

Terrestrial Plant Communities Monitoring

Network Parks Where Resource Is Monitored

- * Hawai'i Volcanoes National Park (HAVO)
- * Haleakalā National Park (HALE)
- * Kalaupapa National Historical Park (KALA)
- * National Park of American Samoa (NPSA)
- * War in the Pacific National Historical Park (WAPA)
- * American Memorial Park (AMME)
- * Kaloko-Honokōhau National Historical Park (KAHO)

Importance: Endemic, Endangered, and Ethnobotanic

Each terrestrial plant community is significant in its own way. For example, in the parks of Hawaii and American Samoa, geographic isolation has led to extraordinary rates of endemism (e.g., 90% of Hawaii's native flowering plants are endemic species). Additionally, Hawaii's wet forests contain numerous endangered species as well as plants used for traditional practices (such as maile, *Alyxia oliviformis*, used for lei making), while its subalpine shrublands contain unique and spectacular plants such as the Haleakalā silversword (*Argyroxiphium sandwicense*). The wet forests of American Samoa contain plants of ethnobotanical value and provide food for two rare fruit bats (*Pteropus samoensis* and *P. tonganus*). Similarly, AMME's mangrove (*Bruguiera gymnorhiza*) forest provides critical habitat for two endangered bird species and a rare tree snail. Within WAPA on the northern half of Guam, the limestone forest represents a highly diverse assemblage of native trees, shrubs, and ferns, many of which are found only in the Mariana Islands.

Long-Term Monitoring

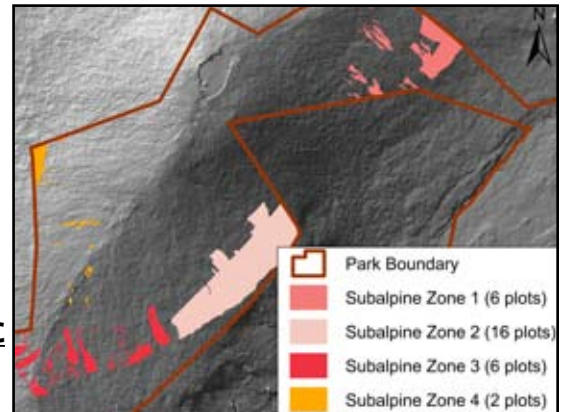
Prior to now, much of the plant communities monitoring in PACN parks has focused on short-term changes due to specific events such as fencing, ungulate removal, or fire. This monitoring protocol takes a long-term, systematic approach to monitoring five plant communities (wet forest, subalpine shrubland, coastal strand, mangrove forest, and limestone forest) from seven parks. In each of these plant communities scientists will establish a series of randomly located plots that will be surveyed every five years for community composition and structure (i.e., species cover and density by layer). This protocol will allow scientists and resource managers to detect significant

Monitoring Objective

- * Determine the status and trends at 5-year intervals of composition and structure in five terrestrial plant communities

Management Applications

- * Determine health and management needs of five terrestrial plant communities.
- * Monitor shifts in community composition and structure due to climate change, catastrophic events (e.g., hurricanes) and other influences
- * Identify rapid increases in invasive species distribution and abundance
- * Identify native species diebacks due to disease, competition, or other factors
- * Evaluate the effectiveness of management actions such as fencing, ungulate control, or pesticide applications



Detailed map of the 4 subalpine shrubland zones at HAVO. The number of sampling plots in each zone (as listed in the legend) is proportional to the area of each zone.

