How has Mississippi used its State ANS Grant Funding FY14-24?

Dennis Riecke
MDWFP Fisheries Coordinator

Gulf and South Atlantic Regional Panel on Aquatic Invasive Species

Biloxi, MS -- May 14, 2024

Giant Salvinia

Giant Salvinia

Bighead Carp

Amy Benson - USGS ©

Bighead Carp Juveniles

Small Silver Carp – Bee Lake

How many nonnative species are in Mississippi?

By 2018 there were:

68 nonnative species
36 plants
18 fishes
14 other species

Lionfish

Don DeMaria

How can we know if an nonnative species has the potential to be invasive?

Invasive species typically have one or more of the following traits:

- High rate of reproduction
- Pioneer Species
  (able to colonize areas after they have been disturbed)
- Short generation times
- Long-lived
- High dispersal rates
- Single-parent reproduction
- Vegetative or clonal reproduction

Invasive species typically have one or more of the following traits:

- Broad native range / Tolerant of wide range of conditions
  Habitat generalist (can live in many different types of habitats)
- Abundant in native range
- Broad diet
- Gregarious
- Human commensal (lives in close association with humans)
- High genetic variability

Black Carp

381 records

since 2003

Water Hyacinth

Hydrilla


Hydrilla
Hydrilla verticillata
Photo by Vic Ramey
© 1998 University of Florida

Alligatorweed

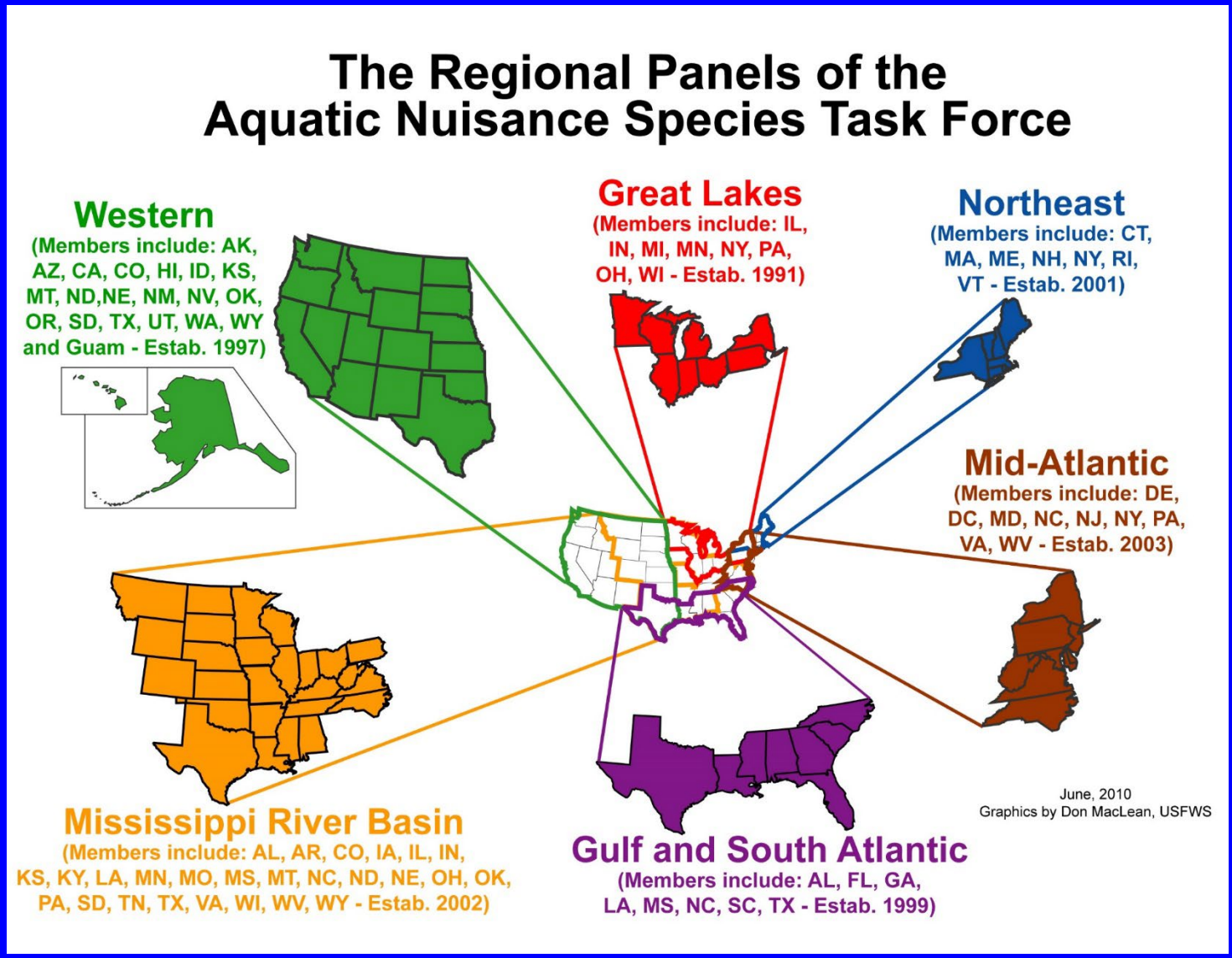
Small Silver Carp entering Bee Lake

Federal Regional Role

Mississippi joined:

