

North Carolina Sandhills Weed Management Area

Tracy Rush – Program Coordinator



Weed Management Area

- Partnership of federal, state and local government agencies; conservation organizations; individuals and other interested groups that cooperatively manage invasive plants in a defined area.

Advantages of WMA

- Management can occur across jurisdictional boundaries.
- Costs and management burdens are reduced for each individual landowner.
- Share data and resources.
- More access to various funding sources.

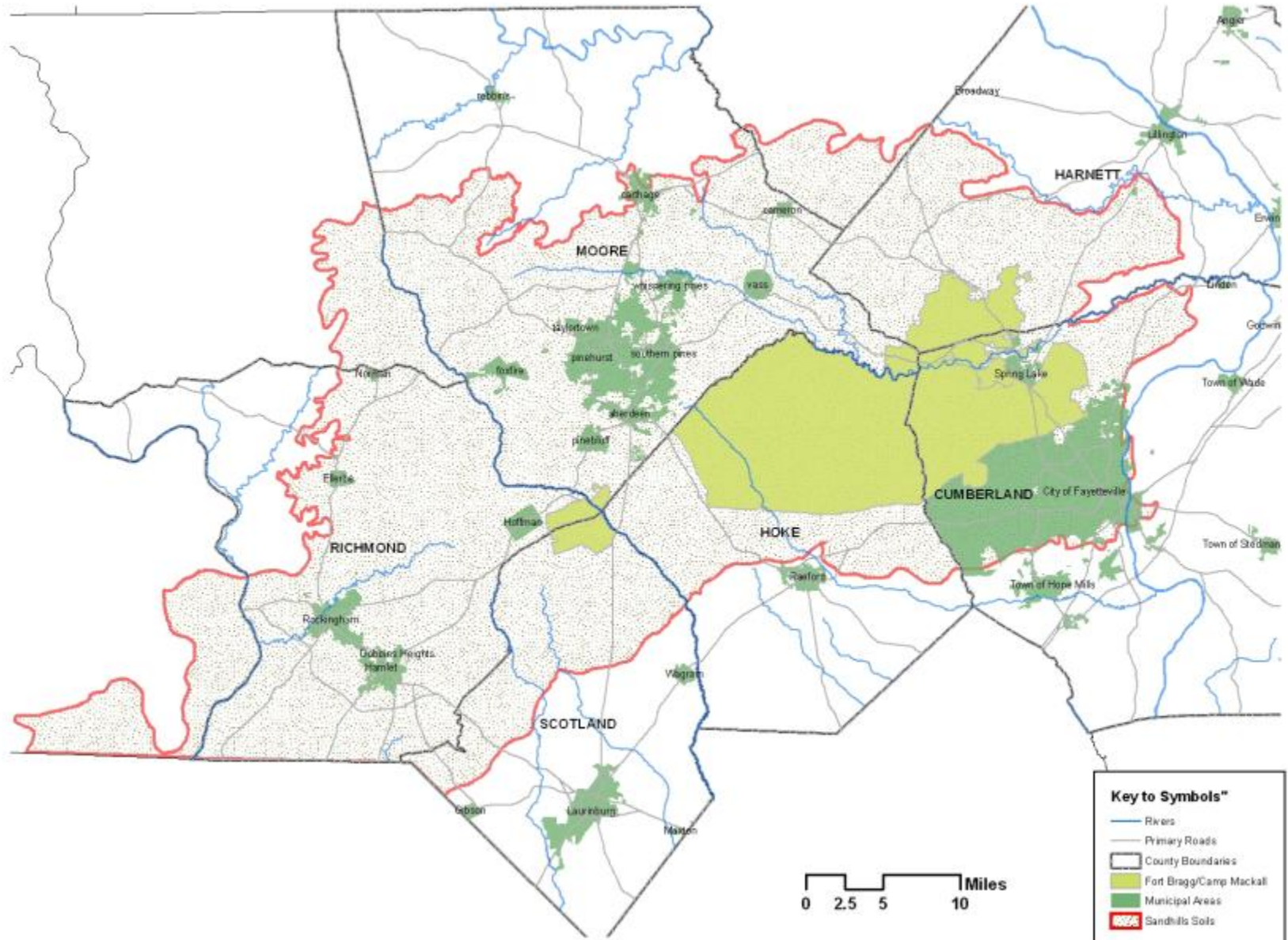
Establishment of the Sandhills Weed Management Area

- An invasive plant survey of military reservations in the Sandhills indicated the occurrence of at least 51 invasive plants.
- The military reservations initiated a large-scale invasive plant management program to prevent these 51 species from damaging valuable natural resources and training lands.
- Supporting a WMA on surrounding lands would protect the significant investments these installations have made in invasive plant management.

Establishment of the Sandhills Weed Management Area

- Based on this information and various federal regulations requiring federal agencies to control invasive species, the U.S. Army Corps of Engineers, Engineering Research and Development Center (ERDC-CERL) secured funding from the Department of Defense Legacy Program to establish a WMA in the Sandhills in 2006.

North Carolina Sandhills



Regional Stakeholders

- U.S. Department of Defense
- U.S. Fish and Wildlife Service
- U.S.D.A. Natural Resources Conservation Service
- N.C. Division of Parks and Recreation
- N.C. Wildlife Resources Commission
- The Nature Conservancy
- Sandhills Area Land Trust
- Sandhills Ecological Institute
- Private commercial foresters
- Private landowners/Interested parties

Initial Accomplishments 2006-2007

- Developed a Strategic Plan.
 - Outlines overall goals, objectives and actions.
- Launched a WMA website.
- Recruited additional partners/members.
- Hired a WMA Coordinator (2007).
- Implemented early detection/rapid response (EDRR) control efforts at 5 sites.

2008

- No funding.....





