

Methods Used to Collect Invasive Plant Species Data on Military Installations

DOD Invasive Species Short Course
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<http://invasiveplantcontrol.com>

The control of invasive species is a primary natural resources management issue on military installations because of the potential impacts invasive species have on military training and the degradation they can cause to the natural environment.

Mapping invasive species can help meet DOD natural resources stewardship responsibilities, support mission requirements, and fulfill requirements under two important guidances;

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- **Executive Order 13112, Invasive Species of 1999**
 - **Federal Noxious Weed Act of 1974**

EO 13112, Invasive Species

EO 13112 requires that, subject to the availability of appropriations and to the extent practicable and permitted by law, each federal agency use relevant programs and authorities to:

- Prevent the introduction of invasive species;
- Detect and control such species in a cost-effective manner;
- Monitor invasive species populations;
- Provide for restoration of native habitats that have been invaded;
- Conduct research on invasive species to prevent introduction and for sound control; and
- Promote public education on invasive species.



Common reed (*Phragmites australis*)

Federal Noxious Weed Act

The Noxious Weed Act provides for the control of noxious plants on lands under the control or jurisdiction of the federal government. The law allows poisonous plants and noxious weeds to be controlled or destroyed in an approved manner when the plants interfere with the safe and efficient use of the land, endanger the health and welfare of personnel, or infest adjacent property.



Giant Salvinia (*Salvinia molesta*)

Invasive Plant Mapping

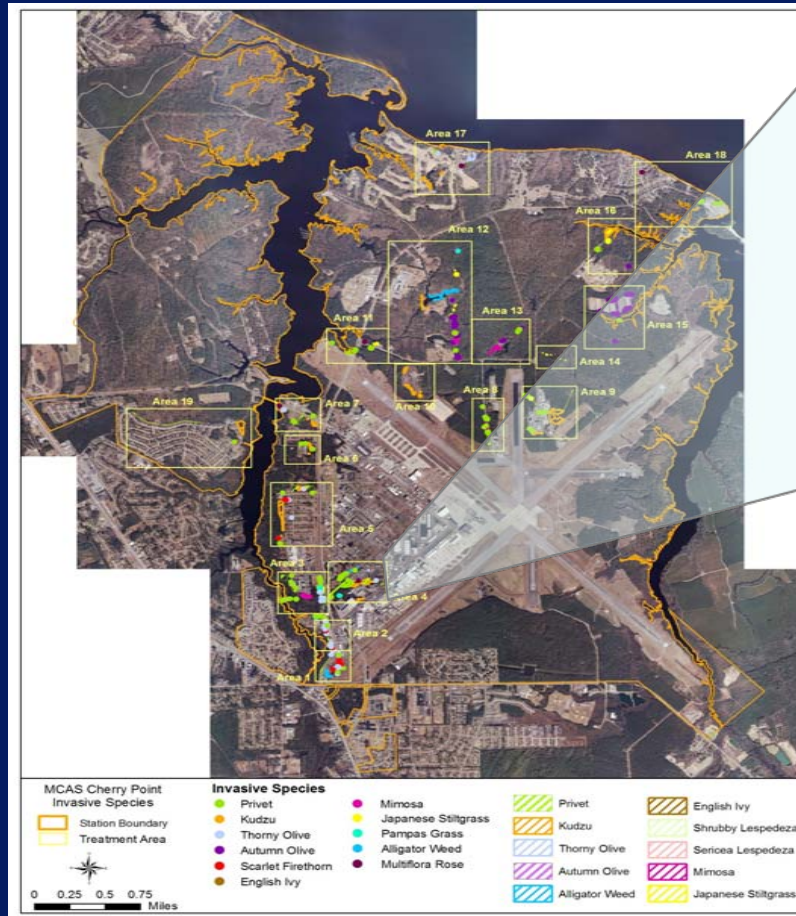
Invasive species mapping enables DOD natural resources managers to:

- Accurately assess the extent and location of infestations,
- Prioritize areas and/or species recommended for treatment,
- Develop an accurate cost estimate for treatment,
- Assess control efforts, and
- Monitor populations.



Japanese stiltgrass (*Microstegium vimineum*)

Mapping Tools and Techniques

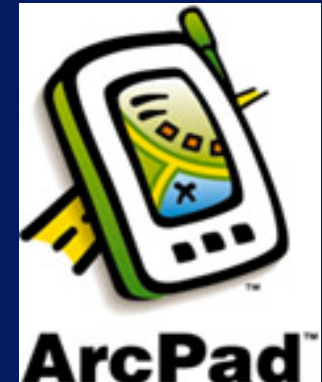


Invasive Species Mapping
MCAS Cherry Point, NC.

