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Coastal Mississippi's Invasive Species Program

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Least Wanted of Coastal Mississippi

- Giant Applesnail
- Lionfish
- Feral Hogs
- Asian Tiger Shrimp
- Silver Carp
- Giant Salvinia
- Chinese Tallow
- Cogon Grass
- Hydrilla

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Giant Salvinia

- Federal and State Noxious Weed
- Biomass Doubles Every 3-4 Days
- In Pascagoula River Since 2005
- Common Salvinia in Pascagoula and Pearl River

Lionfish

- First US Sighting 1985
- Moved Into Mississippi Waters About 2015
- Predatory w/ Few Natural Enemies
- Eggs drift with currents
- Found at depths of 980 feet
- Full control not considered feasible

Photo Credit: Neils Lindquist

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Asian Tiger Shrimp

- Eats Native Shrimp and Shellfish
- Possibility of Disease Introduction
- First MS Sighting in 2009
- Appear To Be Reproducing in Gulf
- Founds at Depths of 300 Feet
- Sightings Not Often Reported

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Future Threat - Hydrilla

- Aquarium Plant From Asia
- Millions Spent On “Maintenance Control” in FL
- Cold and Salinity Tolerant
- Infestations Nearby

Future Threat – Silver Carp

- One Caught in Hancock Co – 2014
- Recent sighting
- Grow to 60 lbs.
- Outcompetes Native Fish For Plankton
- Tend to Jump When Disturbed

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Former Future Threat - Giant Applesnail

- Discovered in Robinson Bayou 2014
- Destroys Vegetation
- Extremely High Reproductive Rate
- Since 2014 – 11,945 egg masses destroyed, 450 live snails captured
- Recent flooding events may have spread infestation

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Giant Applesnail Sightings in Louisiana, Mississippi and Alabama

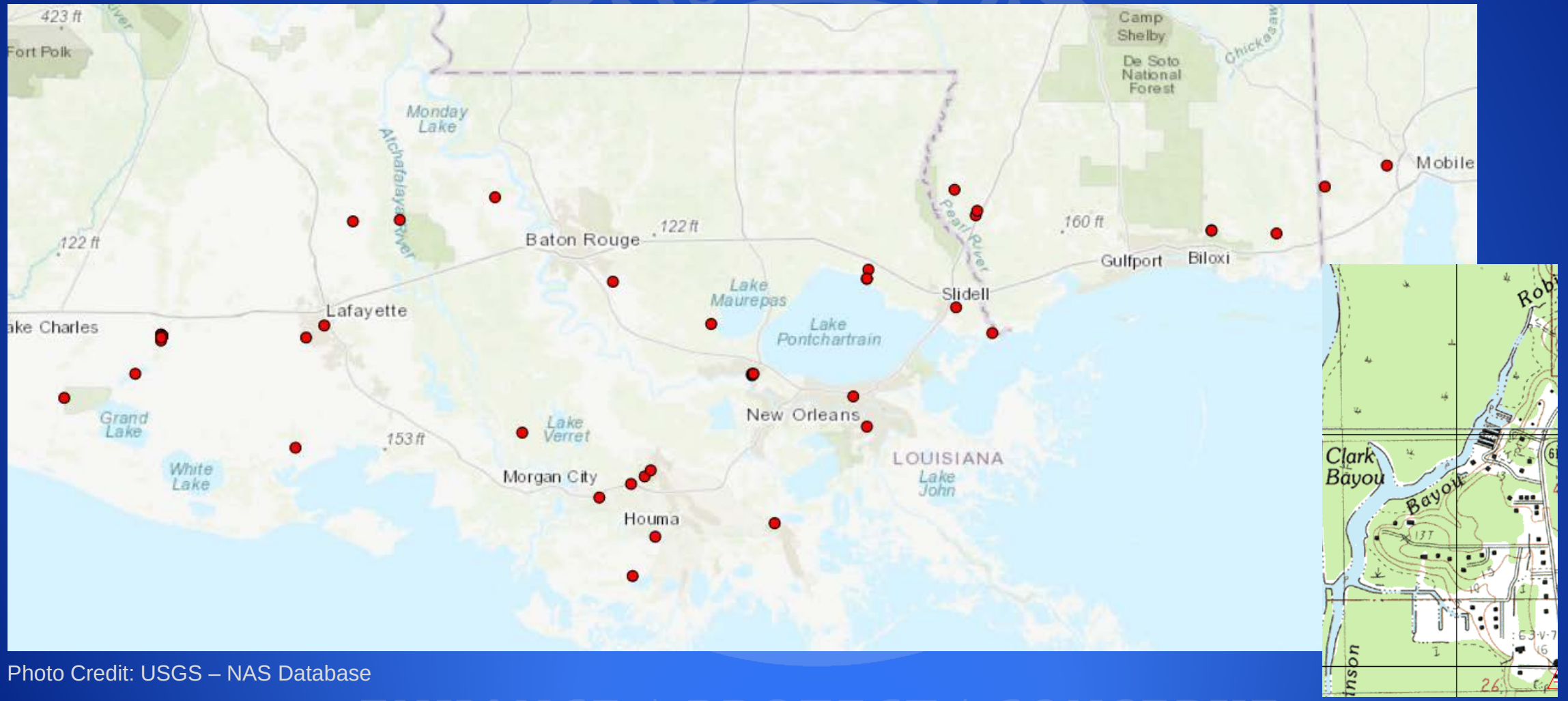

Photo Credit: USGS – NAS Database

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Giant Applesnail Overview:

