notice in the Federal Register (40 FR 27823) of its acceptance of the Smithsonian report as a petition within the context of section 4(c)(2) (now section 4(b)(3)) of the Act, and giving notice of its intent to review the status of the plant taxa named therein. The Service published an updated notice of review for plants on December 15, 1980 (45 FR 82479), September 27, 1985 (50 FR 39525), February 21, 1990 (55 FR 6183), and September 30, 1993 (58 FR 51144). Cyanea grimesiana ssp. grimesiana (as Cyanea grimesiana var. mauiensis and var. munroi), Euphorbia haeleeleana, Isodendrion laurifolium, Isodendrion longifolium, and

Platanthera holochila were considered Category 1 species in the 1980 and 1985 notices of review. Category 1 species (candidates) are those for which the Service has on file substantial information on biological vulnerability and threats to support preparation of listing proposals but for which listing proposals have not yet been published because they are precluded by other listing activities. Since the 1993 notice, new information suggests that the nine taxa not previously considered Category 1 species are sufficiently restricted in numbers and distribution and imminently threatened and therefore warrant listing.

Summary of Factors Affecting the **Species**

Section 4 of the Endangered Species Act and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal lists of endangered and threatened species. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). The threats facing the 14 taxa in this proposed rule are summarized in Table 2.

TABLE 2.—SUMMARY OF THREATS

Species	Alien mammals					Alien	Sub-	Fire	Human	Limited
	Cattle	Deer	Goats	Pigs	Rats	plants	strate loss	Fire	impacts	numbers
Achyranthes mutica	Х		Х			X				X1,3*
Cenchrus agrimonioides	1		P	X		X		P	Р	X2,3
Cyanea grimesiana ssp.		X	Χ	X	Р	X	X	Р	Р	,-
grimesiana.										
Cyperus trachysanthos						X				X1
Euphorbia haeleeleana		X	X	X	X	X		P	Р	
Isodendrion laurifolium		X	X	X		X			Р	
Isodendrion longifolium			X	X		X		P	Р	
Panicum niihauense						X			X	X1,3
Phyllostegia parviflora				X		X				X1,3
Platanthera holochila	X			X		X			X	X1,3
Sanicula purpurea				X		X			Р	X1
Schiedea hookeri			X	X		X		P	Р	
Schiedea kauaiensis		X	X	X		X	X			X1,3
Schiedea nuttallii			X	X		X	X	P	Р	X2,3

X = Immediate and significant threat.

P = Potential threat.

- 1 = No more than 5 populations. 2 = No more than 10 populations.
- 3 = No more than 100 individuals.

These factors and their application to Achyranthes mutica A. Gray (No common name (NCN)), Cenchrus agrimonioides Trin. (kamanomano), Cyanea grimesiana Gaud. ssp. grimesiana (haha), Cyperus trachysanthos Hook. & Arnott (pu'uka'a), Euphorbia haeleeleana Herbst (NCN), Isodendrion laurifolium A. Gray (aupaka), Isodendrion longifolium A. Gray (aupaka), Panicum niihauense St. John (lau 'ehu), Phyllostegia parviflora (Gaud.) Benth. (NCN), Platanthera holochila (Hillebr.) Kraenzl. (NCN), Sanicula purpurea St. John & Hosaka (NCN), Schiedea hookeri A. Gray (NCN), Schiedea kauaiensis St. John (NCN), and Schiedea nuttallii Hook. (NCN) are as follows:

A. The present or threatened destruction, modification, or curtailment of its habitat or range

Native vegetation on all of the main Hawaiian Islands has undergone extreme alteration because of past and present land management practices including ranching, deliberate alien animal and plant introductions, and agricultural development (Cuddihy and Stone 1990, Wagner et al. 1985). The Northwestern Hawaiian Islands have undergone similar alteration, but to a lesser degree. The primary threats facing the 14 plant taxa included in this rule are destruction and modification of habitat by feral animals and competition with alien plants (see Factor E).

Thirteen of the 14 taxa in this rule are threatened by feral animals. Animals such as pigs, goats, axis deer, blacktailed deer, and cattle were introduced either by the early Hawaiians (pigs) or

more recently by European settlers (all ungulate species) for food and/or commercial ranching activities. Over the 200 years following their introduction, their numbers increased and the adverse impacts of feral ungulates on native vegetation have become increasingly apparent. Beyond the direct effect of trampling and grazing native plants, feral ungulates have contributed significantly to the heavy erosion still taking place on most of the main Hawaiian islands (Cuddihy and Stone 1990).

Pigs, originally native to Europe, Africa, and Asia, were introduced to Hawaii by the Polynesian ancestors of Hawaiians, and later by western immigrants. The pigs escaped domestication and invaded primarily wet and mesic forests of Kauai, Oahu, Molokai, Maui, and Hawaii. Pigs pose an immediate threat to one or more

⁼ No more than 100 individuals and/or no more than 5 populations.