2009 Accomplishments

Rush Childs – EDRR Technician

Simeon Henderson – EDRR Technician

Survey

- Through the partners we were able to gain immediate access to a large number of properties.
- Surveyed 32+ properties for a total of 14,708 acres:
 - State Parks
 - TNC Preserves
 - Sandhills Area Land Trust parcels
 - Sandhills Game Lands parcels
 - Private Conservation Land

Notes on Surveys:

- Surveys focused on “conservation lands”.
- Properties were not 100% surveyed. Surveys focused on invasion corridors such as:

- Roads
- Railroads
- Utility Right-of-ways
- Old Homesites
- Old Fields
- Disturbed Areas
- Property Boundaries



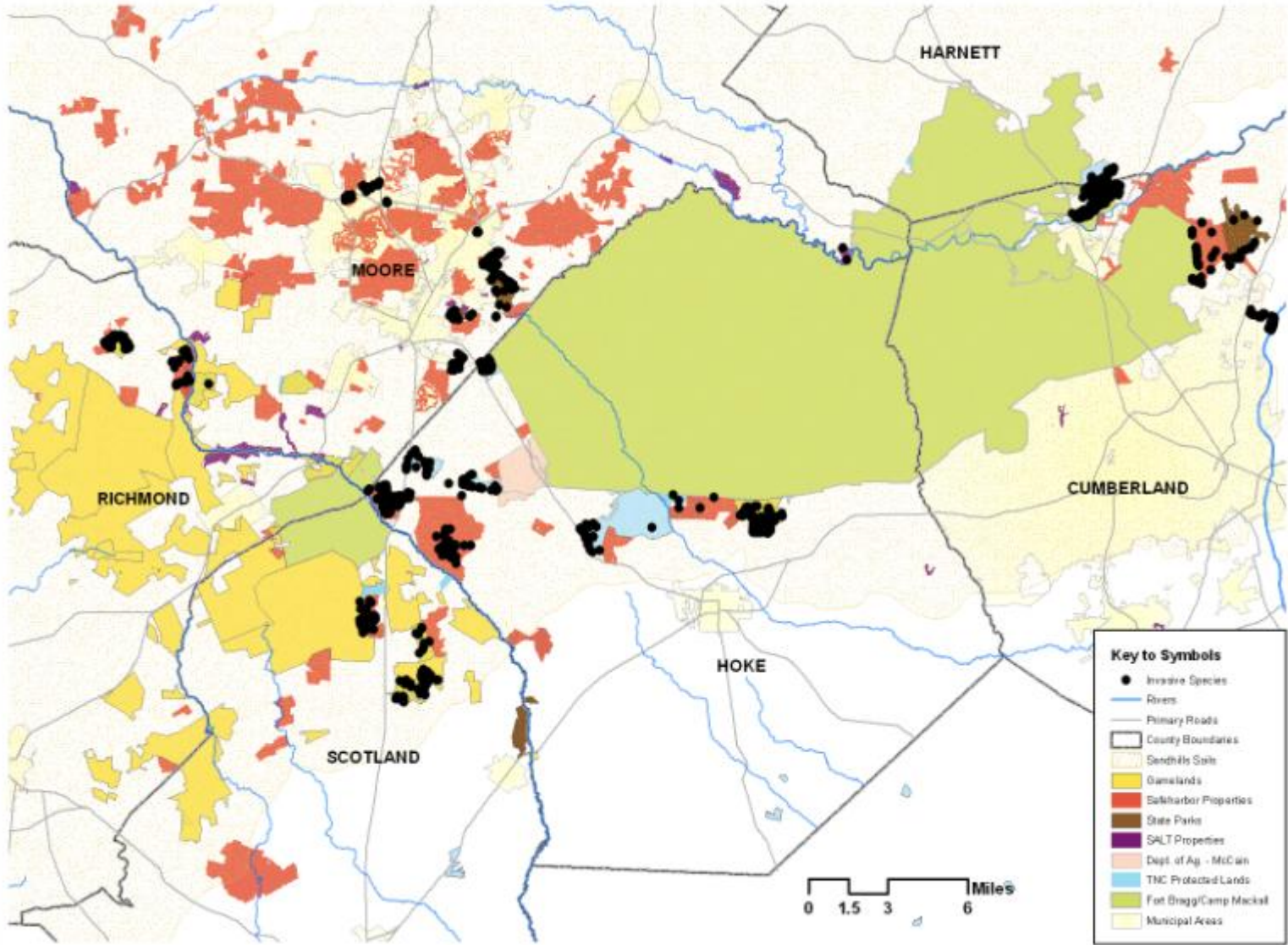
Mapping

- Mapped over 1,600 occurrences of 35 different invasive plants on these properties.
 - Occurrences varying in size from a single plant to acre-size infestations.
- Used handheld Garmin GPS units.
- A data sheet was filled out for each occurrence.
 - Simple datasheet with check boxes.