- Freshwater South American snail
- AKA Golden Applesnail or Island Applesnail
- Sometimes sold as “Mystery Snails”
- Largest snail (grows to 6”)
- Can breathe in water and in air
- Eats a broad range of vegetation
- Females typically larger than males
- Tolerant of salinity up to 7 ppt
- Survives in water 35 to 100 degrees F

Perfect Invaders

- Snails mature in 60 to 80 days
- 2,500 eggs/mass average
- Egg masses produced every two weeks
- Eggs hatch in 10 to 14 days
- Spreads naturally and transported by other species

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Environmental and Economic Damage:

- Strips marshes of vegetation
- Changes plant community to algal-based
- Accumulation of algal biotoxins
- Carrier of rat lungworm parasite
- Millions of dollars of damage to rice crops in Asia
- Louisiana farmer lost 220 acres of crawfish production
- Limited control options

Will lay eggs on just about any vertical surface above the waterline.

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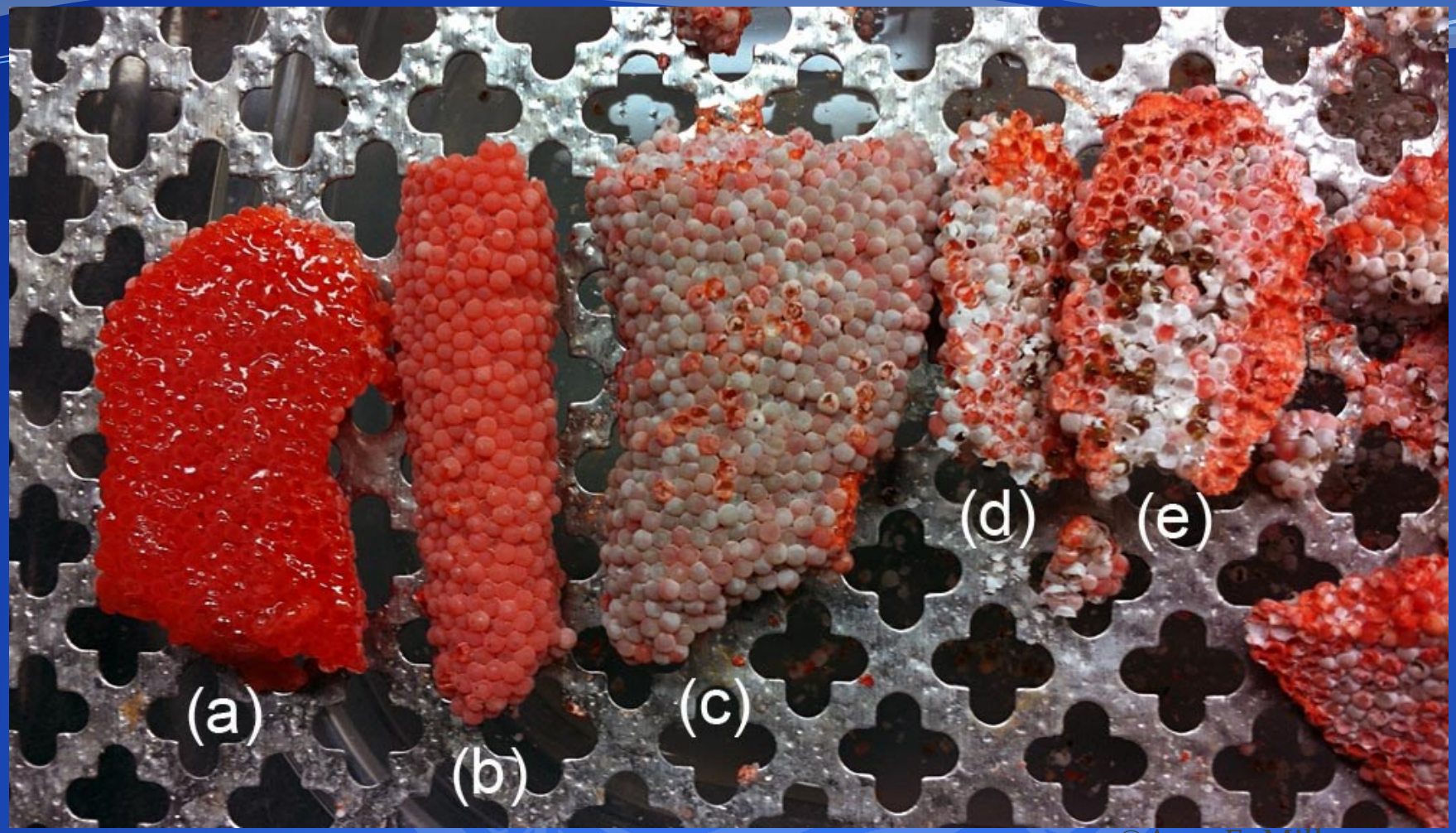

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Eggs start out bright pink then fade as the shell forms

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History of Applesnail Invasions

1980's – Imported into Japan, Philippines, Korea, Singapore Thailand, Vietnam and Malaysia for aquaculture

Year of First Report	State	Total # NAS Reports to Date
1989	Florida	539
2000	Texas	33
2003	Alabama	2
2005	Georgia	69
2006	Louisiana	36
2008	Mississippi	5
2008	South Carolina	32
2008	Arizona	1

Response Efforts

2001 – MDAC BPI adopted an emergency applesnail regulation. Movement of live applesnails into and within the state is prohibited.

2006 – USDA banned importation and interstate transport of most applesnails

Currently – Young, immature snails sold in the aquarium trade are difficult or impossible accurately identify.

