



*MDOT Invasive Species Control on  
Roadsides and Rights-of-Way*

**Tim Jones**

**Michigan Department of Transportation**

**Operations Field Services**

# About MDOT

- I, US, and M Routes
- 10,000 + miles of roads
- Divided into seven Regions and 26 TSCs
- Roadside Operations (OFS) and Environmental Section
- Region Resource Specialists
  - one per Region
  - provide specialized expertise in vegetation management for our Regions

# MDOT Regions and Transportation Service Centers



## COUNTIES

REGION	REGION
1. ALCONA.....NOR	43. LAKE.....NOR
2. ALGER.....SUP	44. LAPEER.....BAY
3. ALLEGAN.....SWR	45. LEELENAU.....NOR
4. ALPENA.....NOR	46. LEWIS.....UNIV
5. ANTRIM.....NOR	47. LIVINGSTON.....UNIV
6. ARENAC.....BAY	48. LUCE.....SUP
7. BARAGA.....SUP	49. MACKINAC.....SUP
8. BARRY.....SWR	50. MACOMB.....METRO
9. BAY.....BAY	51. MANISTEE.....NOR
10. BENZIE.....NOR	52. MARQUETTE.....SUP
11. BERRIEN.....SWR	53. MASON.....NOR
12. BRANCH.....SWR	54. MECOSTA.....GR
13. CALHOUN.....SWR	55. MENOMINEE.....SUP
14. CASS.....SWR	56. MIDLAND.....BAY
15. CHARLEVOIX.....NOR	57. MISSALKEE.....NOR
16. CHEBOYGAN.....NOR	58. MONROE.....UNIV
17. CHIPPEWA.....SUP	59. MONTCALM.....GR
18. CLARE.....BAY	60. MONTMORENCY.....NOR
19. CLINTON.....UNIV	61. MUSKOGON.....GR
20. CRAWFORD.....NOR	62. NEWAYGO.....GR
21. DELTA.....SUP	63. OAKLAND.....METRO
22. DICKINSON.....SUP	64. OCEANA.....GR
23. EATON.....UNIV	65. OGDEN.....NOR
24. EMMET.....NOR	66. ONTONAGON.....SUP
25. GENESEE.....BAY	67. OCEOLA.....NOR
26. GLADWIN.....BAY	68. OSCODA.....NOR
27. GOGEBIC.....SUP	69. OTSEGO.....NOR
28. GD. TRAVERSE.....NOR	70. OTTAWA.....GR
29. GRATIOT.....BAY	71. PRESQUE ISLE.....NOR
30. HILLSDALE.....UNIV	72. ROSCOMMON.....NOR
31. HOUGHTON.....SUP	73. SAGINAW.....BAY
32. HURON.....BAY	74. SANILAC.....BAY
33. INGHAM.....UNIV	75. SCHOOLCRAFT.....SUP
34. IDAIA.....GR	76. SHIAWASSEE.....UNIV
35. IOSCO.....NOR	77. ST. CLAIR.....METRO
36. IRON.....SUP	78. ST. JOSEPH.....SWR
37. ISABELLA.....BAY	79. TUSCOLA.....BAY
38. JACKSON.....UNIV	80. VAN BUREN.....SWR
39. KALAMAZOO.....SWR	81. WASHTEENAW.....UNIV
40. KALKASKA.....NOR	82. WAYNE.....METRO
41. KENT.....GR	83. WEXFORD.....NOR
42. KEWEENAW.....SUP	



■ Superior    ■ Southwest    ■ Metro  
■ North    ■ University     Region Office    ★  
■ Grand    ■ Bay    ■ TSC    ▲  
 (variations in color indicate TSC boundaries)

# How MDOT Works

- Planning
- Design
- Construction
- Operations/Maintenance
  - MDOT personnel
  - county road commissions under contract
  - private contractors

# Invasive Species Guide

Michigan  
Department of Transportation

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## Invasive Species Guide

July 30, 2014

Compiled by MDOT's  
Operations Field Services  
Environmental Section  
Region Resource Specialists

This reference guide is designed to provide MDOT's:

Invasive plant species policy  
Species of concern  
Plant identification information  
Management and control techniques  
Compliance with invasive species laws and regulations  
Departmental contact information

