

# Invasive Species Question 1 – Status and Trends

**Goal:** Reduce the potential for introduction, establishment, and spread of invasive species and reduce existing infestations.

**Objective:** Monitor populations of high priority invasive species in cooperation with other agencies. Monitor management considerations and associated practices common to all resource groups as well as specific actions relative to individual resource management, such as transportation, vegetation, recreation, wilderness and roadless areas, minerals, and for fish, wildlife, watershed and botany resources.

**Background:** The Forest Service Manual for noxious weed management on the Tongass (FSM 2080 R10 TNF-2000-2007-1) was developed for the overall purpose of preventing the further spread of high priority invasive plants (FSM 2081.2). The supplement identifies management considerations and associated practices common to all resource groups as well as specific actions relative to individual resource management, such as transportation, vegetation, recreation, wilderness and roadless areas, minerals, and for fish, wildlife, watershed and botany resources.

This supplement also outlines an invasive plant risk assessment process that is required for all project analysis. The risk assessment identifies known invasive plants in the project area, describes habitat vulnerability, vectors of spread, habitat alterations expected as a result of the project implementation, mitigation measures, if needed, and anticipated overall response of the invasive plants as a result of the proposed action.

## Invasive Species Question 1: What are the status and trends of areas infested by aquatic and terrestrial invasive species relative to the desired condition?

### Monitoring Results

Currently, information is available on three known amphibian / aquatic species: red legged frog (*Rana aurora*), pacific tree frog (*Pseudacris regilla*) and Atlantic salmon (*Salmo salar*). Alaska Department of Fish and Game (ADF&G) is responsible for inventory and monitoring of Atlantic salmon. In fiscal year (FY) 2012, no additional surveys for the invasive amphibians were conducted on the Tongass, and no occurrences of Atlantic salmon were documented by the Forest Service. There are several other species receiving attention throughout the state, including didemnum tunicate (*Didemnum vexillum*), didymo or 'rock snot' (*Didymosphenia geminata*), and introduced (non-naturally occurring) northern pike (*Esox lucius*). These species are generally being managed by other agencies including the ADF&G and U.S. Fish and Wildlife Service (USFWS). One aquatic plant is receiving particular attention: *Elodea Canadensis*, which is listed by the International Union for Conservation of Nature (IUCN) as one of the world's 100 worst invasive alien species. *Elodea* has been found in the interior of Alaska and is reported to be spreading via several vectors, one of which is float planes. This information is particularly important to Southeast Alaska, where air taxi services are common and can include use of aircraft from anywhere in the country.



**Invasive Species Picture 1.** Forest Service hydrogeologist David Schmerge standing in Canada thistle patch near Kensington Mine, Juneau Ranger District.  
*Photo by Ellen Anderson.*

Knowledge of terrestrial invasive plant species on the Tongass is much more comprehensive than aquatic species, especially for invasive plants. We continue to survey for invasive plant infestations during project planning. We also survey for invasive plants in sensitive habitats and in non-management land use designations (LUDs) in an effort to meet our desired condition of natural and near natural conditions in these LUDs. All data are entered into the Natural Resource Information System (NRIS) database for future monitoring of status and trends in these populations.

During FY 2012, the Forest conducted fifty-one invasive plant surveys for a total of 642.5 acres (table 1). Surveys were conducted along existing and proposed road corridors, rock quarries,

timber sale units, shorelines, lake margins, estuaries, riparian areas, and recreation sites. A total of thirty-two different invasive plant species were recorded. All records were entered into the NRIS database.

Survey results suggest that invasive species are abundant along existing road systems and may have the potential to spread into non-roaded areas. We continue to find invasive plants in areas of high disturbance where human access is frequent (e.g. trails, campgrounds, cabins, log transfer facilities, mine sites) or historic disturbance has occurred (e.g. abandoned canneries and hatcheries). In addition, invasive plants are sometimes found in sensitive areas, such as estuaries, shorelines, and riparian areas. These areas appear to be prone to invasion by select species, such as creeping buttercup (*Ranunculus repens*), white sweetclover (*Melilotus officinalis*), dandelion (*Taraxacum officinale*), and reed canary grass (*Phalaris arundinacea*).

## Evaluation of Results

Monitoring data regarding invasive species infestations have consisted mainly of summaries of invasive plant inventories conducted and the species found, the number of project invasive plant risk assessments completed, anecdotal information concerning invasive animal sightings, and descriptions of invasive species policy or procedural documents. The data collected did not provide the information necessary to determine status and trends of species.