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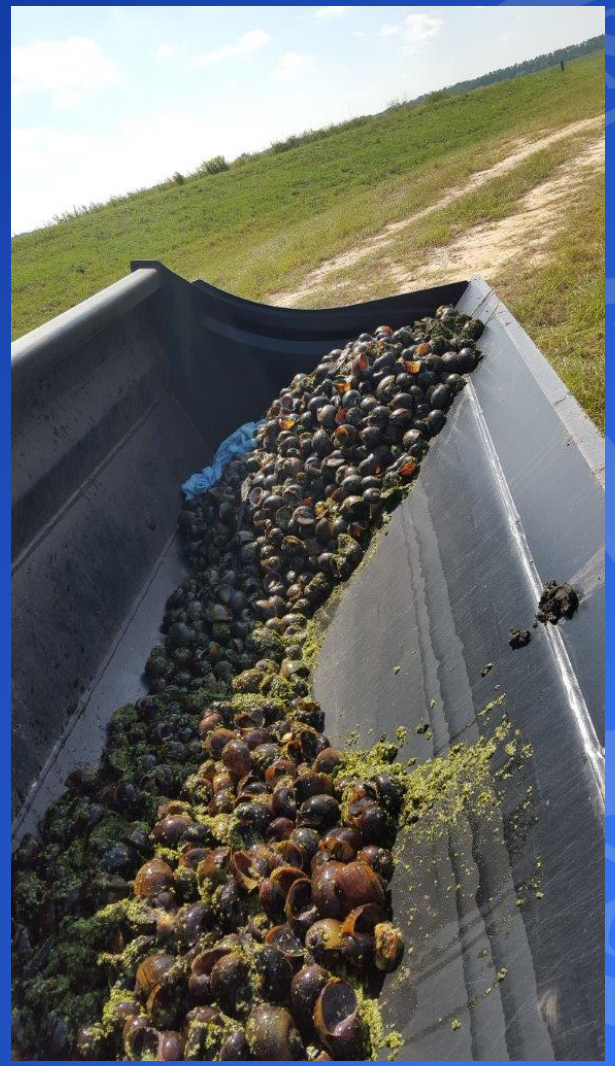
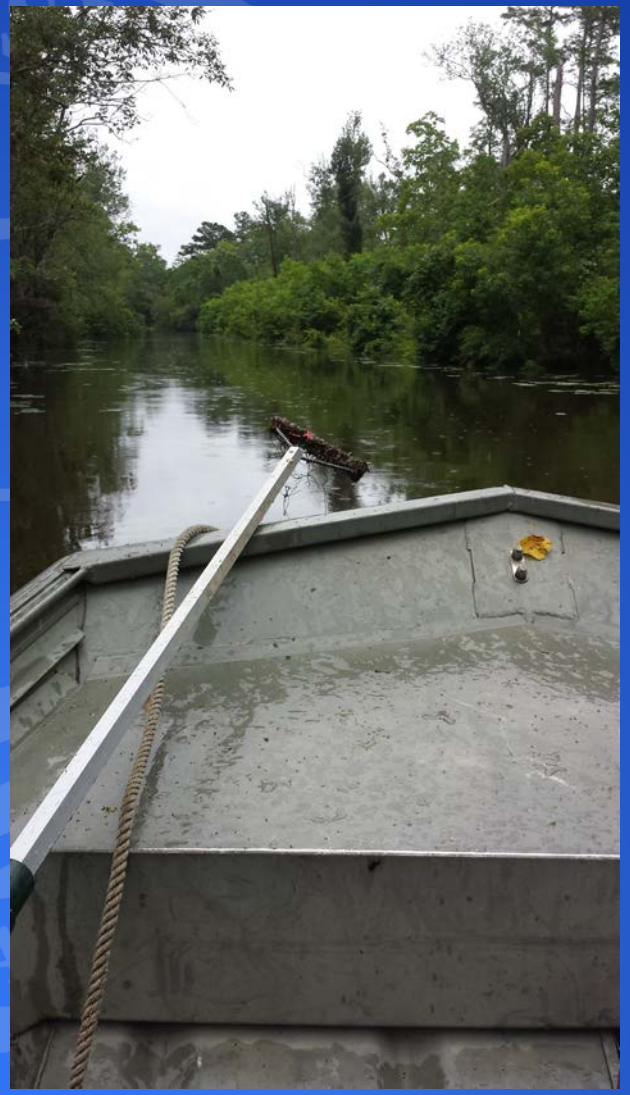
Control Efforts in Coastal Mississippi

Trapping/ Capture





Elimination of Egg Masses

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Mechanical Control of Egg Masses

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Approximate Cost of Weekly Giant Applesnail Control Missions - Robinson Bayou

Item	Amount
Labor (12 man hours / mission)	$576
Truck (60 miles @ Federal rate)	$32
Boat (25 hp outboard)	$16
Total	**$624**

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Yearly Cost of Giant Applesnail Control in Robinson Bayou

Year	No. of Missions	No. of Egg Masses	No. of Snails	Yearly Cost
2014	9	322	0	$5,616
2015	19	339	7	$11,856
2016	35	3,643	182	$21,840
2017	39	7,438	243	$24,336
Total	**102**	**11,742**	**432**	**$63,648**