### Table of Contents

Invasive Plant Species Policy	1
Working within MDOT ROW	1
Background Information	2
ROW Treatment Challenges	2
Current Management Program	3
MDOT's Invasive Plant Species	
Autumn olive	5
Black swallow-wort	6
Buckthorn	7
Canada thistle	8
Garlic mustard	9
Giant hogweed	10
Giant ragweed	11
Knotweed	12
Kochia	13
Leafy spurge	14
Oriental bittersweet	15
Phragmites	16
Purple loosestrife	17
Reed canary grass	18
Spotted knapweed	19
White clover	20
Yellow clover	21
Glossary of Terms	22
Management and Control Techniques	23
Invasive Species Laws and Regulations	25
Contact Information for Invasive Concerns	26

# Control and Management Policy

- MDOT performs control/management of invasive plant species under the following conditions:
  - A species poses a safety concern to the traveling public, or operational/maintenance difficulties
  - We have a statutory or regulatory obligation to control the species
  - Requests for treatment by governmental entities for interagency cooperation (case by case basis, within the limits of available staff and funding)

# MDOT's Invasive Plant Species List

- Autumn olive
- Black swallow-wort
- Buckthorn
- Canada thistle
- Garlic mustard
- Giant hogweed
- Giant ragweed
- Japanese Knotweed
- Kochia
- Leafy spurge
- Oriental bittersweet
- Phragmites
- Purple loosestrife
- Reed canary grass
- Spotted knapweed
- White clover
- Yellow clover

# Species Information: Common Name, Species Name, Habitat, Distribution, Description, Reproduction, Problem for MDOT and Management Guidelines



**Common Name:**  
Purple loosestrife

**Scientific Name:**  
*Lythrum salicaria*

**Type:**  
Herbaceous perennial

**Habitat:**  
This species prefers disturbed and wet areas with heavier soils and full sun but it will survive in partial shade.

**Distribution:**  
Predominantly in the Lower Peninsula

**Description:** Purple loosestrife is an herbaceous perennial that grows 1.5 to 6 ft. tall. Leaves are simple, lance shaped and opposite or whorled. Stem is four-angled and hairy. Flowers are purple to light pink with five-seven petals and form a spike. It has a strong taproot that becomes woody with age. Blooms July to October.

**Reproduction:** This species reproduces by seed or vegetatively by re-sprouting from cut stems or roots.

**Problem for MDOT:** This persistent weed spreads vigorously under moist soil conditions and favors disturbance similar to MDOT ROW. Once established it crowds out native wetland plant species and will quickly dominate the surrounding vegetation in MDOT's wetland mitigation sites. It is listed as a Prohibited Plant Species under NREPA.

**Management Guidelines:** Successful control of this species can be implemented with the use of a leaf-eating beetle (*Galerucella californiensis*, *G. pusilla*).

**Common Name:**  
Reed canary grass

**Scientific Name:**  
*Phalaris arundinacea*

**Type:**  
Perennial Grass

**Habitat:**  
Found in marshes, ditches, wetlands, and the edges of streams, ponds and lakes

**Distribution:**  
Throughout Upper and Lower Peninsula.



**Description:** This perennial grass grows from 2.5 to 8 ft. tall in wet soils. It has wide, flat tapering blades that are rough on both sides and longitudinally striped. It has densely clustered single florets, green to purple in color changing to cream over time. Blooms May through mid-June.

**Reproduction:** Reed canary grass reproduces by seed and vegetatively through horizontal rhizomes.

**Problem for MDOT:** This Eurasian species out-competes most native wetland species and forms monocultures. This species impacts our wetland mitigation sites. Invasions are often prompted by disturbances such as ditch-digging or work within the edges of wetlands.

**Management Guidelines:** Herbicide spraying with a chemical approved for aquatic use.





# Control Methods



- Planning - Region scoping, maintenance staff ideas
- Design - Special Provisions for invasive species
- Construction - Plan notes, treat pre-construction
- Maintenance - Spray and Mowing programs



# Challenges

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- ROW issues
  - Linear nature of ROW
  - Different types/different approaches
    - fee
    - easement
    - permitted
- Funding/staffing
- Offsite presence of invasives

# MDOT's biggest Concerns

- Safety: Clear Vision, Recovery Zone,
- Operational: Drainage, covering infrastructure
- Environmental: T/E Sps, Water quality, SESC



# Clear Vision





DO NOT PASS



# Ditches



# Other Structures





# Equipment



- ¾ ton 4x4 pickup
- 300 gallon tank
- 5 hp Briggs w/pump
- Hand Sprayer
- 30' hose/reel
- Spill Kit
- Washing station/tank
- Lock box for chemicals





# Collector App

- ERSI ARCGIS
- MDOT uses it to map Overhead signs, culverts, pump stations, freeway lighting, etc
- Roadside Operations ask about using it to map invasive species.
- Within a two weeks the MDOT GIS team had an app for collecting invasive species locations.

