

DISCUSSION

The Ka'āpahu parcel hosts diverse native plant communities and animal habitat. The native plant species richness is expected for a rainforest plant community on East Maui, yet few populations of endangered, candidate, SOC or rare species were found during this survey. If unmanaged, the native plant species diversity that persists could diminish in a short time. Many of the populations observed exist because they were next to sheer cliffs, on steep slopes or in protected gullies. For example, only one population of *Cyanea asplenifolia*, a candidate species, was known to occur on East Maui prior to the discovery of a new population during this survey. This new population was found below a ridge with no existent ground cover due to extensive pig damage.

Of the 157 native species previously listed as occurring at Ka'āpahu, only five were not observed during this survey. One record of a small subshrub in the mustard family, 'anaunau (*Lepidium bidentatum* var. *o-waihiense*) is a SOC; it was collected December 9, 1919, by C.N. Forbes on the Ka'āpahu coastal bluffs. In 1995, an epiphytic fern ally, *Huperzia stemmermanniae*, and a small terrestrial orchid SOC, 'awapuhi-a-kanalao (*Liparis hawaiensis*), were discovered by park staff at 1,158 m (3,800 ft) and between 1,067 and 1,219 m (3,500 and 4,200 ft) elevation, respectively (Medeiros and Chimera 1995). Two more endemic species, kilioe (*Embelia pacifica*) and 'aiea (*Nothocestrum longifolium*), were observed in 1995 as well (Medeiros and Chimera 1995).

The longevity of these rare, endangered, SOC and candidate plant species is in jeopardy due to the presence of feral animals. Ungulate populations are moving into the area from the west and numbers continue to increase (Park Staff pers. comm.). Animal populations are currently not being managed or controlled. Based on observations of similar habitats in this region, regeneration, recruitment and perpetuation of these species will not continue with the constant digging and ground disturbance from feral ungulates (Anderson and Stone 1993). It is probable that invasive non-native plant species, which were observed in all vegetation zones, will continue to establish quickly where ground is disturbed.

With few mesic habitats protected on East Maui, this region is a rare resource of associated native flora and fauna. Since managed and protected by HALE staff, Kīpahulu Valley is now one of the best examples remaining of an intact native Hawaiian rainforest ecosystem in the state. HALE has a tremendous opportunity to provide a safe refuge for its native, rare and endangered species. If Ka'āpahu is fenced and feral animals and invasive non-native plants are managed, the remaining native plant species could reclaim much of the degraded ridges and landscape as has occurred in Kīpahulu Valley (Anderson and Stone 1993). Ka'āpahu's native plant populations could serve as valuable genetic source material for restoration in many other fenced areas throughout the state.