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2018 – Help from Gulf Corps

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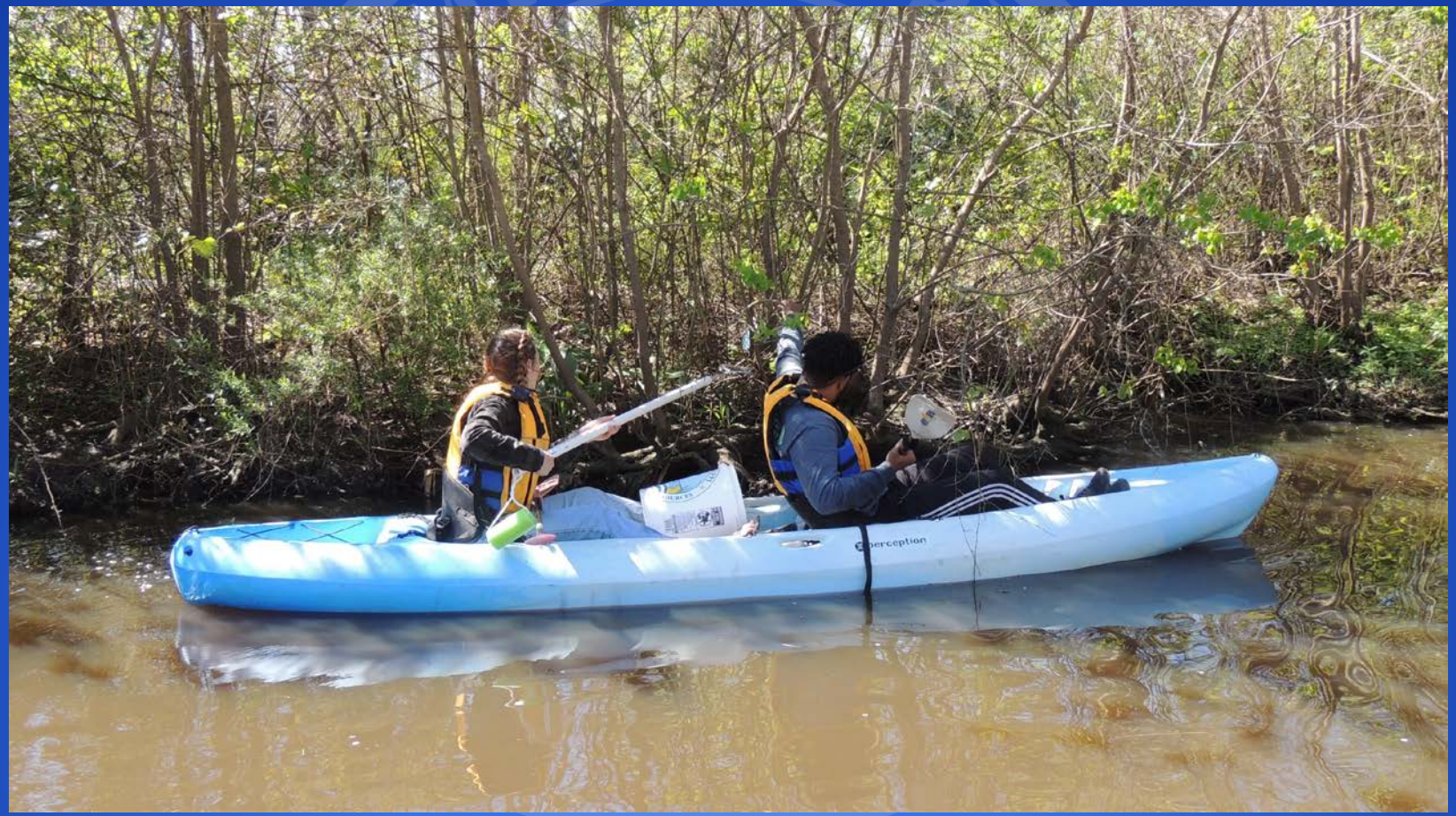

