



Early Detection of Invasive Plant Species Monitoring Plan

Standard Operating Procedure #20: Reporting

Version 2.0 (15 June 2017)

Change History

New Version	Revision Date	Author	Changes Made	Justification
1.0	2007	PACN	Developed.	
2.0	6/15/2017	J. Gross A.Ainsworth	Modified for ED reporting.	Previous version too general.

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 provides an overview of the types of reports ranging from informal species alerts to formal single and multi-year summary reports produced for Pacific Island Network (PACN) as part of the Early Detection of Invasive Species Monitoring Plan (Ainsworth et al. 2017). It also provides detailed information on generating the single and multi-year reports. The purpose of the informal management briefing alerts are to ensure that park staff are informed of new plant sightings as quickly as possible whereas the purpose of the single year report is to summarize data for the current year, compare the data of the current year with data from previous years for those parks, and most importantly inform each park of the presence and quantity of incipient invasive species found. The multi-year analysis report takes a more comprehensive approach, examining data of each year with respect to other parks, the PACN network, and if possible the Pacific Region. These reports should be produced under the direction of the project lead.

Report Types

The single and multi-year monitoring reports are part of a broad set of report categories, including (1) protocol/plan reviews, (2) monitoring reports, (3) scientific writing and presentations, (4) management briefings including invasive plant species alerts, (5) web site communication, and (6)

interpretation and outreach. Table 1 describes these report types and their purpose, audiences, responsible parties, production frequency, and review processes.

Table 1. Summary of anticipated products from Early Detection of Invasive Plant Species Monitoring Plan, grouped by type and frequency.

Type of Report	Purpose of Report	Targeted Audience	Initiated by	Frequency of Reporting	Review Process
1. Protocol/Plan Review					
Protocol/Plan Review Reports	Document progress made and challenges encountered, where actual procedures fall short or exceed expectations, recommend necessary changes. Document changes since last protocol/plan review report. Document the overall quality of protocol/plan in terms of objectives and implementation, effectiveness, and data management.	Superintendents, park resource staff, Inventory and Monitoring Program (I&M) staff, external scientists, partners	Project Lead	Preliminary report within 1-3 years of implementation and at appropriate multi-year intervals after multiple monitoring cycles.	Peer review at network and regional level
2. Monitoring Reports					
Vital Signs Reports, Including Status and Trend Information	Document single year monitoring activities and survey efforts, describe current resource status, discuss patterns and trends of monitored resources, present data analysis results. Document changes in monitoring narrative, communicate monitoring efforts to resource managers. For the multi-year report, use a more comprehensive scale of analysis including multiple parks, networks and regions.	Park resource staff, PACN staff, external scientists, partners	Project Lead	Single year reports compiled by April 30 each survey year. Multi-year reports compiled after completion of multiple monitoring cycles.	Peer review at network level
3. Scientific Writing and Presentations					
PACN Vital Signs Monitoring Conference	Review and summarize information on this Vital Sign, help identify emerging issues and generate new ideas	Park resource staff, network staff, external scientists, partners	Project Lead, park scientists	Biennial	Peer review at national level
Scientific journal articles and book chapters	Document and communicate advances in knowledge, provides a broader perspective on quality assurance and peer review	External scientists, Park resource managers, and professional staff	Project Lead, park scientists	Variable	Peer review according to journal or book standards

Table 1. Summary of anticipated products from Early Detection of Invasive Plant Species Monitoring Plan, grouped by type and frequency.

Type of Report	Purpose of Report	Targeted Audience	Initiated by	Frequency of Reporting	Review Process
Other symposia, conferences and workshops	Review and summarize information on this Vital Sign, help identify emerging issues and generate new ideas	External scientists, professional staff, Park resource managers, and other resource managers.	Project Lead, park scientists	Variable (e.g., Hawai'i Conservation Conference)	Peer review at network level; for papers may also be peer reviewed
4. Management Briefings					
Executive briefings	Update Superintendents and other VIPs on park-specific findings and potential resource issues; suggest action items where appropriate	Individual Superintendents and other VIPs	Project Lead, Program Manager	As needed	Peer review by network and monitoring staff
Species alerts	Phone and/or email communication of incipient plant species sightings.	Resource managers	Field Crew Leader	Variable up to weekly	Peer review by monitoring staff
5. Web site Posting					
Web-based media	Centralized repository of all final reports and information to ensure products are easily accessible in commonly-used electronic formats (See SOP #18 "Product Posting and Distribution")	Superintendents, Park resource staff, PACN staff, external scientists, partners, public	Typically the Data Manager	As media is completed	Peer review at network level to NPS web standards as finalized, reviewed products
6. Interpretation and Outreach					
Science Days	Communicate main monitoring findings as well as underlying data; discuss potential significance for management, further monitoring, potential additional research needs, and for outreach	Superintendents, park resource staff, PACN staff, managers, partners, public	Project Lead, Technicians, and others as needed	Variable by park, annual when possible	Meeting / presentation itself is a form of review

Table 1. Summary of anticipated products from Early Detection of Invasive Plant Species Monitoring Plan, grouped by type and frequency.