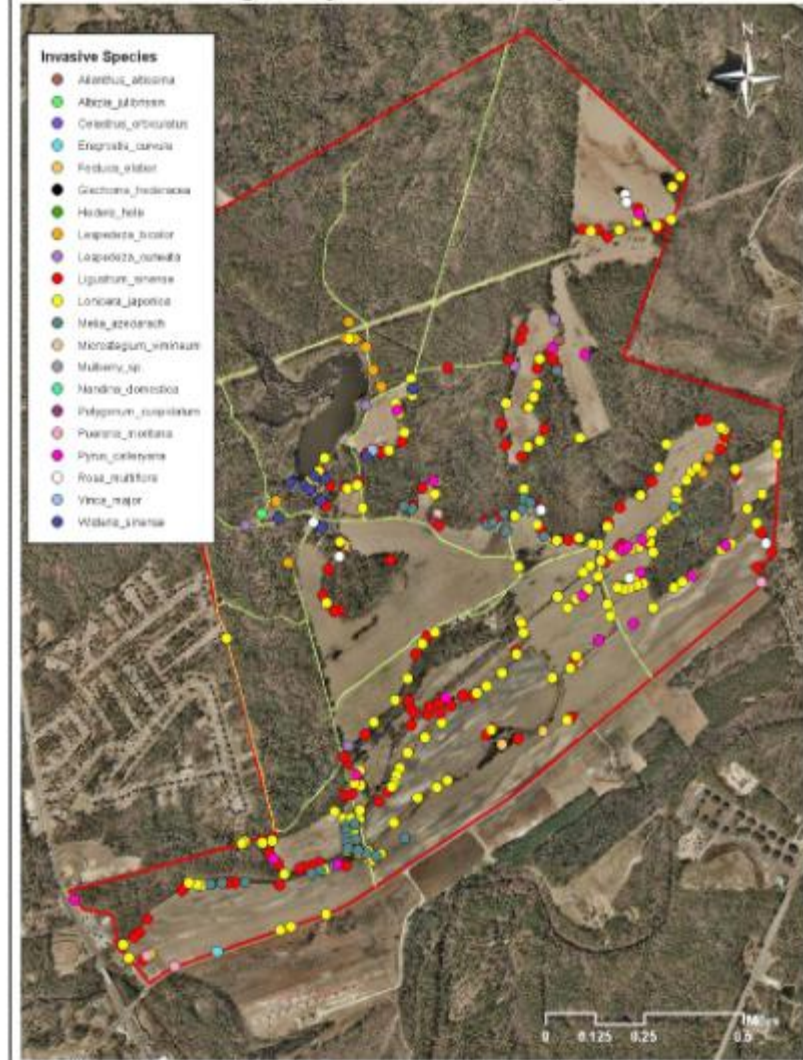
2009 Breakdown

- 52% of the occurrences were Chinese Privet and Japanese Honeysuckle.
- 20% of the occurrences were “wildlife-related” (planted for food or cover):
 - Chinese Lespedeza = 6.6 % (full extent not mapped)
 - Shrubby Lespedeza = 4.7%
 - Multiflora Rose = 4.7%
 - Weeping Lovegrass = 4.3%
- Remaining 28% of occurrences were considered early detection/rapid response (EDRR) species, with the most common being:
 - Chinaberry = 7.6%
 - Wisteria = 3.7%
 - Mimosa = 3.3%

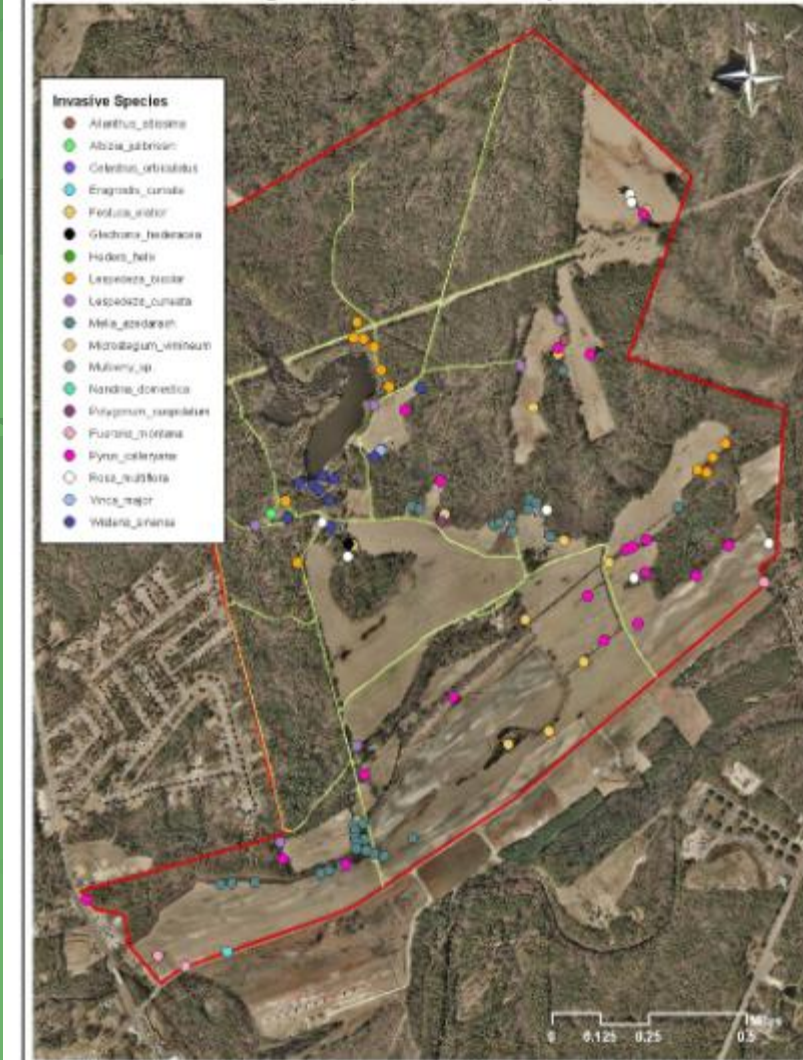
NC Sandhills Conservation Area - Invasive Plant Locations