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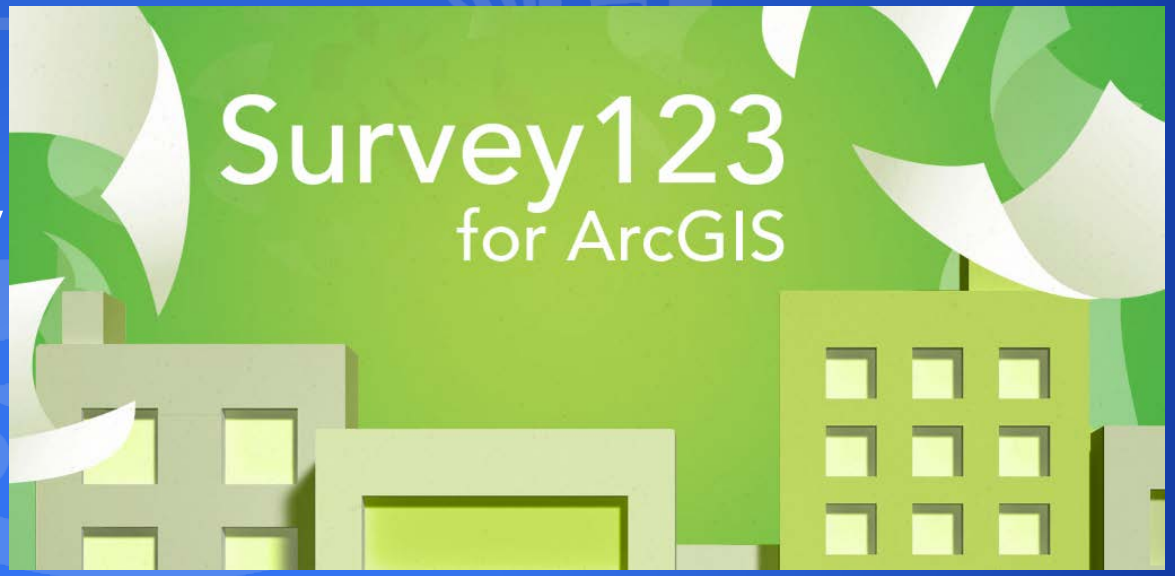
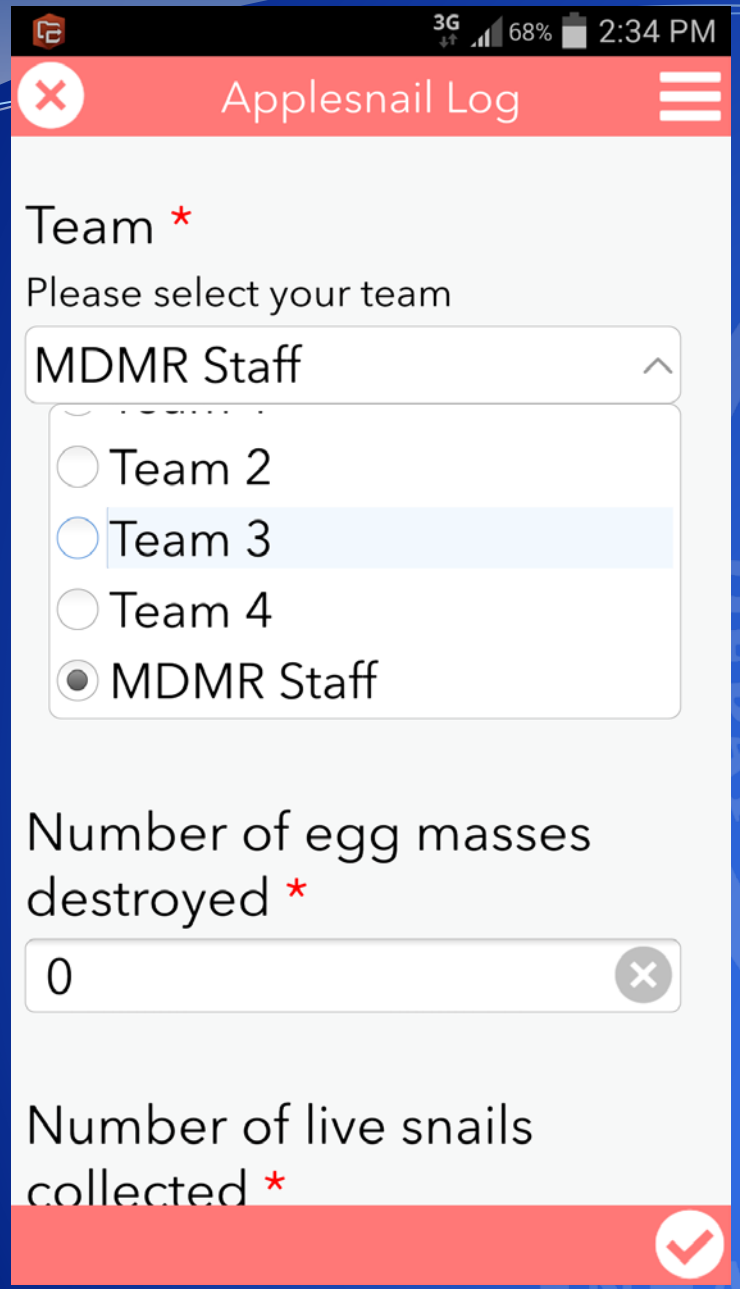
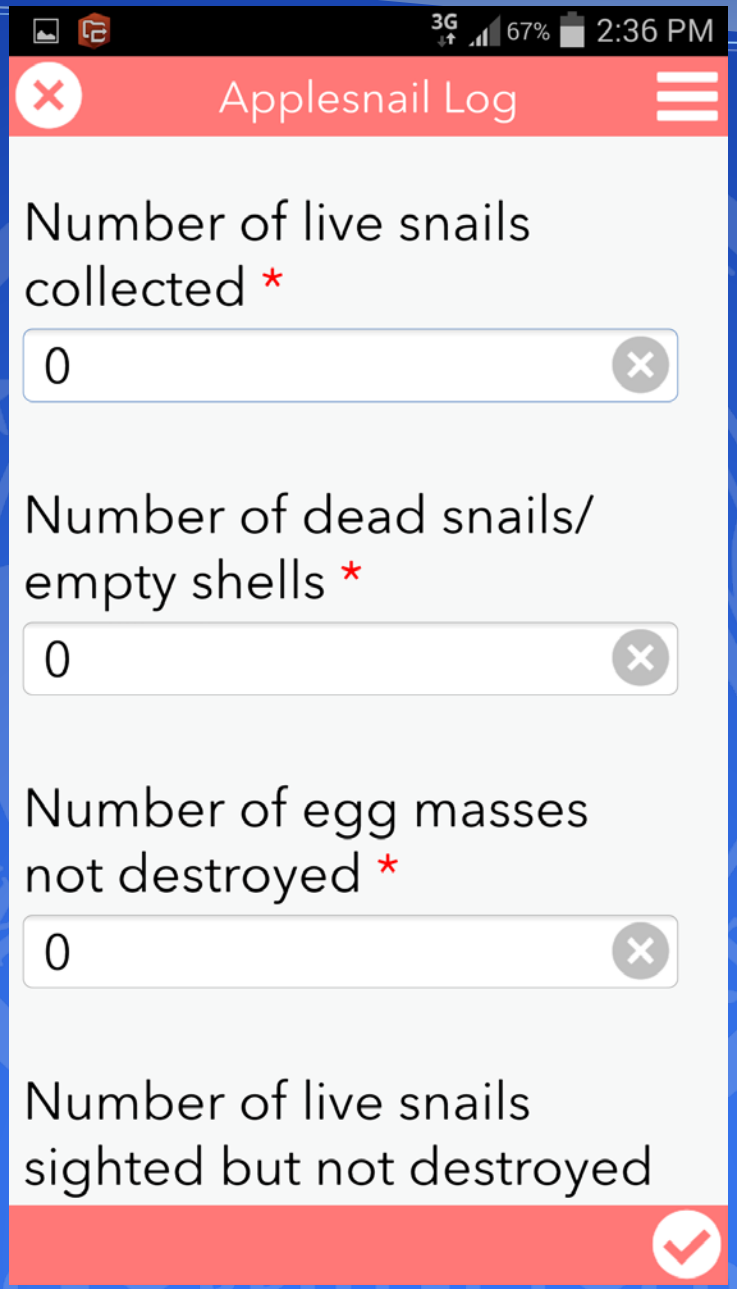
Field Data Collection:

- Free downloadable app for users
- Easily configurable for any type of project
- Can set work area assignments
- Real-time monitoring of activity
- Remote uploading of data
- Data can be downloaded in a variety of formats




68% 2:34 PM
Applesnail Log
Team *
Please select your team
MDMR Staff
Team 2
Team 3
Team 4
MDMR Staff
Number of egg masses destroyed *
0
Number of live snails collected *


67% 2:36 PM
Applesnail Log
Number of live snails collected *
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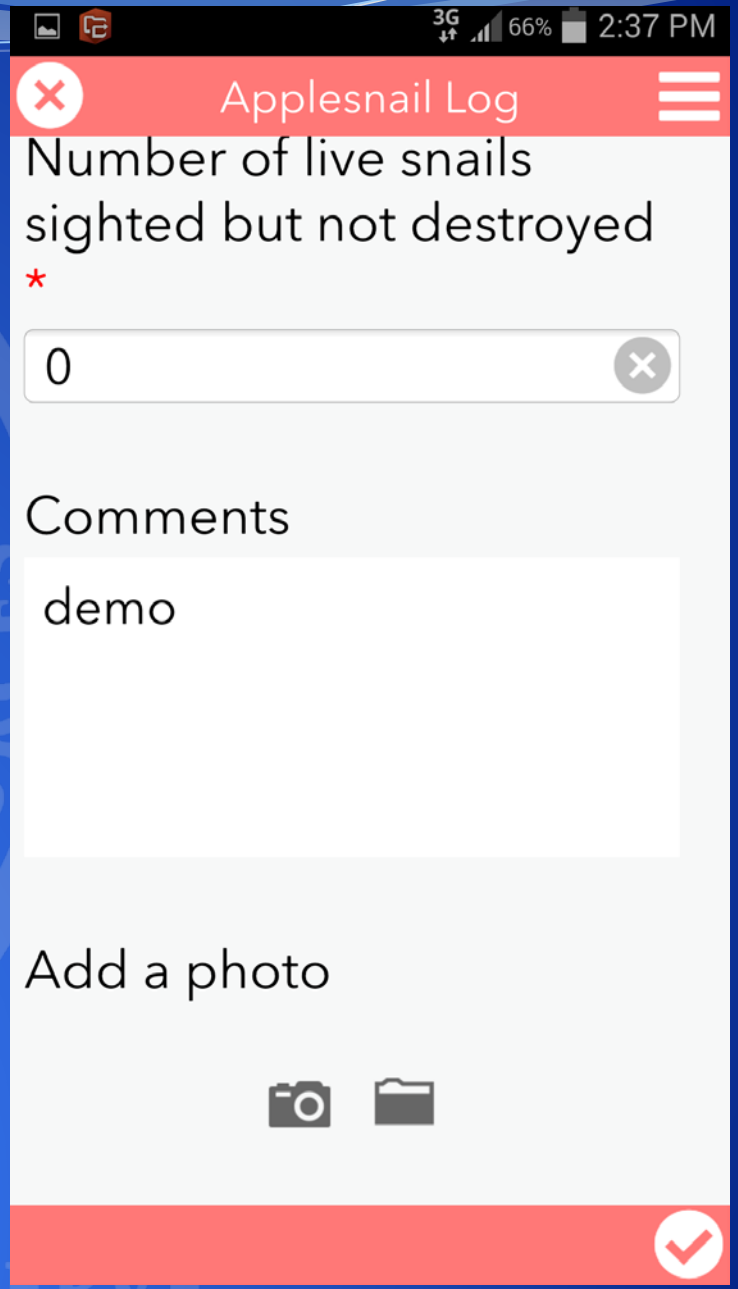
Number of dead snails/ empty shells *
0
Number of egg masses not destroyed *
0
Number of live snails sighted but not destroyed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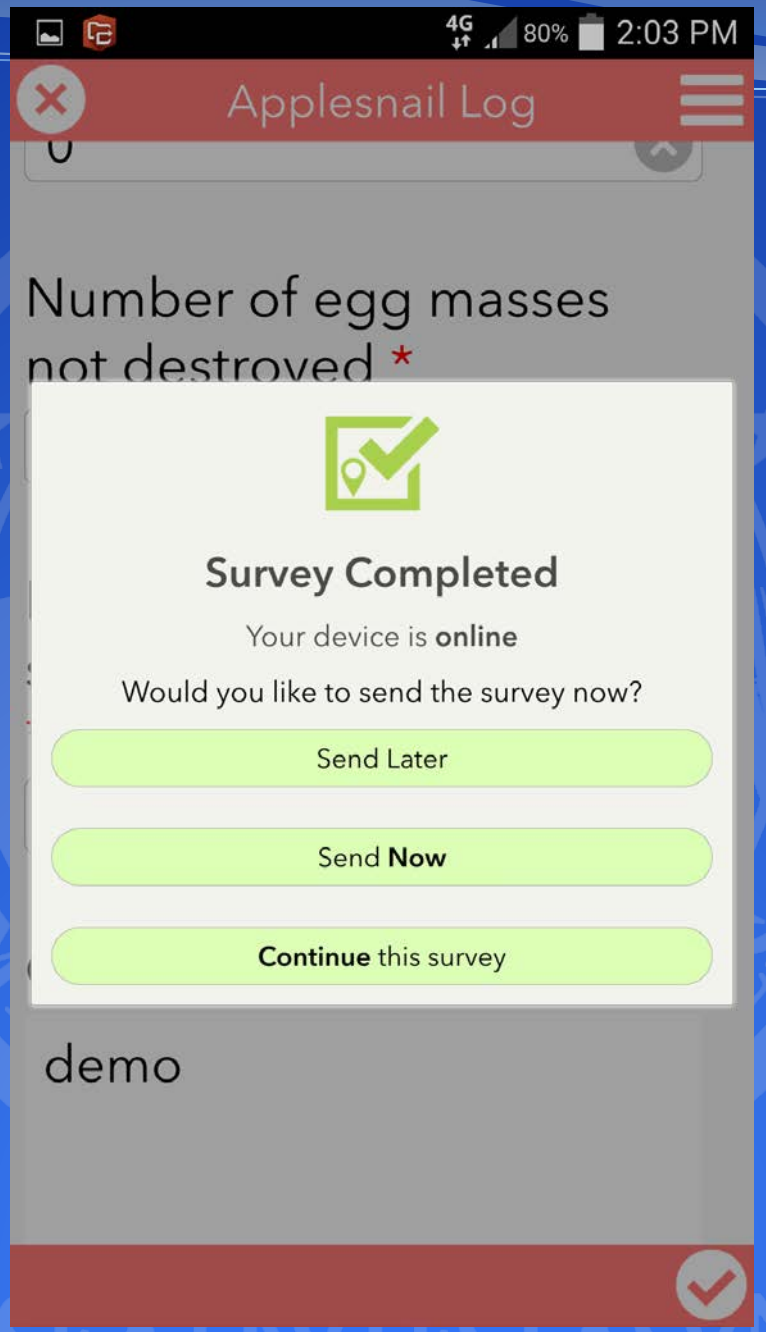
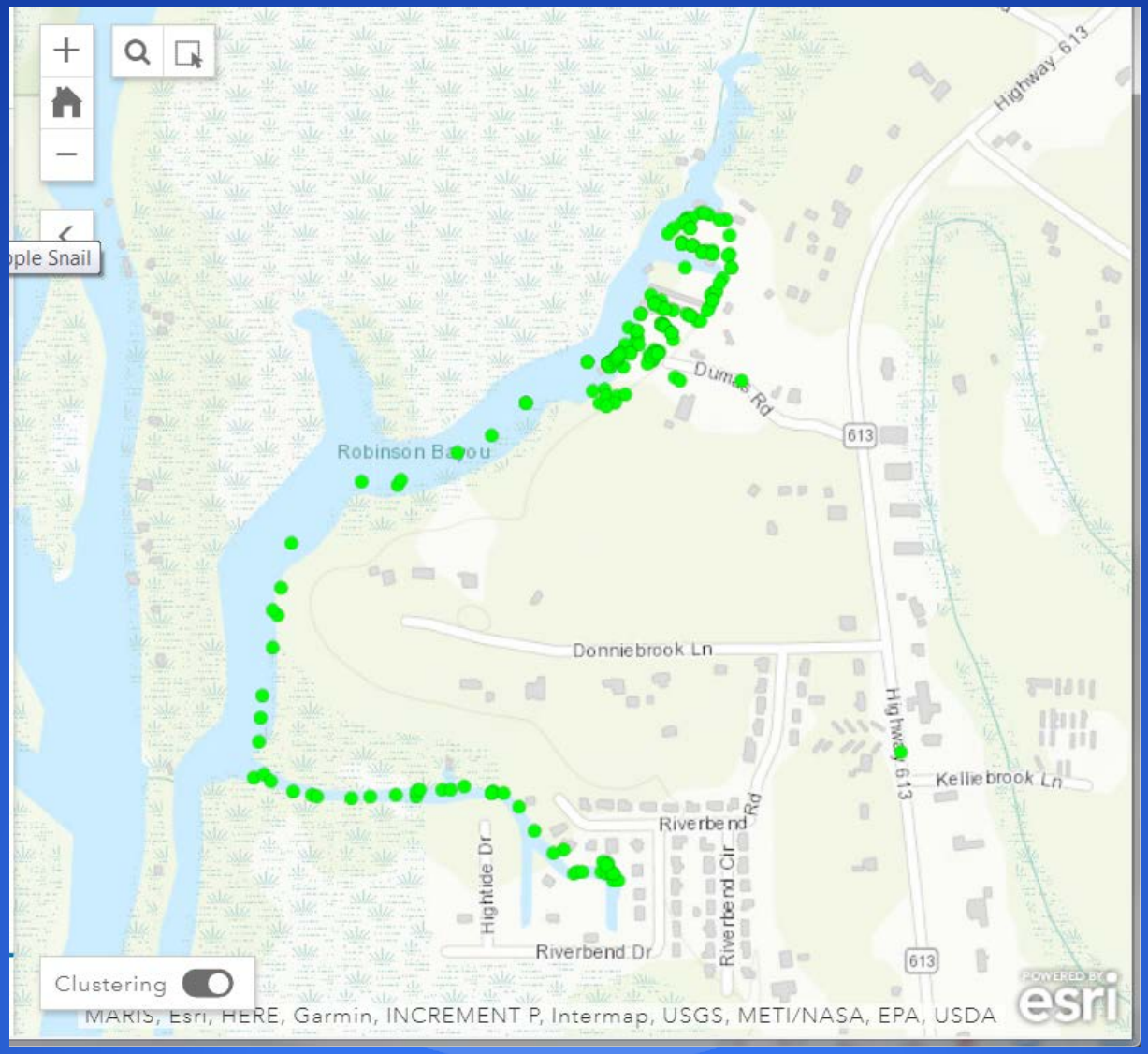
Applesnail Log
Number of live snails sighted but not destroyed *
0
Comments
demo
Add a photo