Type of Report	Purpose of Report	Targeted Audience	Initiated by	Frequency of Reporting	Review Process
Interpretive Conversations	Interactive conversations with park interpretive staff to discuss main monitoring findings as well as underlying data; discuss potential significance for management, further monitoring, potential additional research needs, and descriptions of outreach products	Park interpretive staff, environmental educators, PACN staff	Project Lead, Technicians, and others as needed	Variable by park, annual when possible	Meeting / presentation itself is a form of review
Park Interpretive / outreach sessions	Review and summarize information on PACN Vital Signs; engage and involve greater participation in monitoring efforts	Park staff, public, partners	Project Lead, Technicians, and others as needed	Variable	Peer review by network
Park staff meetings (results synthesis)	Communicate results to non-technical audiences, discuss potential significance for management, receive feedback on resource and monitoring issues in park operations	All park staff, volunteers, and partners	Project Lead, Technicians, and others as needed	Annually for each network park	Peer review by network

Management Briefings – Species Alerts

The invasive plant “species alerts” are an informal reporting tool designed to immediately inform park resource managers of any new park species records. In addition to new park records, I&M staff can also provide information on specific park-identified reportable species. Reportable species are species that are undocumented or new to parks. The Field Leader will initiate immediate phone and/or regular email (e.g., weekly) alerts to park contacts and include species abundance and location information. Regular alerts are particularly important for incipient invasive species that reproduce quickly and may experience multiple fruiting cycles by the time the single year report is completed. As technology improves and becomes more affordable, field crews may incorporate the use of new tools (e.g., Smart phones, laser rangefinders with Bluetooth connections) to provide park managers “real time” incipient invasive species locations and field photos. Currently, park staff are not equipped to immediately respond to real time alerts and phone calls and weekly emails are adequate without overwhelming park staff with communication and data. All information contained in alerts will also be available to park staff at the end of the field season in single year reports and GIS datasets.

Monitoring Reports

The single and multi-year monitoring reports are key elements in the reporting process. The list below provides information on producing these reports including minimal content requirements:

1. Reports should be written following the NPS Natural Resources Publications template, as described in SOP #17 “Product Delivery Specifications and Schedule.”
2. The single year reports should be completed by April 30 in the year following the field season. The multi-year reports will be completed after several monitoring cycles have been completed. See SOP #17 for the complete schedule of deliverables.
3. Report the following monitoring parameters for the current year, at a minimum:
 - A methods section with sufficient detail to allow a reader to understand the data collection and analysis process
 - List of field crew members who performed the monitoring
 - Detail of the survey effort (total length surveyed in each park)
 - List of non-native species detected along corridors in each park
 - Summary statistics (i.e., richness, abundance, etc.) listed in SOP #19 “Corridor Survey Data Analysis.” If applicable, aggregate summary statistics for sections of parks such as plant communities.
 - The current-year parameter values should be added to a table that lists similar measures for all monitored years.
 - The current status (i.e. follow up) of incipient species detected during previous survey(s).
 - Description of management programs related to the plants recorded.
 - Copy of target species list used for the early detection surveys and description of any changes made to target list.
4. Reports should include or be accompanied by maps of all sampling corridors. Many of the above parameters will be presented in thematic maps to provide an indication of how these parameters vary spatially. These integrated GIS datasets will be available to park managers

and importantly will consistently provide much needed up-to-date information on species presence, location, and abundance across parks.

5. The multi-year report should provide the same information as the annual report, as well as:
 - Comparisons between different parks, the PACN network as a whole, and if possible the Pacific Region
 - An evaluation of the operational aspects of the monitoring protocol/plan
 - Observed trends in early detection
6. The project lead should provide a copy of the report and associated data to the PACN data manager for archiving. See SOP #17 “Product Delivery Specifications and Schedule” for additional details on managing digital data and reports.