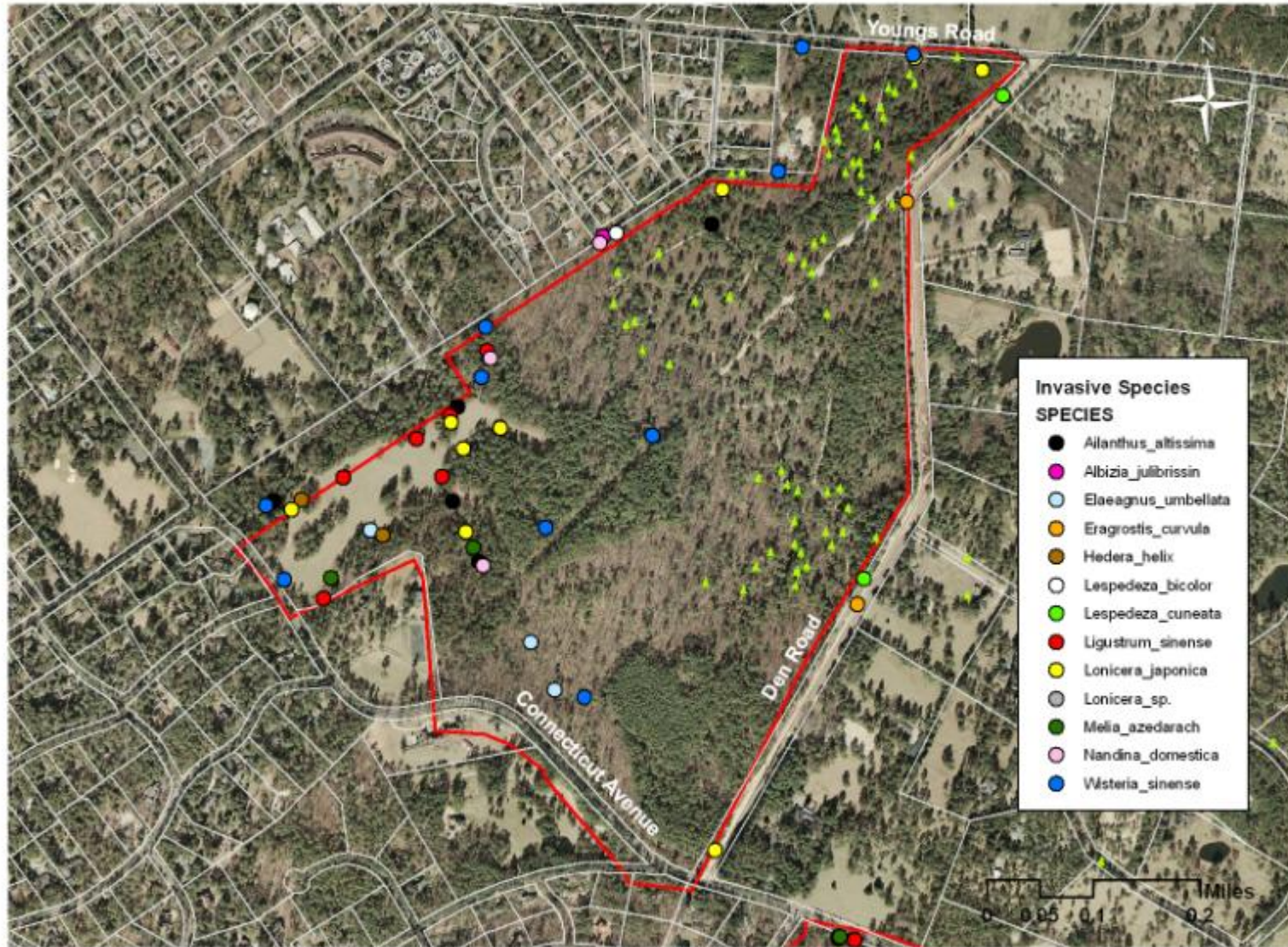
Long Valley Farm Invasive Species



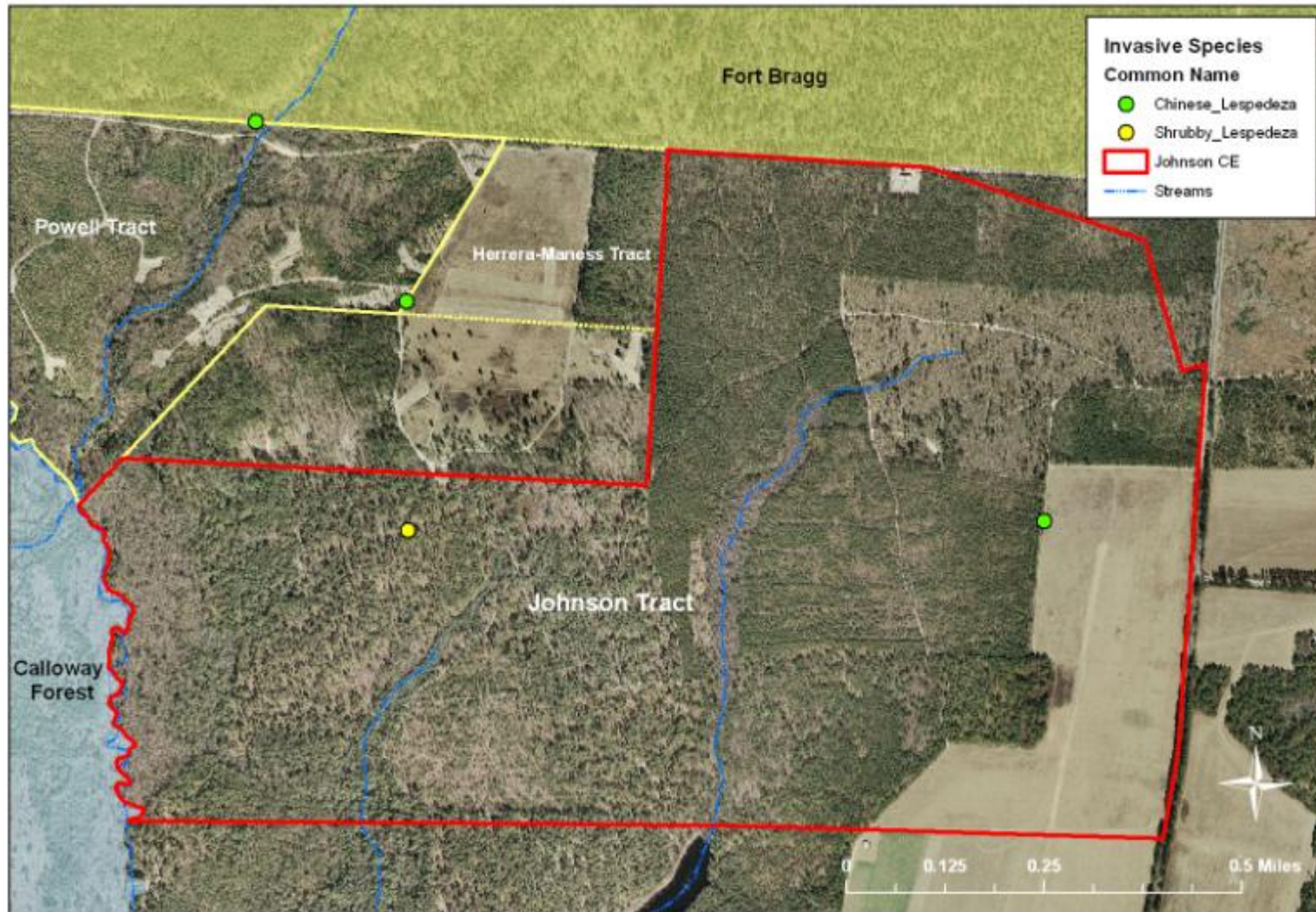
Long Valley Farm EDRR Species



Weymouth Woods Nature Preserve - Boyd Tract Invasives



Johnson Tract Invasives



Parsons Tract - Michaux's Sumac Location



Over 570 plants!



**Japanese
Honeysuckle**

Invasives Treated

- In 2009 we treated approximately 350 occurrences (22% of all occurrences mapped) and some occurrences were treated several times (50 occurrences were treated twice).
 - 60% of all occurrences treated were EDRR species.
 - Chinese privet and Japanese honeysuckle were treated if the occurrences were isolated or if the occurrences were immediately adjacent to EDRR species.

Treatment Methods

- Herbaceous species:

- Foliar spray with 2%+ glyphosate solution.

- Vines:

- For large vines (>0.5 inch dbh) we used the “cut and spray” method on the first treatment. We cut the vine close to the ground and applied a concentrated glyphosate solution to the cut surface.
- After 1 month or so, we treated any remaining foliage with a 2%+ glyphosate foliar spray.

Treatment Methods

■ Shrubs:

- For most shrubs we used the “cut and spray” method. But in a few cases the shrubs (multiflora rose) were too dense to get to the stems so then we used a 2%+ glyphosate foliar solution.

■ Trees:

- Saplings and small trees (<3 inch or 4 inch dbh) were treated using the “cut and spray” method.
- Large trees were treated with the “hack and squirt” method whereby a chainsaw (most efficient) was used to “girdle” the trunk near the ground. Then we squirted a concentrated glyphosate solution into the cuts.

Parsons Tract - Before NC Wildlife Resources Commission



Parsons Tract - After NC Wildlife Resources Commission



After 3 Months....sprouts!!