- Gulf Panel - 2004
- Miss. R. Panel - 2006

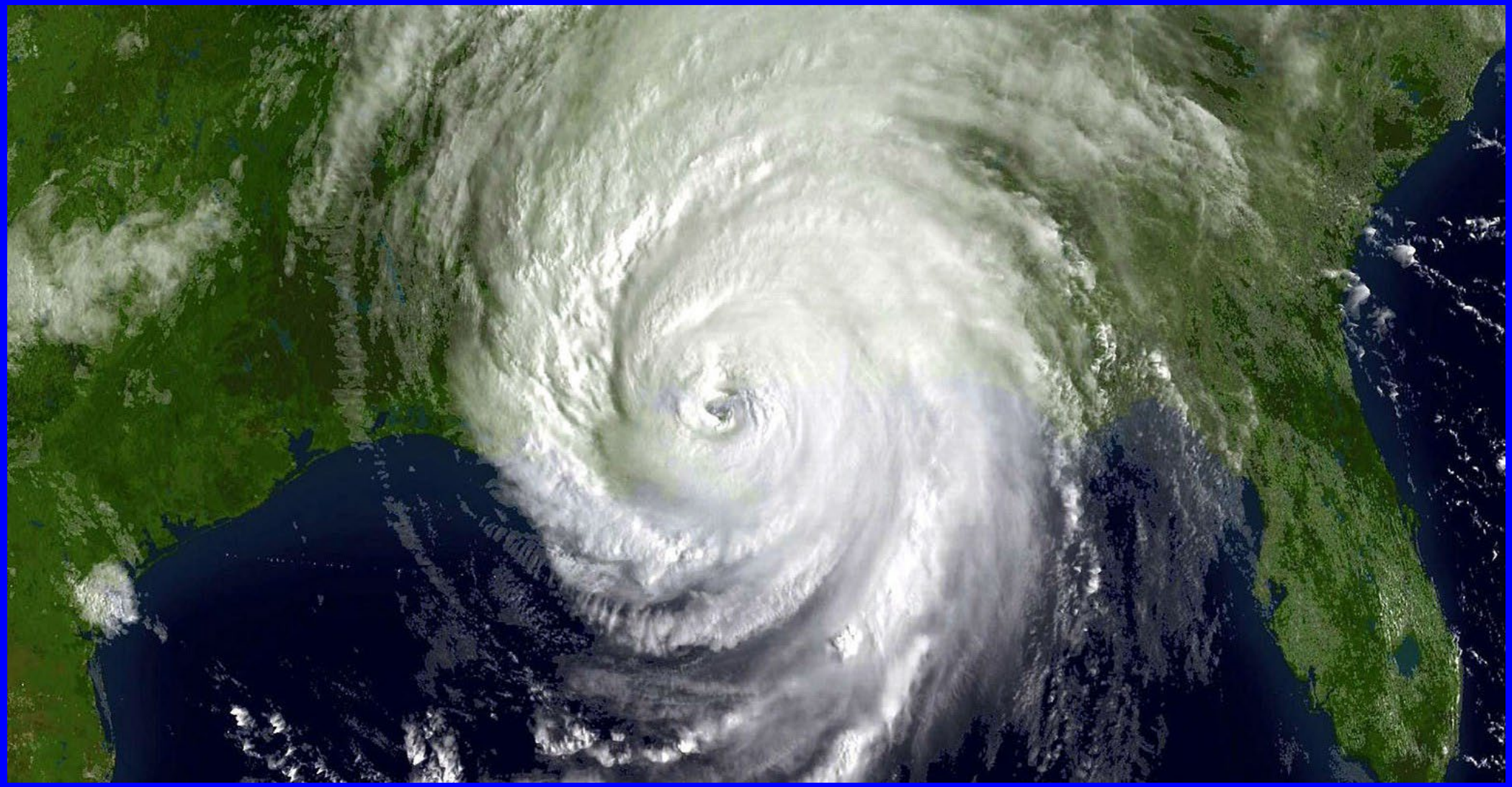
Australian Spotted Jellyfish



MS ANS State Plan Development History

- Gov. Ronnie Musgrove requested state agencies to do a plan
- MS Dept. of Environmental Quality in charge
- MS Aquatic Invasive Species Task Force formed
- Met 8 times, October 2003 – July 2009
- Used LA Plan as a guide
- Major Delays for completion – disasters & funding
- Governors Barbour and Bryant supported work
- Governor Bryant approved plan in 2013
- ANSTF approved plan July 2013

Major Delays
Hurricane Katrina – August 2005



Major Delays
BP Deepwater Horizon Spill – August 2010

MS State Plan for Aquatic Invasive Species

- A snapshot of existing situation
- Pathways
- Species of Concern – established species
- State Agency Authorities
- Goals, Objectives, Management Actions
- Implementation Table
- Program Monitoring & Evaluation
- Approved, Restricted, Prohibited Species lists
- Federal Laws

- Approved Plans are Eligible for Federal Funding
- 75% Federal / 25% State $$$
- 1-2 million/yr divided up between all 44 plans

- Federal $$$ FY14-FY23 = $627,136;
- State $$$ FY14-FY23 = $209,045
- Total $$$ = $836,181

Mississippi State Management Plan for Aquatic Invasive Species

Waterhyacinth (*Eichhornia crassipes*) management - Crane Lakes, Pascagoula River

Final Draft Management Plan

Mississippi Department of Environmental Quality—Henry Folmar and Mike Beiser
EPA Gulf of Mexico Program—Phil Bass
Mississippi Aquatic Invasive Species Task Force

Made possible by a grant from the Mississippi Department of Environmental Quality's Coastal Impact Assistance Program to the University of Southern Mississippi, the Mississippi Department of Environmental Quality, and the Mississippi Department of Marine Resources