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About | Content | Legend

**Legend**

-  BRUSH
-  GARLIC MUSTARD
-  GIANT HOGWEED
-  JAPANESE KNOTWEED
-  KOCHIA
-  LEAFY SPURGE
-  ORINETIAL BITTERSWEET
-  PHRAGMITES
-  WARM SEASON GRASSES

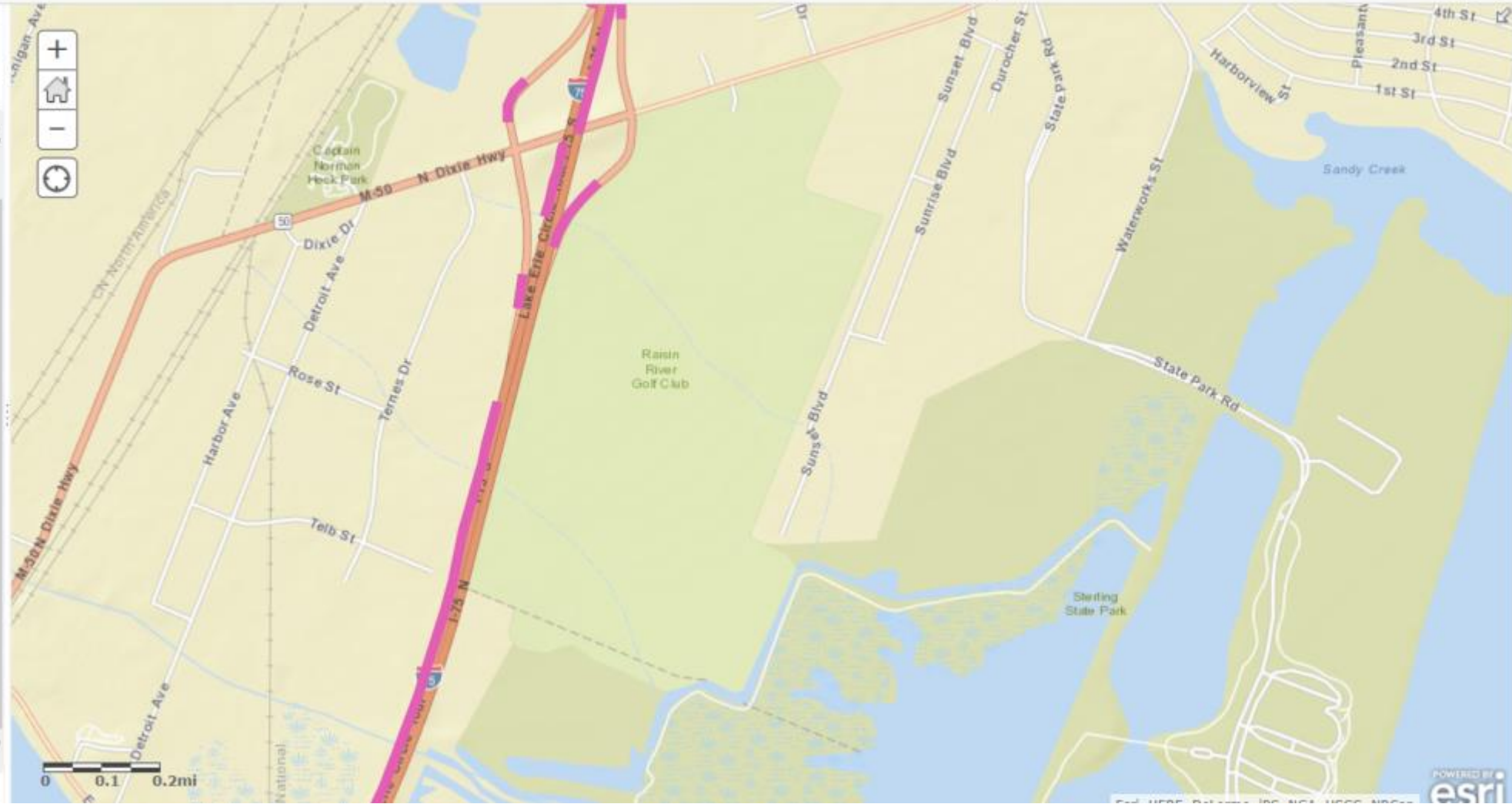
**Protected Areas**



**Sensitive Areas**



**Federal