



Early Detection of Invasive Plant Species Monitoring Plan

Standard Operating Procedure #6: Selecting Survey Locations

Version 1.0 (1 June 2017)

Change History

New Version	Revision Date	Author	Changes Made	Justification
1.0	6/1/2017	A. Ainsworth, J. Gross	Developed.	Significant changes to draft ED narrative document.

Only changes in this specific SOP will be logged here. Version numbers will be incremented by a whole number (e.g., Version 1.3 to Version 2.0) when a change is made that significantly affects requirements or procedures. Version numbers will be incremented by decimals (e.g., Version 1.6 to Version 1.7) when there are minor modifications that do not affect requirements or procedures for publication in the series.

Purpose

This SOP describes the process by which corridors are selected to survey for early detection plant species within Pacific Island Network (PACN) parks as part of the Early Detection of Invasive Species Monitoring Plan (Ainsworth et al. 2017). Selecting which corridors to survey is a key part of this plan and is a function of program and park goals, available resources, and accessibility. Prior to each surveying event, prioritization of corridors to be surveyed will be reviewed by NPS staff.

Identifying Corridors within Parks

Corridors or invasive pathways within each park are areas where new invasive plant species are most likely to disperse and establish including roads, trails, fence lines, power lines, parking lots, buildings, and other areas disturbed by humans. Geographic Information System (GIS) layers detailing transportation, resource management, and structures or buildings are compiled for each PACN park. Maps are created using GIS which identify all potential survey corridors. Maps will also include GPS coordinates at corridor endpoints and indicate the main direction of travel along corridors (if any). Nonlinear regions with high invasive plant introduction potential (e.g., visitor

centers, offices, and parking lot clusters) are depicted as polygons. Corridors are displayed by type and total length or perimeter (Ainsworth et al. 2017: Appendix A “Target Corridors”).

Prioritizing Corridors

Although it is highly recommended that all corridors are surveyed, this is not always possible particularly for large parks such as HAVO and HALE. Prioritization is important to ensure that park staff are informed when incipient populations of highly invasive plants are threatening critical park areas. Corridors are prioritized based on: 1) the quality of the surrounding community or area, 2) the risk of invasion related to intensity of use, and 3) existence of other park sampling efforts along the corridor. Communication with park staff is very important to accurately assess each corridor.

Quality of Surrounding Community

Corridors within and neighboring high quality plant communities are higher priorities for early detection surveys than corridors in low quality communities or highly invaded sites. High quality or focal plant communities were identified in PACN parks by scientists and park resource managers based on relative intactness, unique species assemblages, prevalence across parks, uniqueness to their respective areas, and usefulness as indicators of environmental change. As part of the Focal Terrestrial Plant Community Monitoring Protocol (Ainsworth et al. 2011), permanent and temporary plots are sampled within these plant communities every five years including: (1) wet forests, (2) subalpine shrublands, (3) coastal strand, (4) limestone forests, and (5) mangrove forests. While invasive species are monitored in these plots, the plots themselves are often far from corridors. By the time an invasive species were to be reported in a Focal Community plot, it likely would already have become widely distributed and beyond means of removal.

Intensity of Use

High risk corridors or those with regular human traffic are higher priorities for early detection surveys than corridors with infrequent human disturbance. Areas around primary roads, visitor centers, and parking lots used by visitors and park staff are high risk because invasive plant propagules are likely to be transported by vehicles or humans. Infrequently traveled, 4-wheel drive roads are lower priorities. Trails and structures also vary in invasion risk depending on use and neighboring habitat or community type.

Existing Park Efforts

Many PACN parks currently have related efforts that involve visiting or surveying along corridors providing opportunity for fortuitous sightings of incipient invasive species. Any new invaders along these corridors are more likely to be detected and reported than along trails and roads that are not visited or surveyed regularly by park staff. Therefore, corridors that are not regularly visited by park staff are higher priority than those visited and surveyed. For example, fence lines at HAVO are systematically field checked for damage by HAVO staff multiple times per year and therefore are a lower priority than most trails even when the fences occur in high quality areas. Though staff-checked fence lines are a lower priority than other trails, they will still be surveyed by I&M field crews, but at a less frequent interval. Species identification guides are part of the outreach component of this plan and will be directed at those park staff who work along corridors that may be excluded from early detection monitoring.