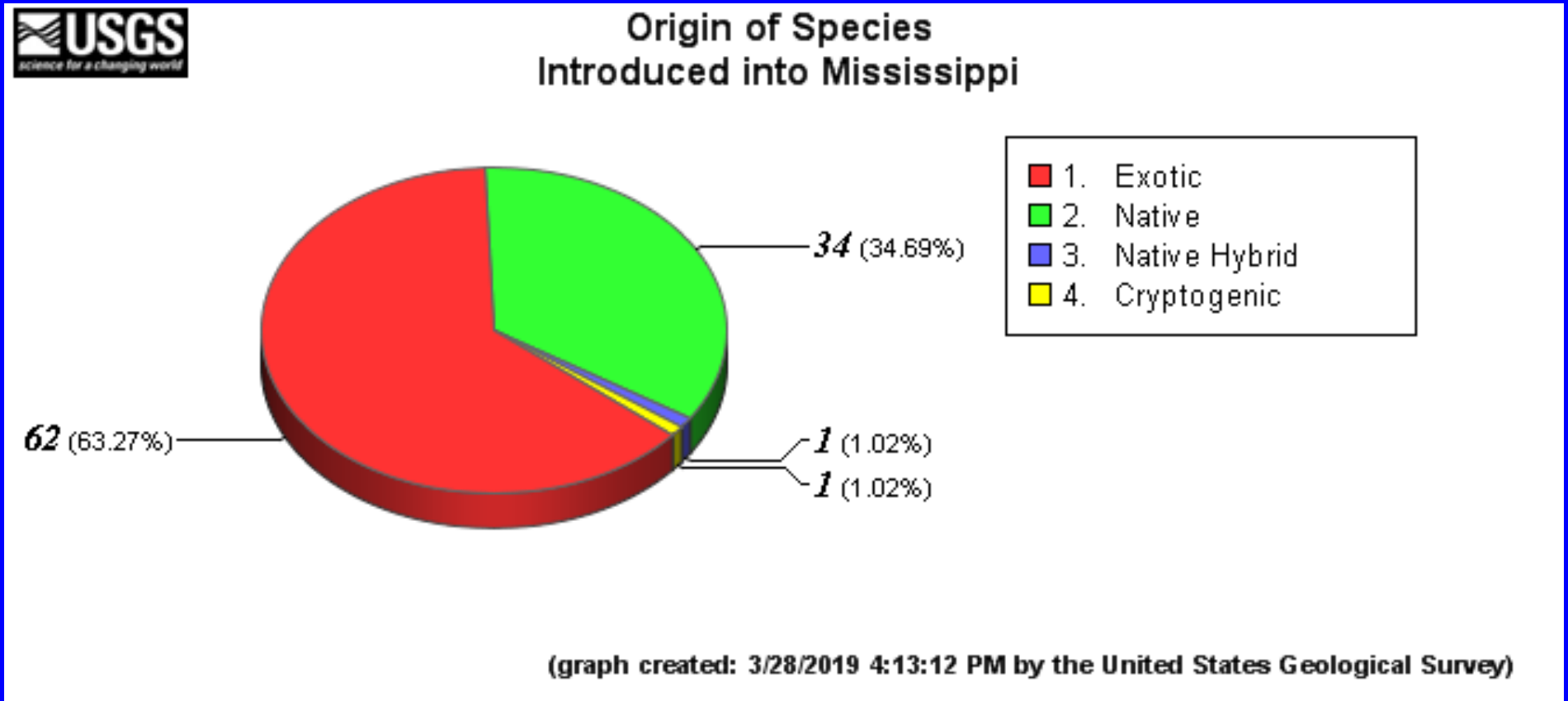
Compiled and written by the Tulane / Xavier Center for Bioenvironmental Research—Alysia Kravitz Loshbaugh, Richard Campanella, Shelley Meaux, and members of the Mississippi Aquatic Invasive Species Task Force.

March 20, 2013

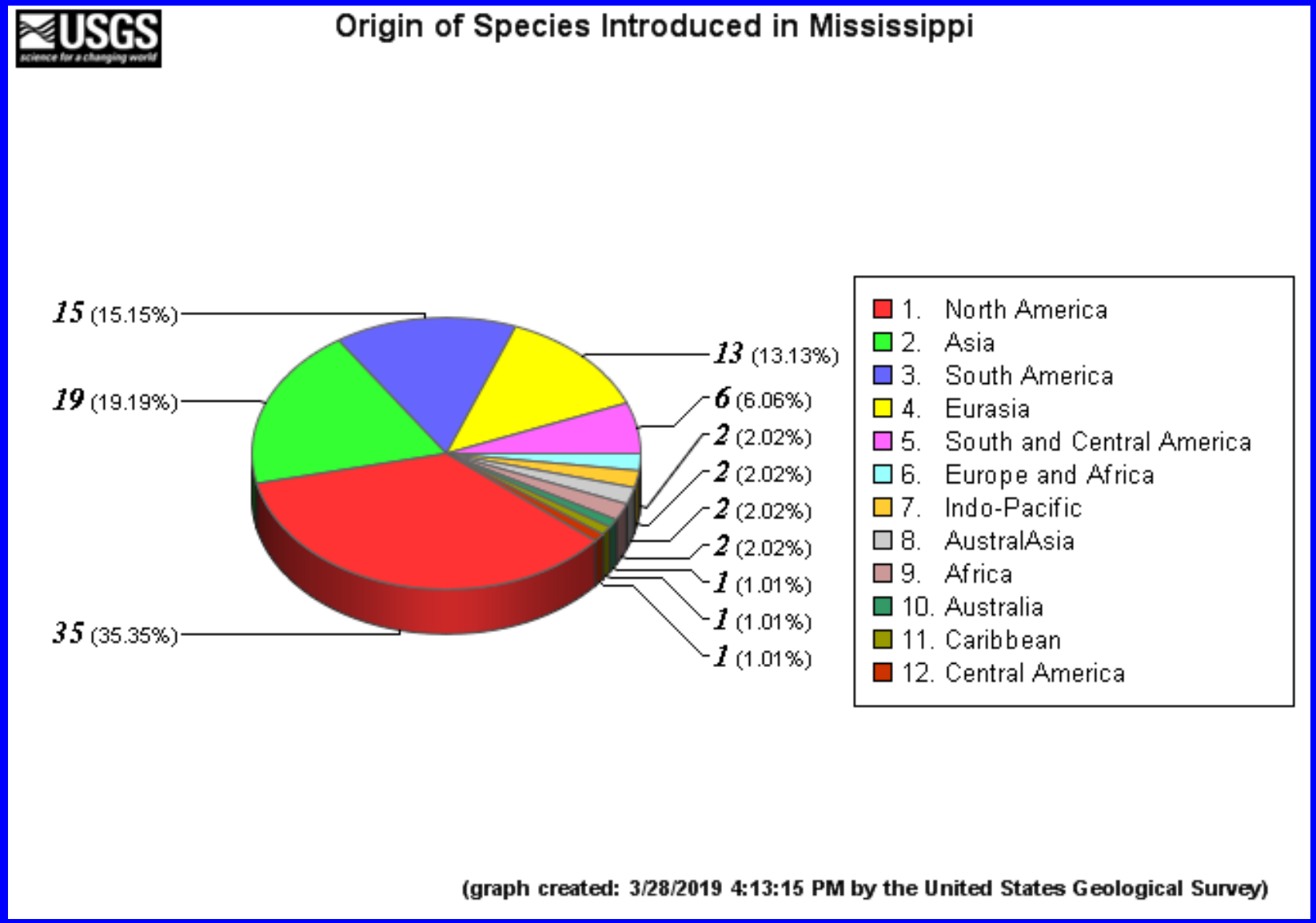
Introductions in Bordering States

	MS	LA	AR	AL	TN
Fish	44	52	61	77	72
Aquatic Plants	35	50	28	35	27
Total	101	128	104	136	110