Land**



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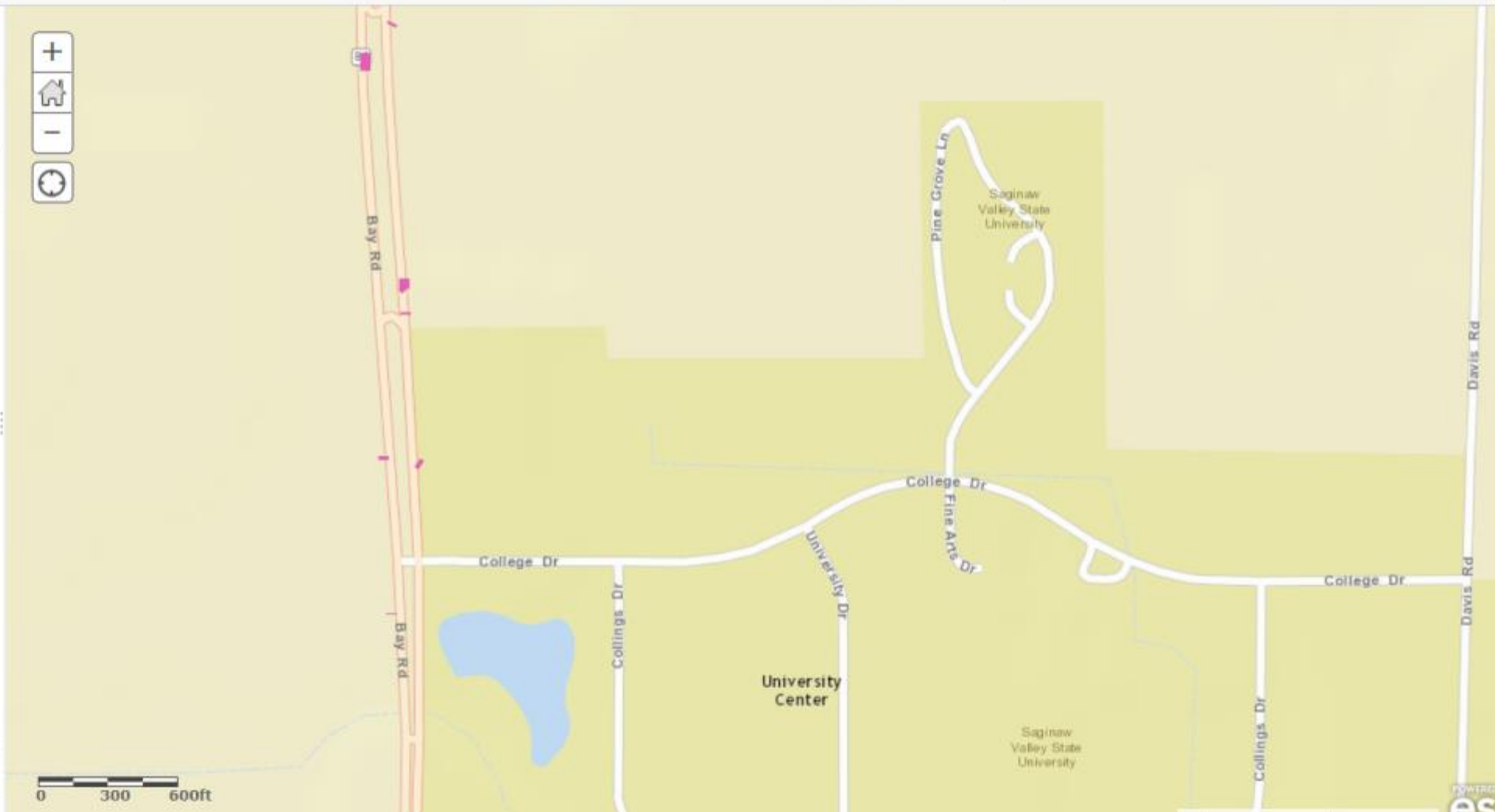
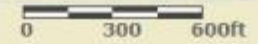
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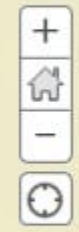
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- Protected Areas**
- Sensitive Areas**
- Federal Land**