Tools for Data Collection



<http://www.trimble.com/index.aspx>



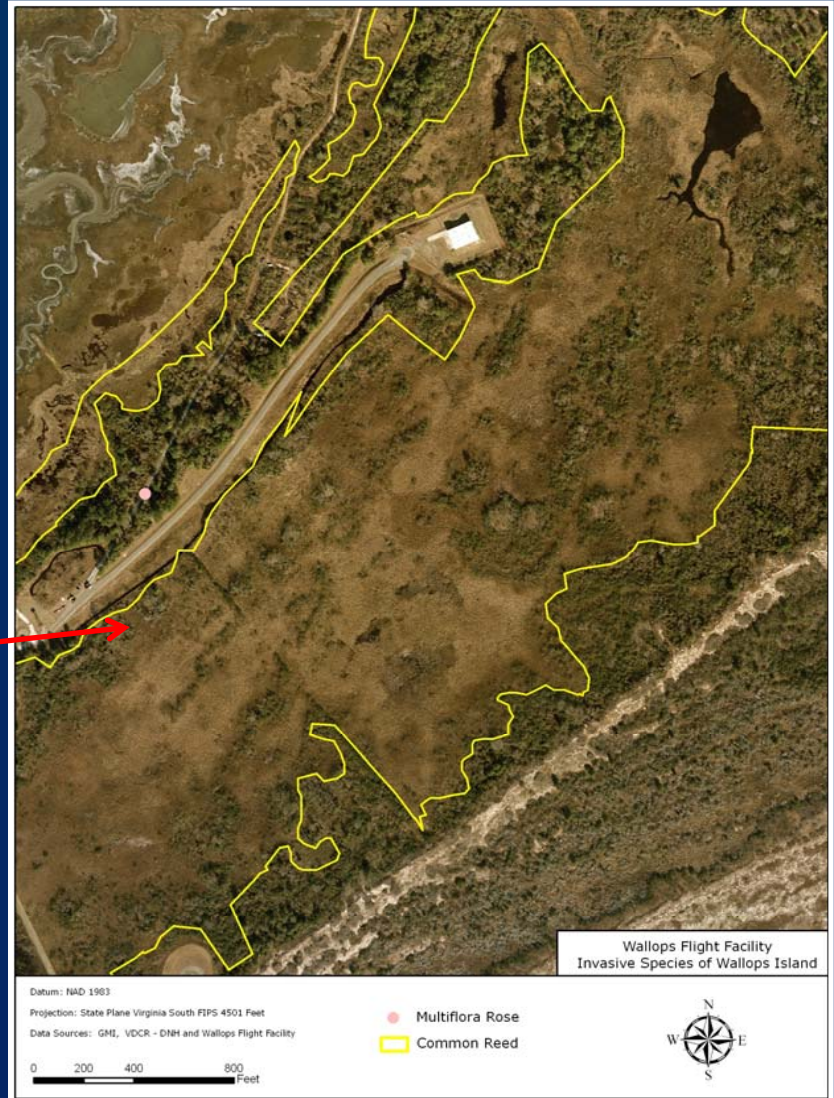
<http://www.esri.com/>

Data Collection

GPS mapping

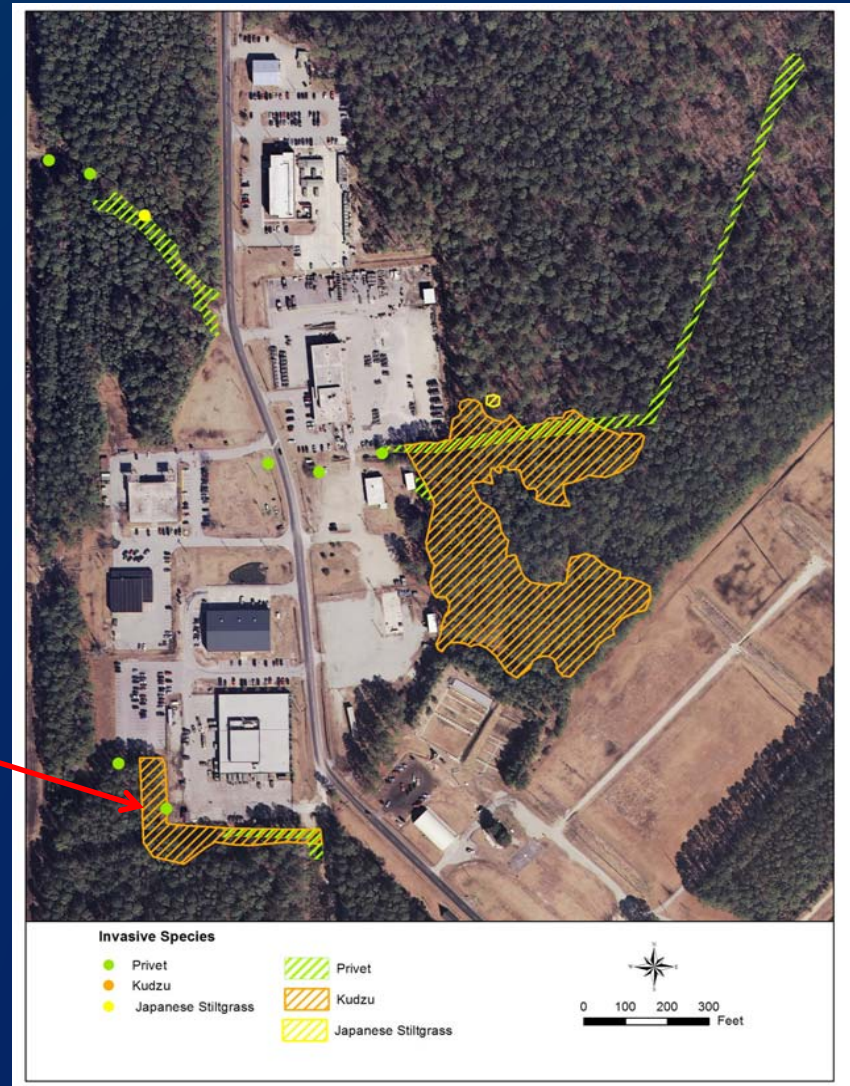
Photo-interpretation





GPS Mapping

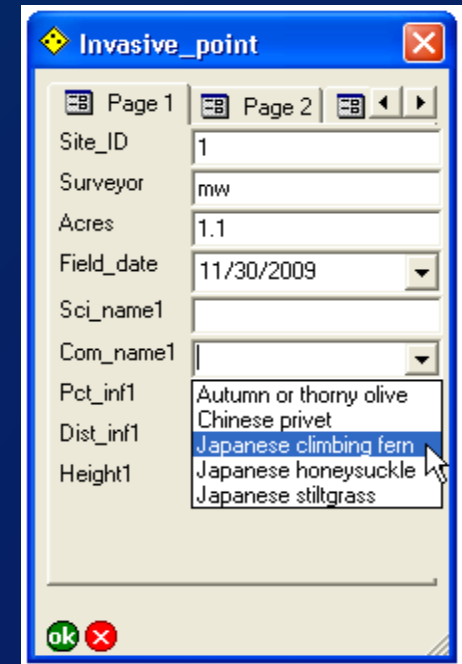
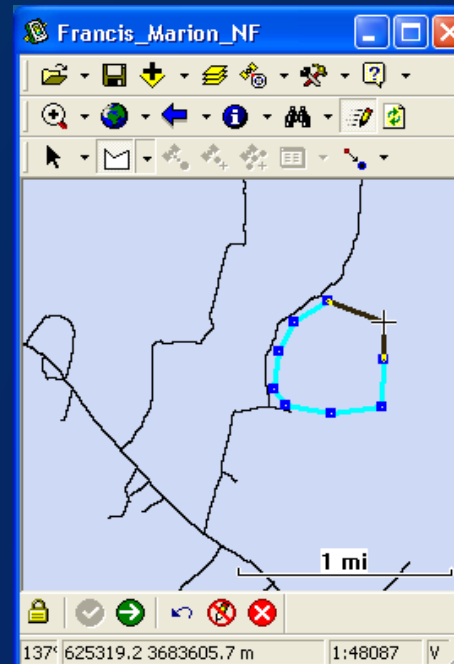
Points, Lines, and Polygons



Data Attributes

Primary data attributes include:

- Site ID
- Surveyor
- Acres (calculated in GIS)
- Date
- Scientific name
- Common name
- Percent cover of infestation
- Distribution of infestation
- DBH
- Secondary species



Data Attributes

Other important information may include:

- Wetlands
- Open water
- RT&E Species
- Soil stability
- Native vegetation
- Adjacent property