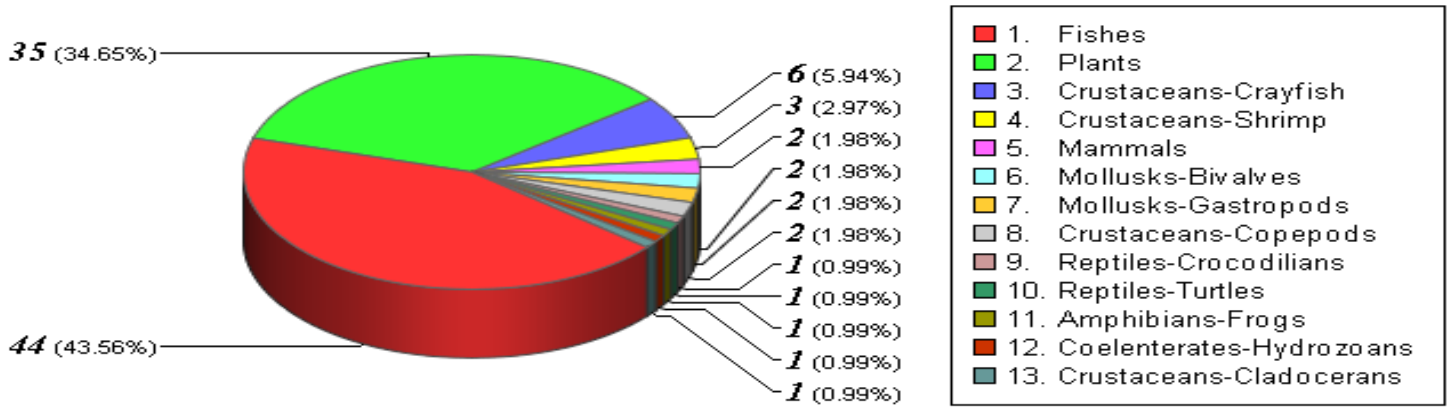
Native vs Nonnative Introductions



Where in the World Did You Come From?

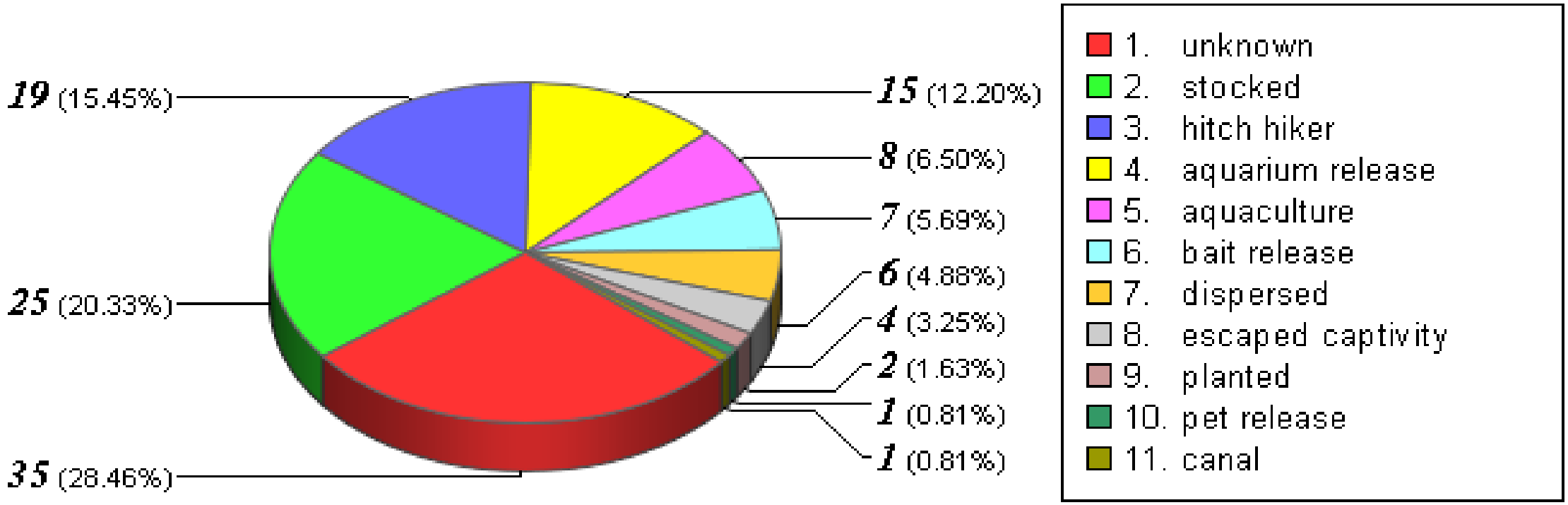


Groups Introduced into Mississippi



(graph created: 3/28/2019 4:13:13 PM by the United States Geological Survey)