**PHRAGMITES**

REGION	Bay
WEED PRESENT	PHRAGMITES
MAPPED USING	I-PAD
IN MOW LINE	NO
DEPTH OF STAND	10.00
CREATED BY	Candeyj
CREATED DATE	September 3, 2015
LAST EDITED BY	Candeyj
LAST EDITED DATE	September 3, 2015
SPRAYED DATE	

Edited by Candeyj on 9/3/15 at 9:51 AM

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#### INVASIVE\_SPECIES\_INVENTORY

-  BRUSH
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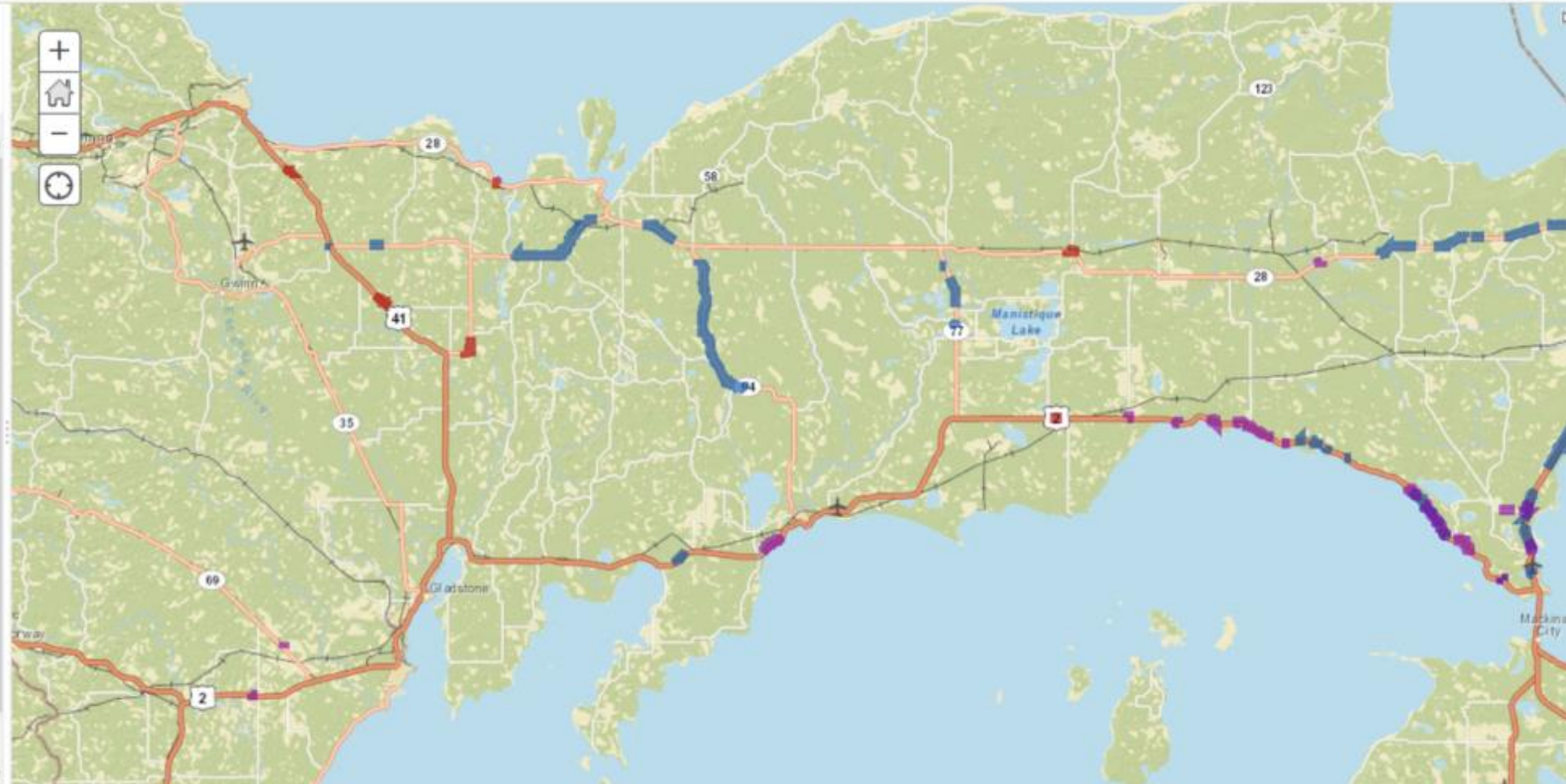
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#### Sensitive Areas