4G
80%
2:03 PM
Applesnail Log
0
Number of egg masses not destroyed *
Survey Completed
Your device is online
Would you like to send the survey now?
Send Later
Send Now
Continue this survey
demo



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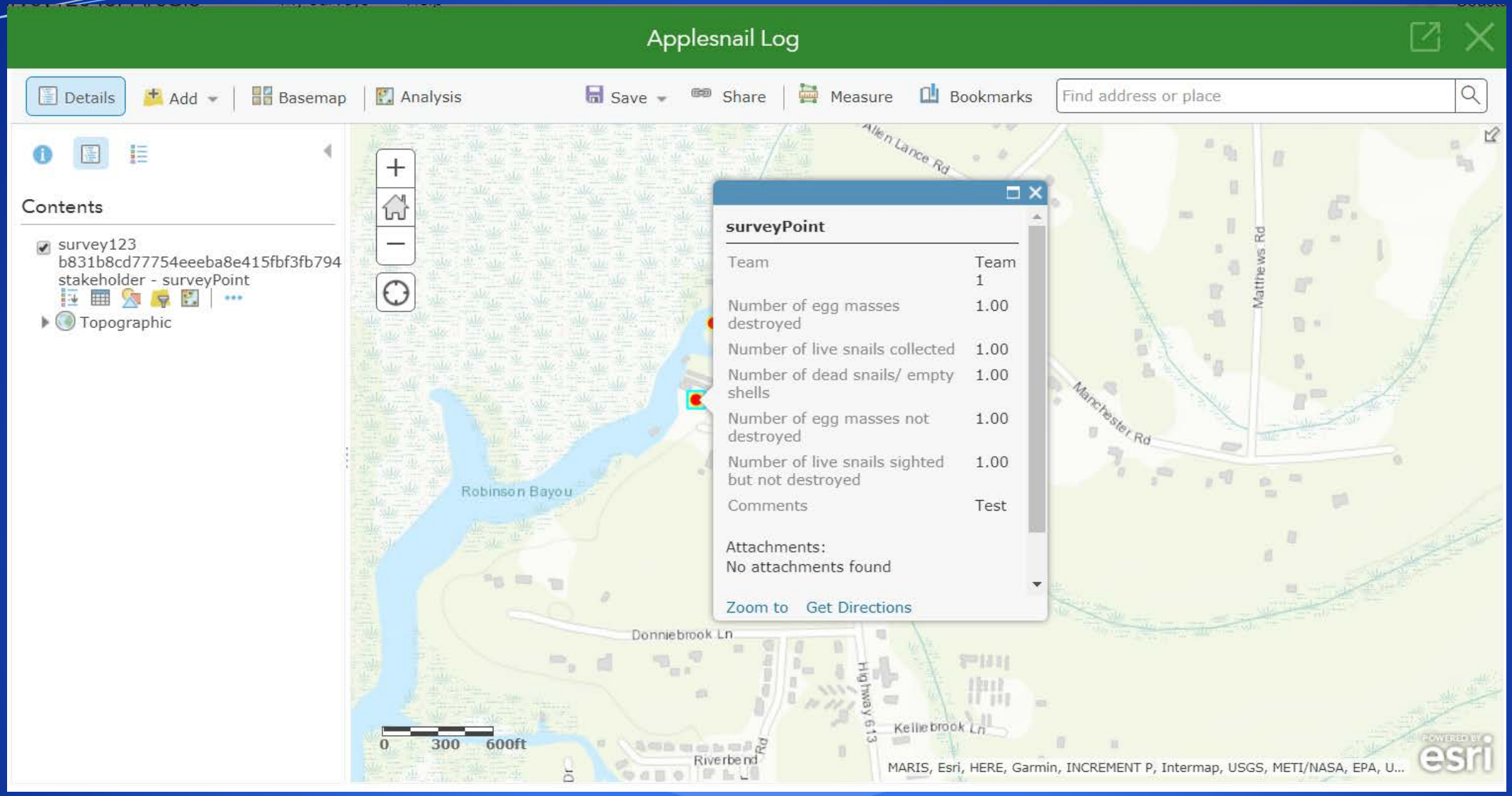

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Questions?

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