rare plant species are monitored to assess population status; and, following fires on the boundaries or within the

preserve, burned areas are assessed for ingress of weeds and recovery of native plants. In addition, the preserve staff provide logistical support to scientists and others who are conducting research within the preserve.

In addition, TNCH, DOFAW, the Service and other Federal agencies including the National Park Service, and neighboring landowners of East Molokai's watershed areas have formed a partnership (East Molokai Watershed Partnership) through a memorandum of understanding to ensure the protection of over 8,903 ha (22,000 ac) of land on the island. While the partnership is still in its infancy, the members have agreed, in principle, to participate in cooperative management activities within the East Molokai watershed because they believe that effective management is best achieved through the coordinated actions of all major landowners in the watershed.

Kamakou Preserve provides habitat for two populations of 300 mature, reproducing individuals of the short-lived perennial *Bidens wiebkii*; four populations of 300 mature, reproducing individuals of the short-lived perennial *Canavalia molokaiensis*; two populations of 300 mature, reproducing individuals of the short-lived perennial *Clermontia oblongifolia* ssp. *brevipes*; five populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea mannii*; four populations of 300 mature, reproducing individuals of the short-lived perennial *Cyanea procera*; four populations of 300 mature, reproducing individuals of the short-lived perennial *Labordia triflora*; one population of 300 mature, reproducing individuals of the short-lived perennial *Lysimachia maxima*; three populations of 300 mature, reproducing individuals of the short-lived perennial *Schiedea sarmentosa*; three populations of 300 mature, reproducing individuals of the short-lived perennial *Silene alexandri*; and three populations of 300 mature, reproducing individuals of the short-lived perennial *Stenogyne bifida*. Critical habitat is designated for these 10 island-endemic species elsewhere on Molokai within their historical ranges to reach the recovery goal of 8 to 10 populations for each species (see "Descriptions of Critical Habitat Units" section). This preserve provides habitat for three populations of 500 mature, reproducing individuals of the short-lived perennial *Mariscus fauriei*; three populations of 100 mature, reproducing individuals of the long-lived perennial *Melicope mucronulata*; and one population of 300 mature, reproducing individuals of the short-lived perennial