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Protected Areas



Sensitive Areas



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**Federal Land**

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# HOME Invasive Species Inventory

New Map

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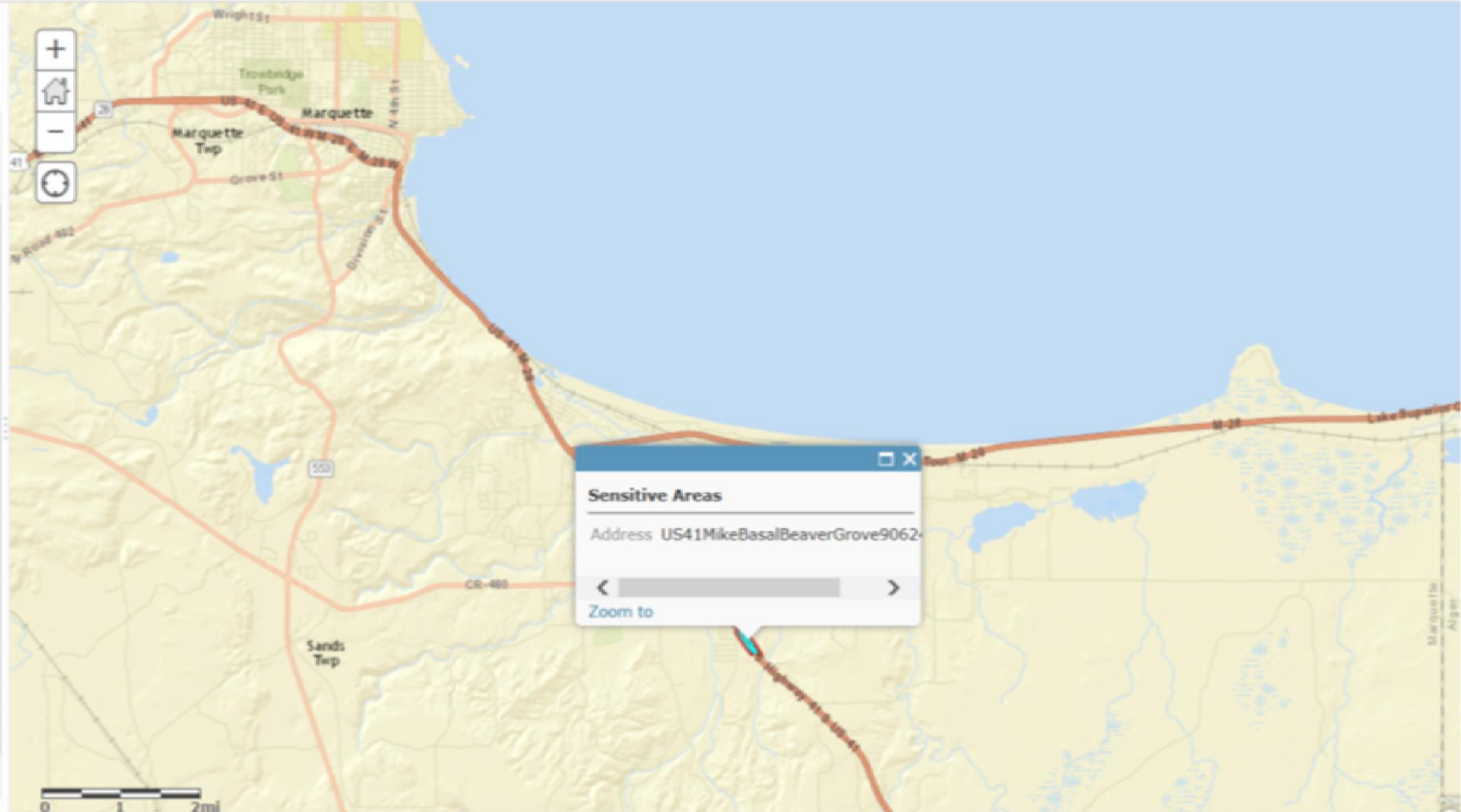
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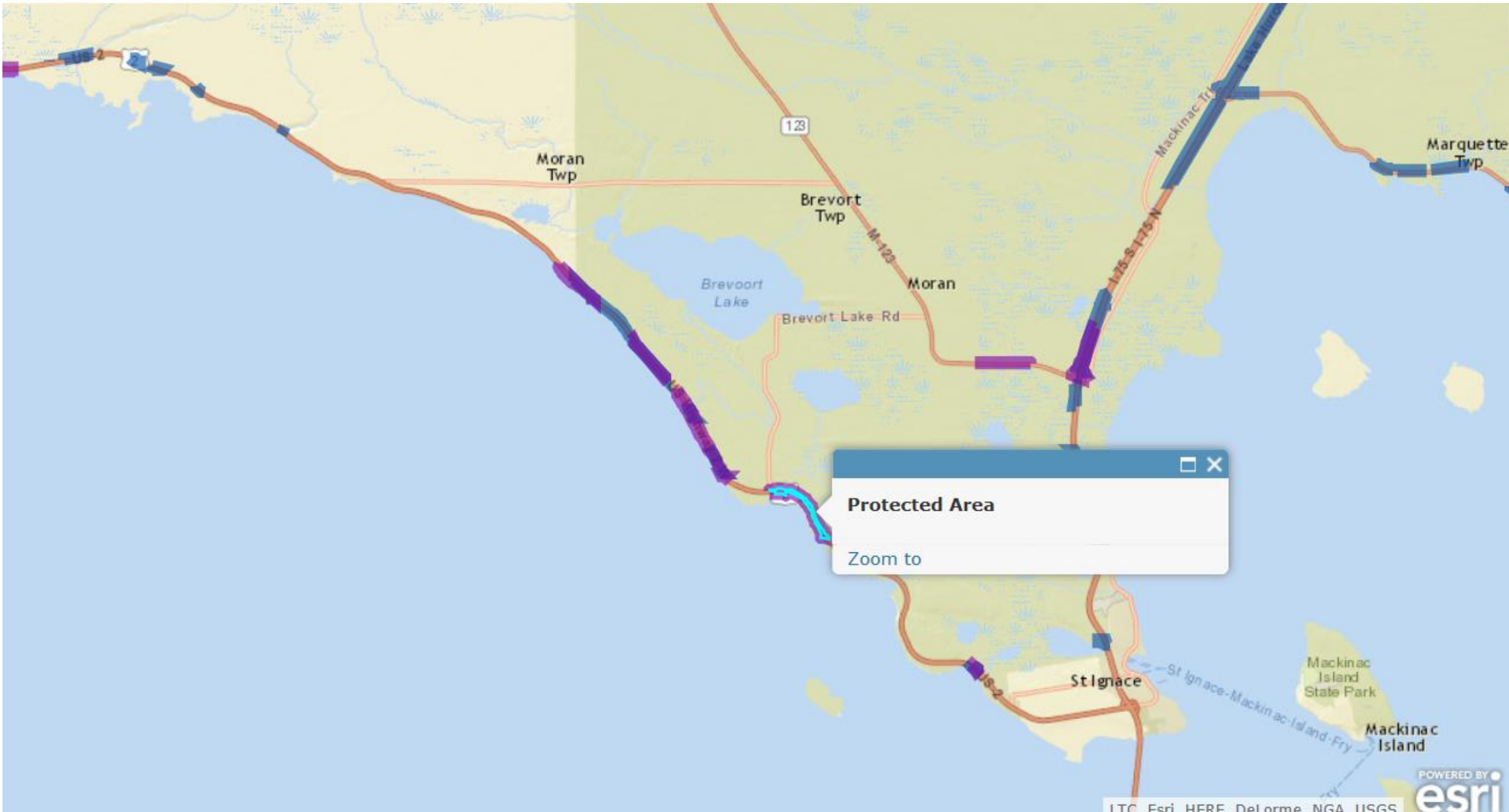