Data Summary

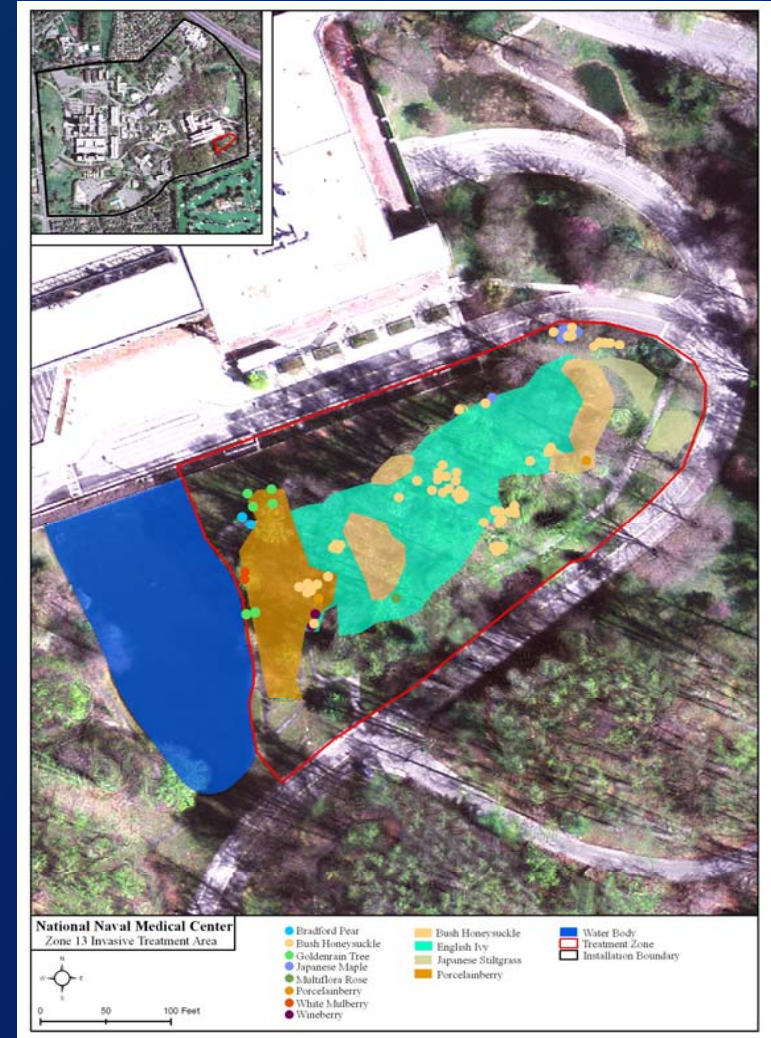
Summary Data for an Installation



Common Name	Scientific Name	Count	Acres
Trees			
Bradford Pear	<i>Pyrus calleryana</i>	10	-
Chinese Elm	<i>Ulmus parvifolia</i>	2	-
Goldenrain Tree	<i>Koelreuteria paniculata</i>	12	-
White Mulberry	<i>Morus alba</i>	275	-
Tree of Heaven	<i>Ailanthus altissima</i>	23	-
Mimosa	<i>Albizia julibrissin</i>	38	2
Princess Tree	<i>Paulownia tomentosa</i>	22	-
Shrubs/Subshrubs			
Autumn Olive	<i>Elaeagnus umbellata</i>	12	-
Barberry	<i>Berberis spp.</i>	55	0.7
Bush Honeysuckle	<i>Lonicera maackii</i>	52	2.3
Japanese Knotweed	<i>Polygonum cuspidatum</i>	5	-
Multiflora Rose	<i>Rosa multiflora</i>	2	-
Privet	<i>Ligustrum spp.</i>	24	-
Wineberry	<i>Rubus phoenicolasius</i>	68	0.5
Vines			
English Ivy	<i>Hedera helix</i>	63	1.2
Mile-a-minute	<i>Polygonum perfoliatum</i>	2	2.8
Oriental Bittersweet	<i>Celastrus orbiculatus</i>	4	0.1
Porcelainberry	<i>Ampelopsis brevipedunculata</i>	35	2.9
Forbs/Graminoids			
Common Reed	<i>Phragmites australis</i>	-	0.3
Garlic Mustard	<i>Alliaria petiolata</i>	-	0.2
Total		720	13.5