Introduction Pathways for Mississippi



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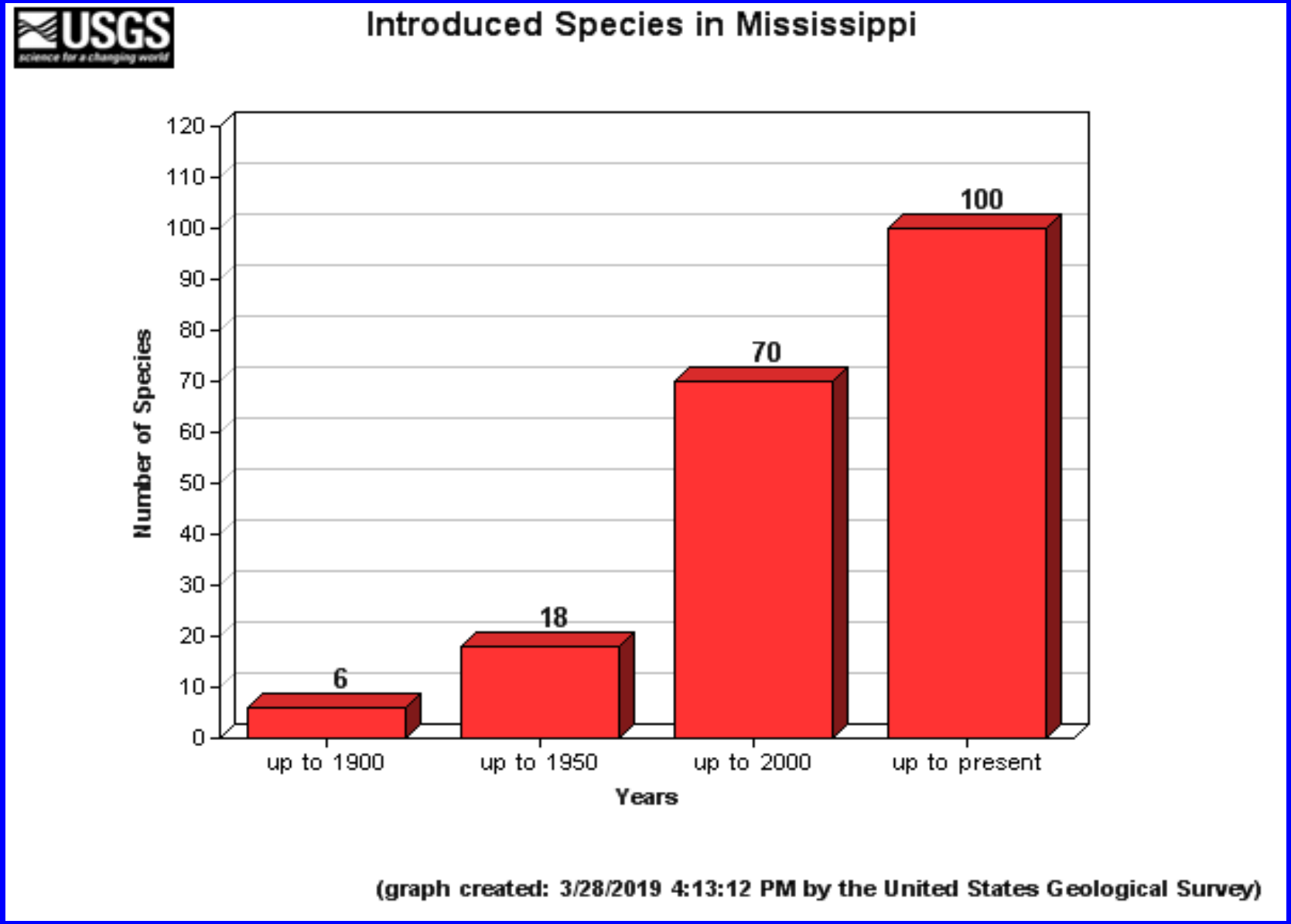
Introductions by Time Period



Control Methods

Harvesting – Commercial Fishing - Moon River Foods

Control Methods

Chemicals – Aquatic Herbicides

What is the MDWFP doing?

- Encouraging harvest – special seasons
- Prohibiting stocking nonnatives in ponds
- Changing bait capture and use rules
- Treating invasive plants at public lakes
- Educating the public
- Monitoring distribution
- Tracking Asian Carp in Tenn -Tom Waterway
- Assessing effect of Silver Carp on native fish

Credit: Nathan Aycock/MDWFP


SIERRA
GMC
4x4

MAISC Projects

- Teachers to TVA AIS plant workshop (2016-17)
- ANS Meeting Display (2017)
- MAISC logo (2017)
- Tracking of Silver Carp in Tenn -Tom Waters (2017)
- Aquatic Plant Survey – 42 waters (2017)
- Northern Snakehead boat ramp signs - 100 (2017-18)
- Northern Snakehead flyers - 1,000 (2017)
- MAISC brochure (2018)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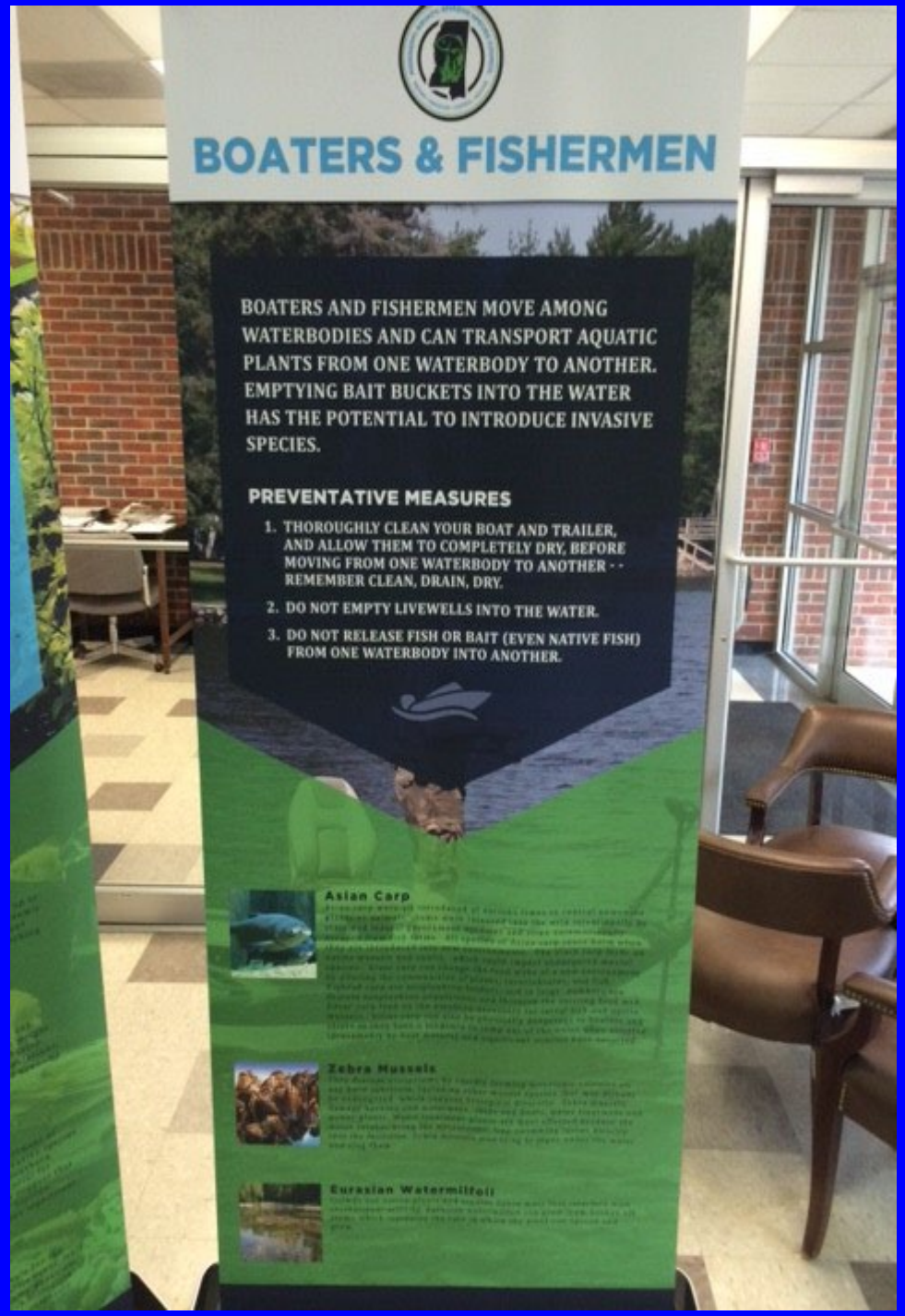
MAISC Projects