Data Management

Microsoft Excel - survey_master_back_up 10-27-09.xls

File Edit View Insert Format Tools Data Window Help

Type a question for help

100% Arial 10

Reply with Changes... End Review

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	
pt_id	Species	Common Name	Date	Property Name	County	Ownership	NAD83	Est_size	Waypoint	Single_plant	Scattered_plants	Dense_monoculture	Scattered_dense	Invasion_Threat	Control_tec	
643	642	Lonicera japonica	Japanese Honeysuckle	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	small	loja140	0	1	0	0	Contain_Control	foliar_spray
644	643	Lonicera japonica	Japanese Honeysuckle	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	medium	loja139	0	1	0	0	Contain_Control	foliar_spray
645	644	Ligustrum sinense	Chinese Privet	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	medium	lisi141	0	0	0	1	Contain_Control	foliar_spray
646	645	Ligustrum sinense	Chinese Privet	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	medium	lisi133	0	1	0	0	Contain_Control	foliar_spray
647	646	Ligustrum sinense	Chinese Privet	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	medium	lisi134	0	1	0	0	Contain_Control	foliar_spray
648	647	Lonicera japonica	Japanese Honeysuckle	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	small	loja154	0	0	0	0	Contain_Control	foliar_spray
649	648	Pyrus calleryana	Bradford Pear	6/8/2009	Long_Valley_Farm	Cumberland	TNC	Y	small	Pear20	1	0	0	0	ED_RR	cut_spray
650	649	Lеспедеза cuneata	Chinese Lespedeza	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lecu1Q	0	0	1	0	Contain_Control	foliar_spray
651	650	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi1Q	0	0	0	1	Contain_Control	foliar_spray
652	651	Lonicera japonica	Japanese Honeysuckle	5/27/2009	Quewoffie	Hoke	TNC	Y	small	loja1Q	0	0	1	0	Contain_Control	foliar_spray
653	652	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi3Q	0	1	0	0	ED_RR	foliar_spray
654	653	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi4Q	0	1	0	0	ED_RR	foliar_spray
655	654	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi5Q	0	1	0	0	ED_RR	foliar_spray
656	655	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi6Q	1	0	0	0	ED_RR	cut_spray
657	656	Lеспедеза cuneata	Chinese Lespedeza	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lecu02Q	0	0	1	0	Contain_Control	foliar_spray
658	657	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi7Q	0	0	1	0	ED_RR	foliar_spray
659	658	Ligustrum sinense	Chinese Privet	5/27/2009	Quewoffie	Hoke	TNC	Y	small	lisi2Q	0	0	0	0	ED_RR	foliar_spray
660	659	Lеспедеза bicolor	Shrubby Lespedeza	6/17/2009	Bowling_Crowley	Hoke	TNC	Y	small	lebi01	0	1	0	0	ED_RR	foliar_spray
661	660	Ligustrum sinense	Chinese Privet	6/17/2009	Bowling_Crowley	Hoke	TNC	Y	small	lisiX	0	0	0	0	ED_RR	foliar_spray
662	661	Melia azedarach	Chinaberry	6/17/2009	Bowling_Crowley	Hoke	TNC	Y	medium	meaz03	0	1	0	0	ED_RR	hack_treat
663	662	Pyrus calleryana	Bradford Pear	6/17/2009	Bowling_Crowley	Hoke	TNC	Y	medium	pear	0	1	0	0	ED_RR	hack_treat
664	663	Pueraria montana	Kudzu	6/23/2009	Bowling_Crowley	Hoke	TNC	Y	medium	pumo04	0	0	0	0	ED_RR	foliar_spray
665	664	Albizia julibrissin	Mimosa	6/25/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	alju04cc	0	1	0	0	ED_RR	foliar_spray
666	665	Melia azedarach	Chinaberry	6/25/2009	Unknown	Cumberland	Private	Y	small	meaz04cc	0	1	0	0	Monitor	cut_spray
667	666	Albizia julibrissin	Mimosa	6/25/2009	Fort Bragg	Cumberland	USA	Y	small	alju03cc	0	1	0	0	ED_RR	cut_spray
668	667	Ligustrum sinense	Chinese Privet	6/25/2009	Fort Bragg	Cumberland	USA	Y	small	lisi01cc	0	0	0	0	ED_RR	foliar_spray
669	668	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Fort Bragg	Cumberland	USA	Y	small	lebi06cc	1	0	0	0	ED_RR	foliar_spray
670	669	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Fort Bragg	Cumberland	USA	Y	small	lebi07cc	0	1	0	0	ED_RR	foliar_spray
671	670	Rosa multiflora	Multiflora Rose	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	rom01cc	1	0	0	0	ED_RR	foliar_spray
672	671	Microstegium vimineum	Japanese Stiltgrass	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	miv01cc	0	1	0	0	ED_RR	foliar_spray
673	672	Melia azedarach	Chinaberry	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	meaz01cc	0	1	0	0	ED_RR	cut_spray
674	673	Murdannia keisak	Marsh Dewflower	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	muko01cc	0	0	1	0	Contain_Control	foliar_spray
675	674	Lеспедеза bicolor	Shrubby Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	medium	lebi04cc	0	1	0	0	ED_RR	foliar_spray
676	675	Lеспедеза bicolor	Shrubby Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	lebi03cc	0	1	0	0	ED_RR	foliar_spray
677	676	Lеспедеза bicolor	Shrubby Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	lebi02cc	1	0	0	0	ED_RR	foliar_spray
678	677	Lеспедеза cuneata	Chinese Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	medium	lecu02cc	0	1	0	0	Contain_Control	foliar_spray
679	678	Lеспедеза cuneata	Chinese Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	large	lecu01cc	0	0	1	0	Contain_Control	foliar_spray
680	679	Lеспедеза bicolor	Shrubby Lespedeza	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	medium	lebi01cc	0	1	0	0	ED_RR	foliar_spray
681	680	Albizia julibrissin	Mimosa	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	alju02cc	0	1	0	0	ED_RR	cut_spray
682	681	Albizia julibrissin	Mimosa	6/22/2009	Carvers_Creek	Cumberland	NC State Parks	Y	medium	alju01cc	0	1	0	0	ED_RR	hack_treat
683	682	Eragrostis curvula	Weeping Lovegrass	6/25/2009	Fort Bragg	Cumberland	USA	Y	small	ercu01cc	0	0	0	0	ED_RR	foliar_spray
684	683	Lеспедеза cuneata	Chinese Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	huge	lecu06cc	0	0	0	1	Contain_Control	foliar_spray
685	684	Lеспедеза cuneata	Chinese Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	huge	lecu04cc	0	1	0	0	Contain_Control	foliar_spray
686	685	Lеспедеза cuneata	Chinese Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	huge	lecu05cc	0	1	0	0	Contain_Control	foliar_spray
687	686	Lagerstroemia indica	Crape Myrtle	6/25/2009	Clarkll	Cumberland	Private	Y	small	eua01cc	0	1	0	0	ED_RR	foliar_spray
688	687	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	huge	lebi06cc	0	1	0	0	ED_RR	foliar_spray
689	688	Lеспедеза cuneata	Chinese Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	large	lecu03cc	0	0	1	0	Contain_Control	foliar_spray
690	689	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	huge	lebi05cc	0	1	0	0	Contain_Control	foliar_spray
691	690	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Unknown	Cumberland	Private	Y	medium	lecu08cc	0	1	0	0	Monitor	foliar_spray
692	691	Eragrostis curvula	Weeping Lovegrass	6/25/2009	Carvers_Creek	Cumberland	NC State Parks	Y	small	ercu03cc	0	1	0	0	ED_RR	foliar_spray
693	692	Eragrostis curvula	Weeping Lovegrass	6/25/2009	Carvers_Creek	Cumberland	NC State Parks	Y	medium	ercu02cc	0	1	0	0	Contain_Control	foliar_spray
694	693	Lеспедеза cuneata	Chinese Lespedeza	6/25/2009	Unknown	Cumberland	Private	Y	medium	lecu07cc	0	1	0	0	Contain_Control	foliar_spray
695	694	Lеспедеза bicolor	Shrubby Lespedeza	6/25/2009	Clarkll	Cumberland	Private	Y	small	lebi09cc	0	1	0	0	ED_RR	foliar_spray
696	695	Pueraria montana	Kudzu	7/6/2009	Haskell	Scotland	Private	Y	large	pumo03	0	0	0	0	ED_RR	foliar_spray
697	696	Rosa multiflora	Multiflora Rose	7/6/2009	Haskell	Scotland	Private	Y	medium	romu03	0	1	0	0	ED_RR	foliar_spray
698	697	Pueraria montana	Kudzu	7/6/2009	Haskell	Scotland	Private	Y	small	pumo02	1	0	0	0	ED_RR	foliar_spray