## Sensitive Areas



## Federal Land





Protected Area

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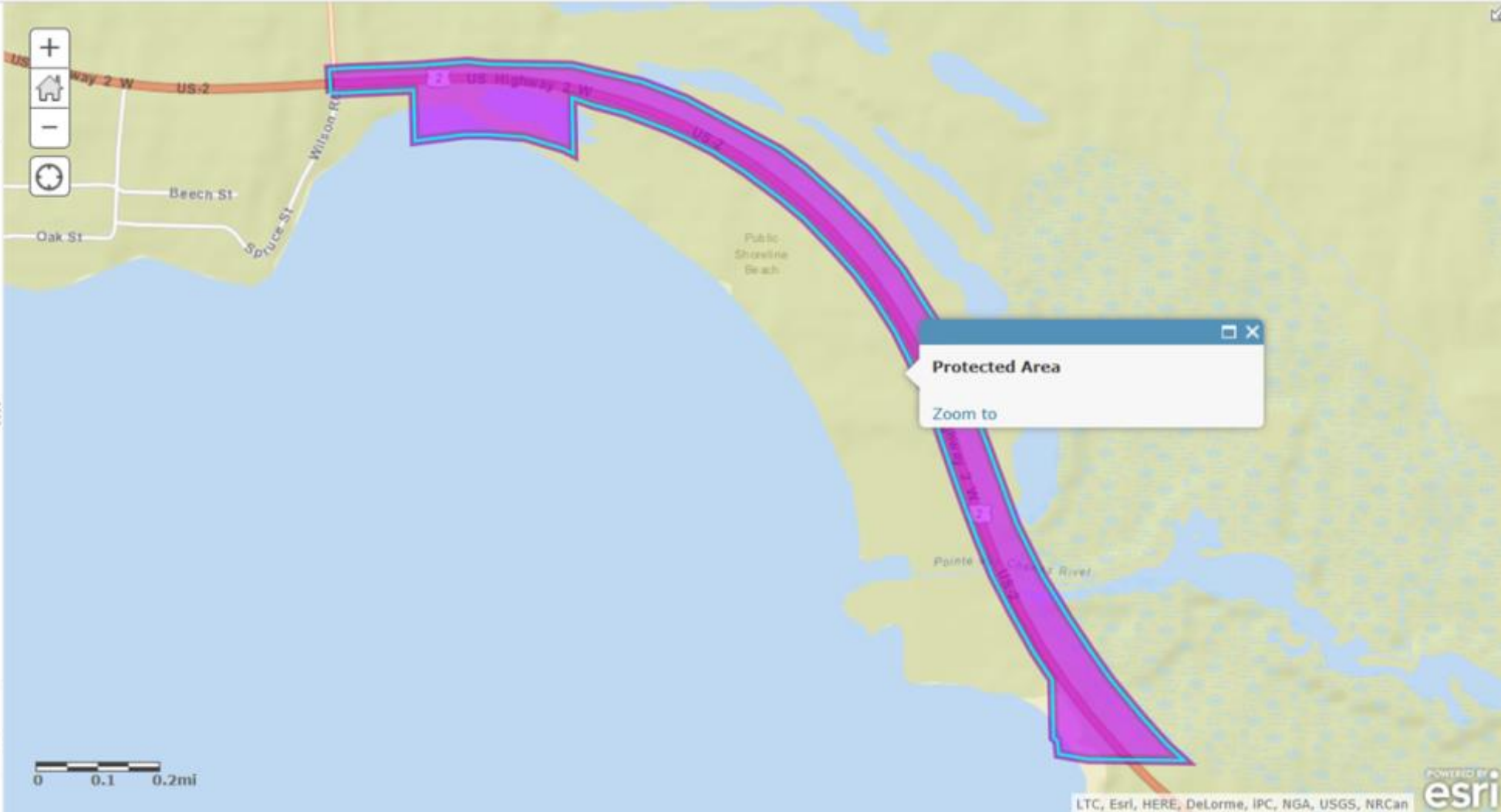
Protected Areas



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Federal Land



# Working Together

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- Partnering with other agencies and states
- Permitting treatment by others on ROW
- Coordinating treatment of problem areas



# Questions

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