- Lionfish and Tiger Shrimp Reporting Decals (2018)
- Teachers to TVA AIS plant workshop (2018)
- Northern Snakehead reporting rulers (2018)
- Aquatic Plant ID, Treatment, Control Sheets (2018-19)
- Aquatic Plant Survey – 3 surveys so far (2018-22)
- Herbicide applications on Hyacinth, Hydrilla, Salvinia (2018-24)
- Herbicide purchases to treat plants (2018-24)
- Revised ANS brochure (2018-19)
- Northern Snakehead flyers – print 1,000 more (2018)


INVASIVE ANIMALS
INVASIVE AQUATIC PLANTS
maisc.org
AQUARIUM PETS
BOATERS & FISHERMEN


AQUARIUM PETS
A NON-NATIVE SPECIES RELEASED INTO THE WILD HAS THE POTENTIAL TO DISPLACE A NATIVE SPECIES AND DISRUPT THE NATIVE ECOSYSTEM. INVASIVE PLANTS CAN CLOG WATERWAYS AND AFFECT RECREATIONAL ACITVIES SUCH AS BOATING, SWIMMING AND FISHING. INVASIVE ANIMALS OFTEN HAVE NO NATURAL PREDATORS AND POPULATIONS CAN REACH HIGH DENSITIES, ALTERING THE AQUATIC ECOSYSTEMS BY REDUCING BIOLOGICAL DIVERSITY.
PREVENTATIVE MEASURES
1. UNWANTED PETS SHOULD NEVER BE RELEASED INTO THE WILD.
2. DO NOT DUMP AN UNWANTED AQUARIUM INTO A WATERBODY.
Egeria
Lionfish
Pythons
Vermiculated Sailfin Catfish


BOATERS & FISHERMEN
BOATERS AND FISHERMEN MOVE AMONG WATERBODIES AND CAN TRANSPORT AQUATIC PLANTS FROM ONE WATERBODY TO ANOTHER. EMPTYING BAIT BUCKETS INTO THE WATER HAS THE POTENTIAL TO INTRODUCE INVASIVE SPECIES.
PREVENTATIVE MEASURES
1. THOROUGHLY CLEAN YOUR BOAT AND TRAILER, AND ALLOW THEM TO COMPLETELY DRY, BEFORE MOVING FROM ONE WATERBODY TO ANOTHER - - REMEMBER CLEAN, DRAIN, DRY.
2. DO NOT EMPTY LIVEWELLS INTO THE WATER.
3. DO NOT RELEASE FISH OR BAIT (EVEN NATIVE FISH) FROM ONE WATERBODY INTO ANOTHER.
Asian Carp
Zebra Mussels
Eurasian Watermilfoil

INVASIVE AQUATIC PLANTS

INVASIVE AQUATIC PLANT SPECIES ARE CAPABLE OF AGGRESSIVE VEGETATIVE GROWTH AND HAVE FEW NATURAL PREDATORS IN THE AREA WHERE THEY ARE INTRODUCED. THEY OUT-COMPETE NATIVE PLANTS, DISRUPT THE NATIVE ECOSYSTEM AND IMPEDE SWIMMING, BOATING, FISHING AND SKIING.

PREVENTATIVE MEASURES

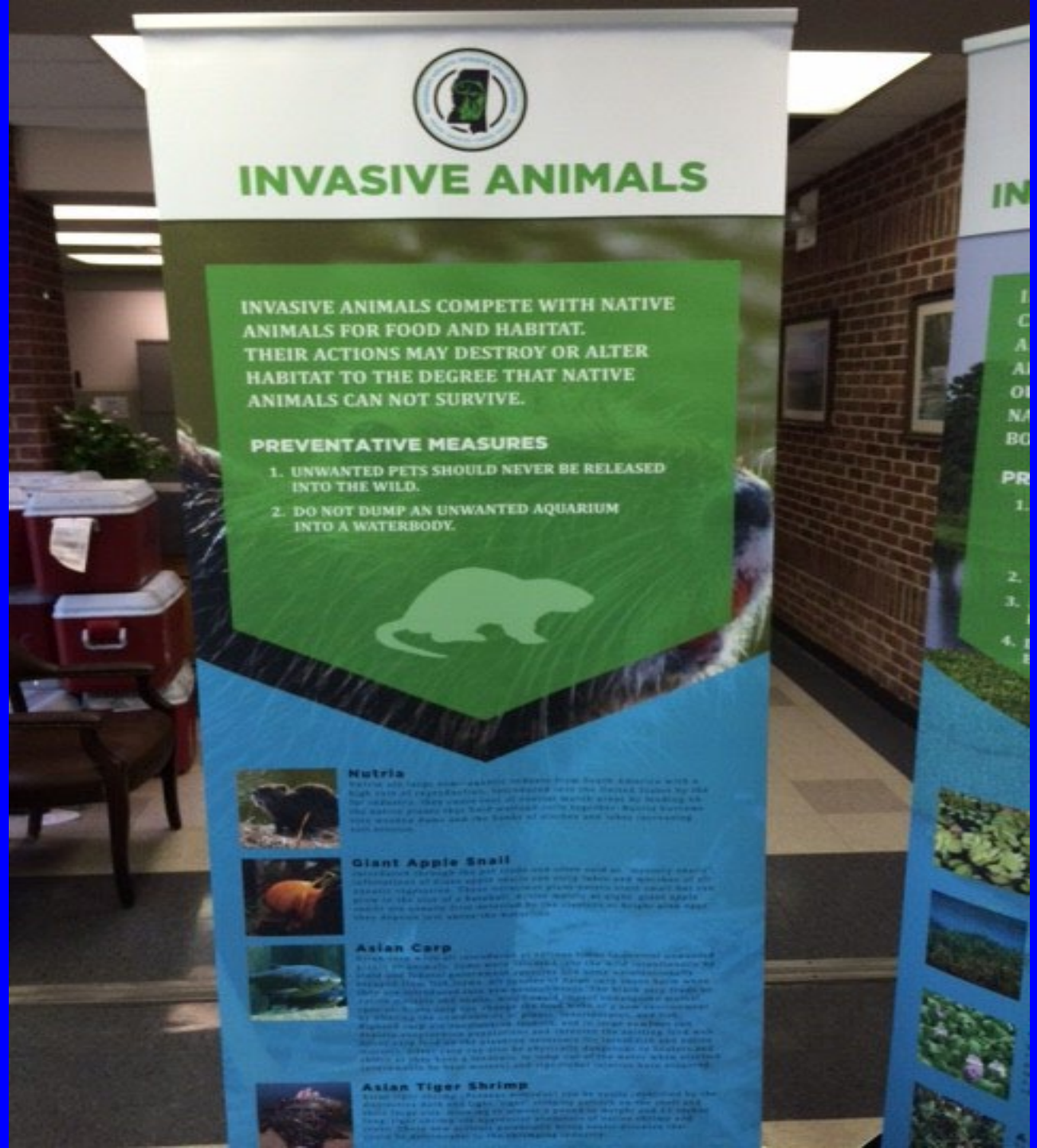
1. THOROUGHLY CLEAN YOUR BOAT AND TRAILER, AND ALLOW THEM TO COMPLETELY DRY, BEFORE MOVING FROM ONE WATERBODY TO ANOTHER - - REMEMBER CLEAN, DRAIN, DRY.
2. USE ONLY NATIVE PLANTS IN WATER GARDENS
3. DO NOT RELEASE ANY WATER GARDEN PLANTS INTO THE WILD.
4. DO NOT EMPTY YOUR AQUARIUM INTO THE WATER, EVEN IF ALL PLANTS HAVE BEEN REMOVED.