**Invasive Species 1 Table 1.** Summary of invasive plant inventory survey acreages and species recorded on the Tongass National Forest, FY 2012

<b>District</b>	<b>Acres surveyed</b>	<b>Invasive species recorded</b>
Admiralty NM	0.0	N/A
Craig RD	50.4	<i>Phalaris arundinacea</i> , <i>Leucanthemum vulgare</i> , <i>Trifolium repens</i> , <i>Ranunculus repens</i> , <i>Hieracium aurantiacum</i>
Hoonah RD	53.0	<i>Cerastium fontanum</i> , <i>Leucanthemum vulgare</i> , <i>Phalaris arundinacea</i> , <i>Plantago major</i> , <i>Ranunculus repens</i> , <i>Sonchus arvensis</i> , <i>Taraxacum officinale</i> , <i>Trifolium repens</i>
Juneau RD	10.8	<i>Cirsium arvense</i> , <i>Plantago major</i> , <i>Phalaris arundinacea</i> , <i>Stellaria media</i> , <i>Taraxacum officinale</i> , <i>Trifolium repens</i>
Ketchikan-Misty Fiords RD	0.0	N/A
Petersburg RD	100.0	<i>Phalaris arundinacea</i> , <i>Phleum pratense</i> , <i>Plantago major</i> , <i>Poa annua</i> , <i>Poa pratensis</i> , <i>Taraxacum officinale</i>
Sitka RD	23.0	<i>Cerastium fontanum</i> , <i>Leucanthemum vulgare</i> , <i>Phalaris arundinacea</i> , <i>Plantago major</i> , <i>Poa annua</i> , <i>Poa pratensis</i> , <i>Plantago lanceolata</i> , <i>Ranunculus repens</i> , <i>Rumex acetosa</i> , <i>Sonchus arvensis</i> , <i>Taraxacum officinale</i> , <i>Trifolium hybridum</i> , <i>Trifolium repens</i>
Thorne Bay RD	405.3	<i>Brassica rapa</i> , <i>Cerastium fontanum</i> , <i>Cirsium arvense</i> , <i>Cirsium vulgare</i> , <i>Crepis tectorum</i> , <i>Digitalis purpurea</i> , <i>Euphrasia nemorosa</i> , <i>Geranium robertianum</i> , <i>Hieracium aurantiacum</i> , <i>Hieracium caespitosum</i> , <i>Hieracium umbellatum</i> , <i>Hypericum perforatum</i> , <i>Hypochaeris radicata</i> , <i>Lupinus polyphyllus</i> , <i>Medicago lupulina</i> , <i>Mycelis muralis</i> , <i>Phalaris arundinacea</i> , <i>Plantago major</i> , <i>Poa pratensis</i> , <i>Ranunculus repens</i> , <i>Senecio jacobaea</i> , <i>Sonchus arvensis</i> , <i>Tanacetum vulgare</i> , <i>Taraxacum officinale</i> , <i>Trifolium repens</i>
Wrangell RD	0.0	N/A
Yakutat RD	0.0	N/A
<b>Total</b>	<b>642.5</b>	<b>45 species</b>

In 2010, a forest-wide invasive plant monitoring protocol was developed to answer the monitoring question concerning the status and trends of invasive plant infestations on the Tongass. For the new protocol, we refined the monitoring question by relating it to the Forest Plan goals and objectives for invasive plants and developing the following associated monitoring criteria: the frequency of occurrence of each high priority invasive plant species is limited to current amounts forest-wide at the beginning of each sampling/reporting period. This criteria should be included as part of the current monitoring question to maintain a consistent standard for future evaluations of the monitoring design and results.

According to the new protocol, the above criteria will be monitored on the Tongass by analyzing the frequency of occurrence of high priority invasive plant species on a subset of permanent Forest Inventory and Analysis (FIA) plots, which are part of a nationwide forest inventory sampling grid. This monitoring protocol has not yet been implemented.

Information concerning terrestrial invasive animal species on the Tongass is sparse and has often been obtained through occasional local inventories or incidental sightings. The Tongass cooperates with other agencies, such as ADF&G and USFWS, in collecting information on aquatic invasive species such as Atlantic salmon. Further evaluation is required to determine the need for a forest-wide protocol for monitoring the status and trends of aquatic and terrestrial invasive animal infestations on the Forest.

## **Action Plan**

In FY 2012, a forest-wide wilderness invasive plant working group was created for the purpose of sharing information and resources among the nineteen wilderness areas on the Tongass. The working group assisted the Tongass wilderness program in developing the invasive plant component of the Forest Plan wilderness character monitoring protocol. This component is related to monitoring the status and trends of invasive plant infestations in wilderness areas. The wilderness character monitoring is scheduled for implementation in FY 2013.

A primary action we are continuing is the completion of an environmental analysis (EA) for the control and management of weeds within the Petersburg and Wrangell Ranger Districts. Upon completion, this document will allow the Forest Service to treat currently known weed infestations as well as any future undetected or new infestations, through an early detection and rapid response program strategy. Treatments being evaluated and recommended in the EA include mechanical, manual and chemical methods, which provide for an integrated pest management approach to weed control. As these two districts move forward in this program of treatments over the next ten years, an overall decrease in area and/or frequency of invasive plant infestations is anticipated within this portion of the Tongass.

The Forest evaluates the conditions and status of habitat relative to invasive plants and follows up with environmental assessment. Some small populations are being treated manually and will likely continue to decrease. Since our treatment efforts are limited, the Forest is putting more emphasis in prevention measures. As such, in FY 2013 the Forest Service Manual direction for noxious weed management on the Tongass (FSM 2080 R10 TNF Supplement 2000-2007-1) is being revised to add more weed prevention. A total of 38 Weed Best Management Practices are being drafted for implementation in FY 2013.