Sheet1 / Sheet2 / Sheet3 /

Ready NUM

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GIS Data

Troutman_EDRR.mxd - ArcMap - ArcView

File Edit View Bookmarks Insert Selection Tools Window Help

1:10,382

Editor

Layers

- Treated Invasives
- Invasive Species
 - Common Name
 - Autumn_Olive
 - Chinaberry
 - Chinese_Lespedeza
 - Chinese_Privet
 - Chinese_Wisteria
 - Ground_Ivy
 - Heavenly_Bamboo
 - Japanese_Honeysuckle
 - Japanese_Knotweed
 - Japanese_Stiltgrass
 - Johnsongrass
 - Kudzu
 - Mash_Dewflower
 - Mimosa
 - Multiflora_Rose
 - Shrubby_Lespedeza
 - Sicklepod
 - Tall_Fescue
 - Tree-of-Heaven
 - Weeping_Lovegrass
- Burn Unit
- troutman_stands
- Troutman
 - Troutman Farm
- Hoke_Troutman_5.07
- nheosand0504_utm
- RCW Trees
- Primary Roads
- Municipal Areas
- County Lines
- Railroad

Identify

Identify Invasive Species

Location: [641,926,366 3,670,311.379 Meters]

Field	Value
FID	916
Shape	Point
TYPE	WAYPOINT
IDENT	ajut05
LAT	35.027493
COMMENT	23-JUL-09 10:16:13AM
pt_id	1093
LONG	-79.448027
OID	1097
PT_ID_1	1093
SPECIES	Autumn_olive
COMMON_NAME	Mimosa
DATE	7/23/2009
PROPERTY_N	Troutman
COUNTY	Hoke
OWNERSHIP	Private
NAD83	Y
EST_SIZE	large
WAYPOINT	ajut05
SINGLE_PLA	0
SCATTERED_1	0
DESER_PATCH	0
SCATTERED1	0
INVASION_T	ED_RR
CONTROL_TE	out_spray
LOCATION_N	
EDGE_UPLAN	0
EDGE_FIELD	0
EDGE_LAKE	0
EDGE_ROAD	0
OPEN_FIELD	0
OLD_FIELD	0
ROADWAY	0
FOREST_P99	0
FOREST_M99	0
DUNE	0
BEACH	0
PARK	0
ROCKY	Y
WETLAND	0
STREAMBANK	0
YARD_GARDE	0
AG_FIELD	0
OLD_JONES1	1
DITCH	
MANAGEMENT	MSR
FIRE_SUPPR	1
FIRE_MANAG	0
RECENT_BUR	0
PUTURE_BUR	0
IMPACTED_R	longleaf restoration
TREAT1_DAT	04/2009
TREAT1_MET	out and spray
HERBICIDE1	41% glyphosate

Identified 1 feature

Troutman Farms - Treated Invasives

Invasive Species
Common Name

- Autumn_Olive
- Chinaberry
- Chinese_Lespedeza
- Chinese_Privet
- Chinese_Wisteria
- Ground_Ivy
- Heavenly_Bamboo
- Japanese_Honeysuckle
- Japanese_Knotweed
- Japanese_Stiltgrass
- Johnsongrass
- Kudzu
- Mash_Dewflower
- Mimosa
- Multiflora_Rose
- Shrubby_Lespedeza
- Sicklepod
- Tall_Fescue
- Tree-of-Heaven
- Weeping_Lovegrass