Giant Salvinia

Hydrilla

Water Hyacinth

Alligator Weed


INVASIVE ANIMALS
INVASIVE ANIMALS COMPETE WITH NATIVE ANIMALS FOR FOOD AND HABITAT. THEIR ACTIONS MAY DESTROY OR ALTER HABITAT TO THE DEGREE THAT NATIVE ANIMALS CAN NOT SURVIVE.
PREVENTATIVE MEASURES
1. UNWANTED PETS SHOULD NEVER BE RELEASED INTO THE WILD.
2. DO NOT DUMP AN UNWANTED AQUARIUM INTO A WATERBODY.
Nutria
Giant Apple Snail
Asian Carp
Asian Tiger Shrimp

INVASIVE LIONFISH

Please Report
All New Sightings
With Location

(228) 374-5000

REPORT.INVASIVE@DMR.MS.GOV

MISSISSIPPI AQUATIC INVASIVE SPECIES COUNCIL
PREVENT • ERADICATE • CONTROL • EDUCATE

INVASIVE ASIAN TIGER SHRIMP

Please Report All Sightings With Location

(228) 374-5000

REPORT.INVASIVE@DMR.MS.GOV

MISSISSIPPI AQUATIC INVASIVE SPECIES COUNCIL
PREVENT • ERADICATE • CONTROL • EDUCATE

WARNING

Northern Snakehead

Northern Snakeheads may be present in these waters. It shall be unlawful for any person or persons to have in their possession live Northern Snakeheads.

Any person or persons having these species in their possession shall immediately notify the Mississippi Department of Wildlife, Fisheries, and Parks of such possession by calling 601-432-2200.

If you catch this fish, DO NOT THROW IT BACK, DO NOT THROW IT ON LAND.

The Northern Snakehead can be confused with the native Bowfin.

Northern Snakehead

Invasive Species

Bowfin

Native Species

ATTENTION

Northern Snakehead

Invasive Species

Native Species

The Northern Snakehead is an invasive species that is native to China, Russia and Korea where it lives in shallow, slow moving and often low oxygenated waters. It can grow up to 47 inches and 15 pounds.

It shall be unlawful for any person or persons to have in their possession live Northern Snakeheads.

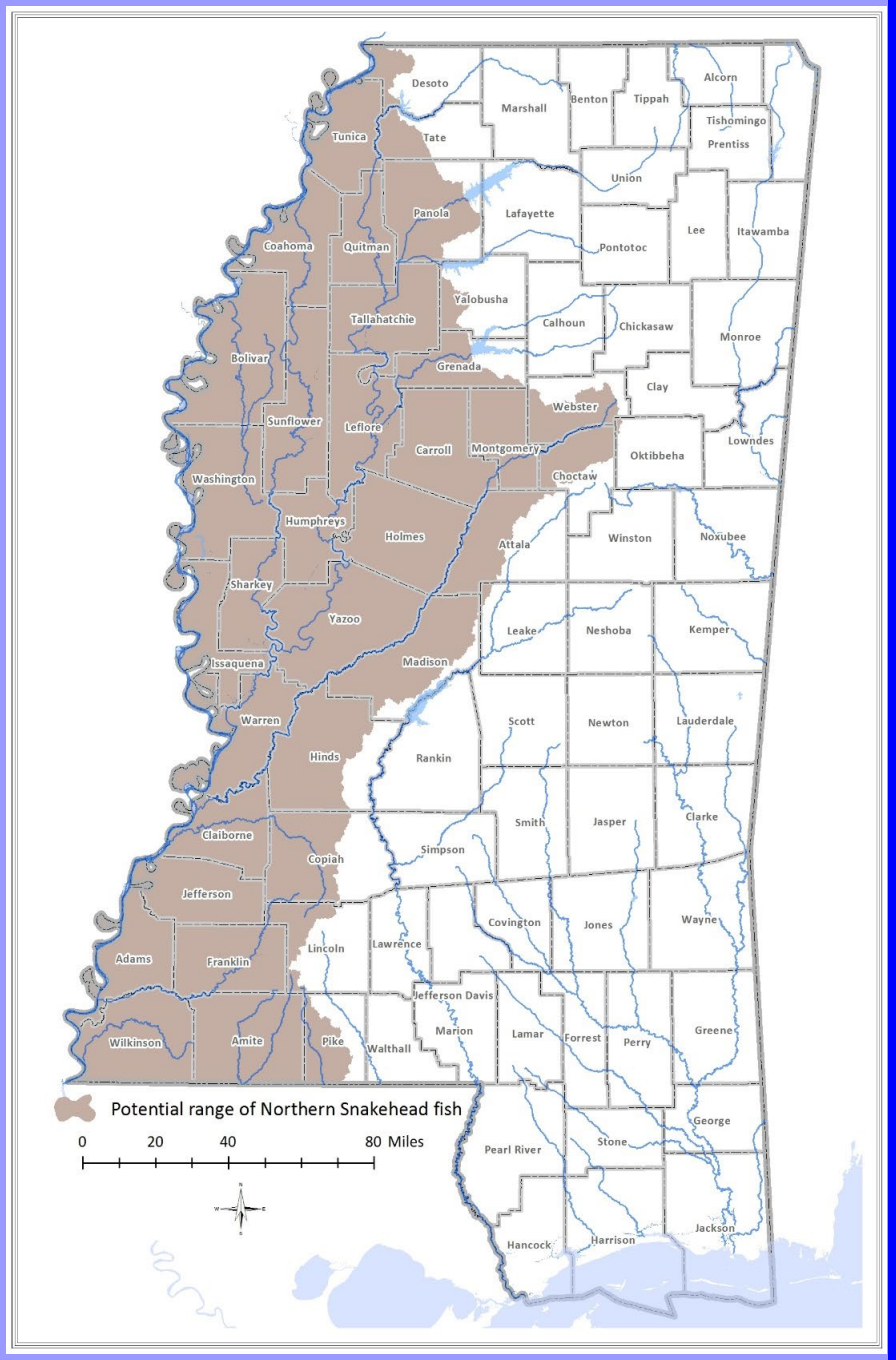
WHAT CAN YOU DO?