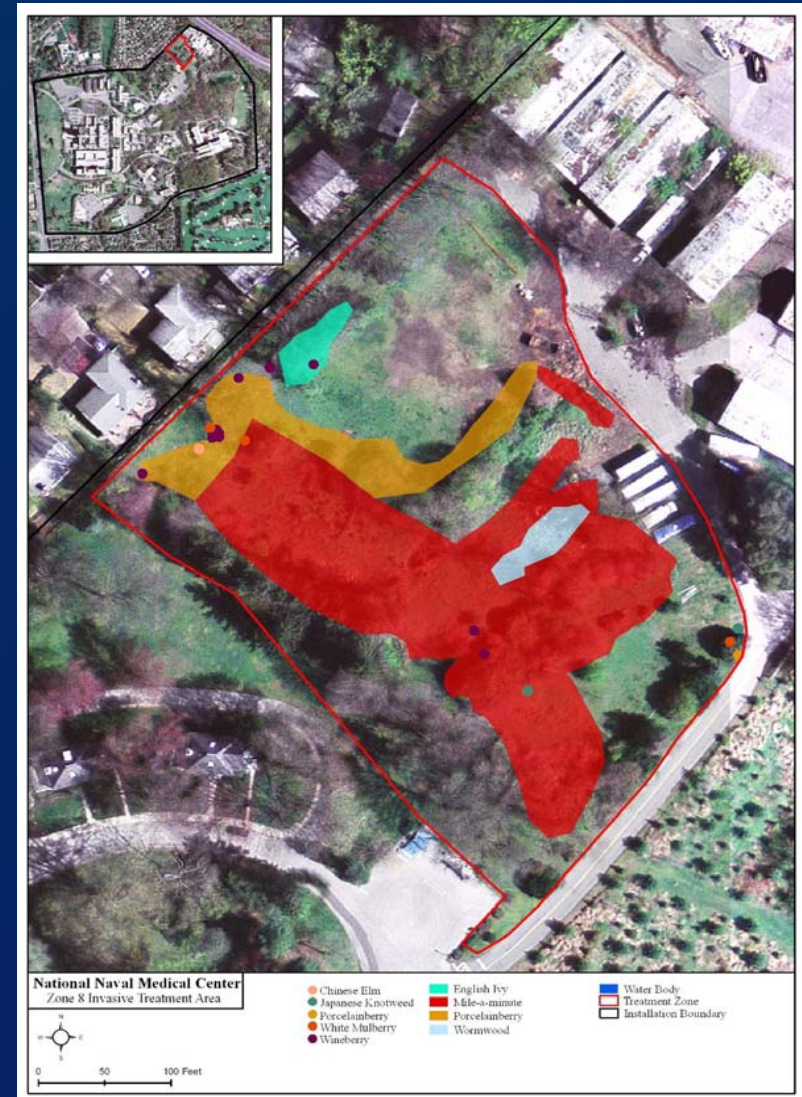
Summary Data per Treatment Site

Common Name	Count	Acres	Cover Class	Recommended Treatment
Bradford Pear	2	-		Apply herbicide solution as cut-stump treatment in fall
Bush Honeysuckle	55	0.12	5	Apply herbicide solution as cut-stump treatment in fall
English Ivy	-	0.58	4	Cut vines from trees and around shrubs; apply herbicide solution as a foliar spray in fall
Goldenrain Tree	6	-	-	Apply herbicide solution as cut-stump treatment in fall
Japanese Maple	6	-	-	Apply herbicide solution as cut-stump treatment in fall
Japanese Stiltgrass	-	0.04	5	Apply imazapyr in March and a systemic herbicide such as glyphosate in fall
Multiflora Rose	1	-	-	Apply herbicide solution as cut-stump treatment in fall
Porcelainberry	2	0.16	3	Hand pull small infestations, bag and remove debris; apply triclopyr solution to foliage or cut plants in fall
White Mulberry	2	-	-	Apply herbicide solution as cut-stump treatment in fall
Wineberry	2	-	-	Apply herbicide solution as foliar application in late summer
Total	76	0.90		



Summary Data per Priority Species

Common Name	Count	Acres	Cover Class	Recommended Treatment
Mile-a-minute	-	1.11	5	Mow repeatedly throughout growing season; apply herbicide solution as foliar spray in fall
Porcelainberry	1	0.22	4	Hand pull small infestations, bag and remove debris; apply triclopyr solution to foliage or cut plants in fall
Total	1	1.23		



Tips for Expediting GPS Mapping

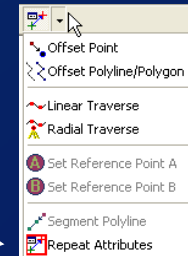


- Set up the project with roads, project boundaries, transects, and other information that will speed field work

- Adopt a broad brush approach



- Use the “Freehand Polygon” when appropriate



- Use the “Repeat Attributes” setting on the GPS

- Use office time for editing and filling out repetitive data





The End