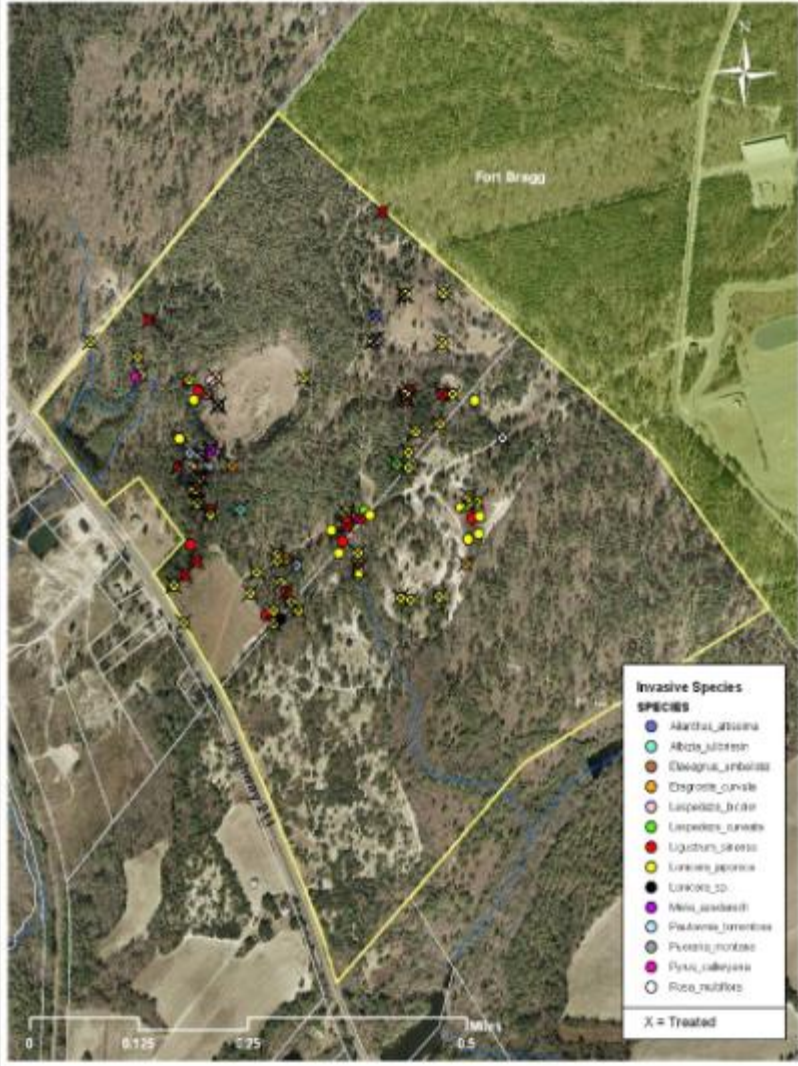
0.125 0.25 0.5 Miles

641920.89 3876307.82 Meters 5.29 5.83 Inches

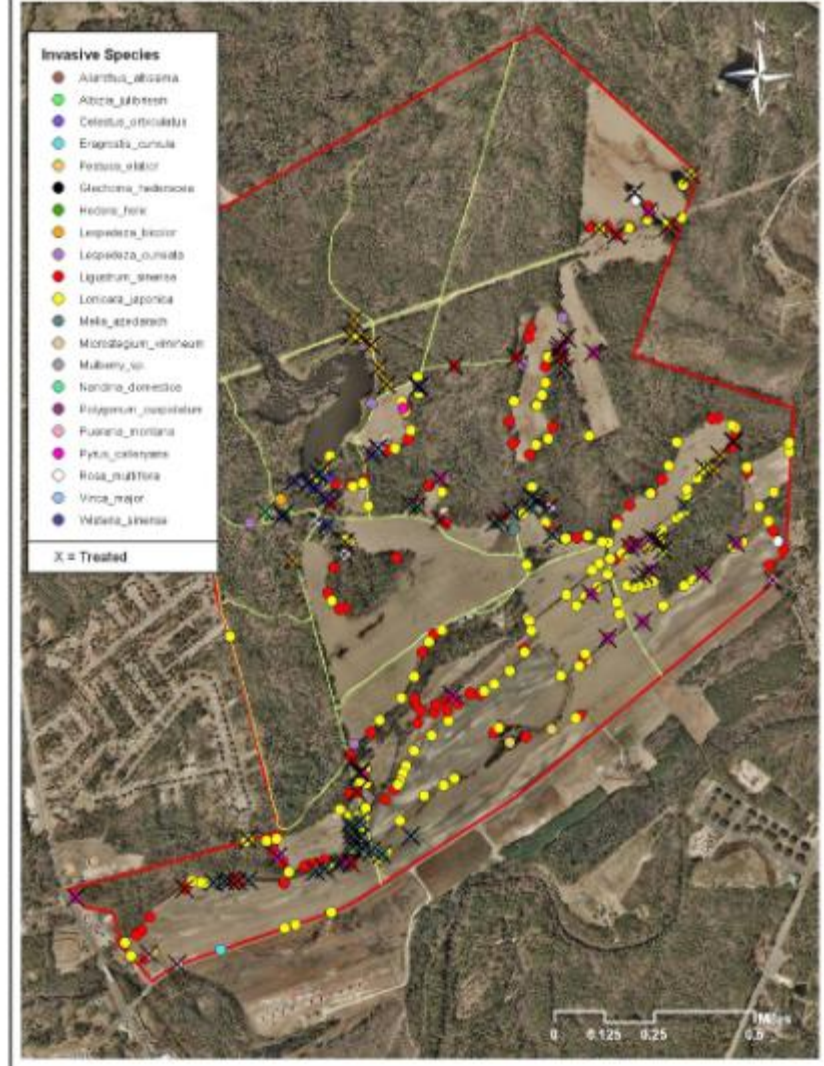
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9:01 AM

Crowley-Bowling Preserve Invasive Species



Long Valley Farm Invasive Species



Education and Outreach

- Focus on prevention and awareness:
 - Brochure
 - General information with list of invasives known to occur in the Sandhills.
 - Handouts
 - Provide lists of “do not plant” species as well as lists of native alternative species.
 - Website
 - Information specific to the Sandhills.
 - Speaking Engagements

Helpful Hints

- Get out in the field! See what's going on!
- Try to do work on a variety of ownerships in order to engage all members of the WMA.
- Purchase a large water tank with a spigot to take to treatment sites.
- Take clippers, small handsaw and small spray bottle of herbicide with you when you survey so you can treat single plants immediately.

Issues

- Future and/or continuous funding:
 - Able to pull together \$31,000 in In-Kind contributions from partners for 2010.
 - Currently do not have any cash for 2010.....
- Interpretation of the data:
 - Determining EDRR species.
- Nursery and Landscaping Industries:
 - Continued sale of invasive plants.
 - Many local nurseries do not carry native alternatives.

Future Activities

- Talk to local nurseries about invasives and native alternatives.
- Engage county and local governments in invasive plant management.
- Continue surveys of conservation lands (we've only surveyed 14,000 acres out of 157,000 acres).
- Once survey and initial treatment of conservation lands are complete, we plan to survey adjacent lands in order to establish "weed free" buffers zones.

The background of the slide is a dark green color with a pattern of lighter green, stylized leaves and stems. The leaves are of various shapes and sizes, some overlapping, creating a dense, naturalistic feel.

Thank You!

Tracy Rush

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www.ncswma.org