Learn to identify the Northern Snakehead. Do not confuse it with the bowfin, a species native to Mississippi (pictured above).

Any person or persons having Northern Snakeheads in their possession shall immediately notify the Mississippi Department of Wildlife, Fisheries and Parks of such possession by calling 601-432-2200.

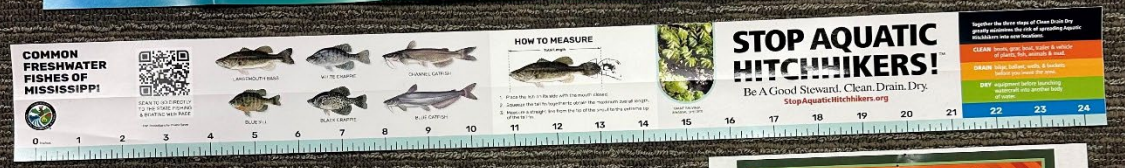
If you catch this fish, DO NOT THROW IT BACK, DO NOT THROW IT ON LAND.

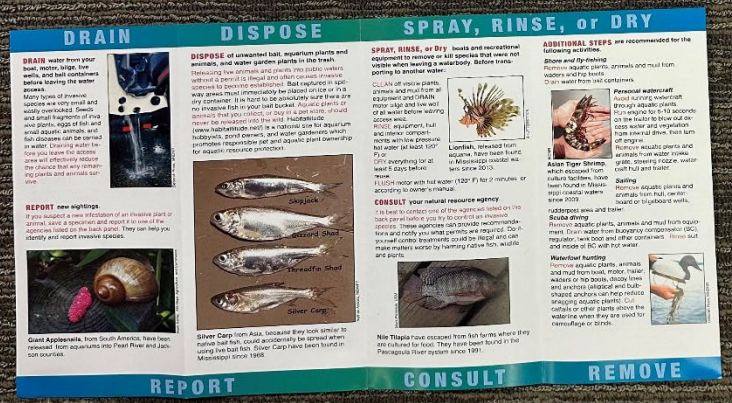
DO NOT release your aquarium pets or live food into the environment. **NEVER** dump live fish (such as bait buckets) from one body of water into another - this may introduce non-native species. **ALWAYS** drain water from your boat, live well, and bilge before leaving any water access.

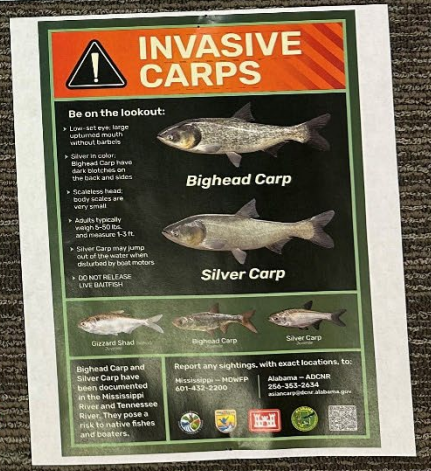


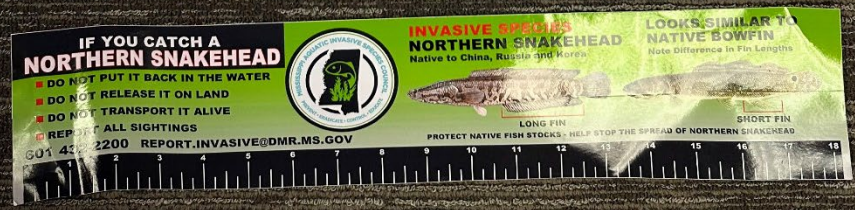

CONTACTS
HELP STOP
Aquatic Hitchhikers
in Mississippi
STOP AQUATIC
HITCHHIKERS!
www.StopAquaticHitchhikers.org
INSPECT
REMOVE


STOP AQUATIC
HITCHHIKERS!™


COMMON
FRESHWATER
FISHES OF
MISSISSIPPI
HOW TO MEASURE
STOP AQUATIC
HITCHHIKERS!
Be A Good Steward. Clean. Drain. Dry.
StopAquaticHitchhikers.org


DRAIN
DISPOSE
SPRAY, RINSE, or DRY
REPORT
CONSULT
REMOVE


INVASIVE
CARPS
Be on the lookout:
Bighead Carp
Silver Carp
Gizzard Shad
Bighead Carp
Silver Carp


IF YOU CATCH A
NORTHERN SNAKEHEAD
DO NOT PUT IT BACK IN THE WATER
DO NOT RELEASE IT ON LAND
DO NOT TRANSPORT IT ALIVE
REPORT ALL SIGHTINGS
REPORT.INVASIVE@DMR.MS.GOV
INVASIVE SPECIES
NORTHERN SNAKEHEAD
Native to China, Russia and Korea
LOOKS SIMILAR TO
NATIVE BOWFIN
Note Difference in Fin Lengths
LONG FIN
SHORT FIN
PROTECT NATIVE FISH STOCKS - HELP STOP THE SPREAD OF NORTHERN SNAKEHEAD