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North Carolina - Aquatic Invasive Species report to GSARP, October 2018

Department of Agriculture:

Beach Vitex (*Vitex rotundifolia*)

The Beach Vitex Eradication Taskforce worked very hard to control and eradicate this plant in from 2006 through 2009. They made a lot of progress on getting landowners, towns and cities to allow for the removal of the plant from dunes and shorelines in North and South Carolina. They had funding sources, and it was a very organized group. The NCDA was notified in the summer of 2018 that there was a large infestation of Beach Vitex in Morehead City. We made a site visit, and have talked to many of the neighbors as well as the town. The main infestation comes from one landowner who likes the vine, planted it on purpose, and does not desire to control it. It is a Class A noxious weed in NC, and we feel strongly that it needs to be removed. The original infestation has spread to approximately 4 other places along a ¼ mile stretch of the shoreline (intercoastal waterway). NCDA has identified all of the landowners, and sent them letters asking for permission to access their property for purposes of survey and control of the plant in early September. The treatment plan is to scratch the bark and paint on herbicide. We have received back several of the permission letters, but unfortunately Hurricane Florence hit just a few days after the letters were mailed. Morehead City was hit hard by the storm, and the NCDA Plant Pest Inspector involved with the project was also hit hard by the storm. As a result, we have stepped back from the project, and are unsure if we will make any treatment in the Fall of 2018, or if we will delay treatment until Spring of 2019. NCDA is committed to eradicating this plant wherever it is found.

Yellow Floating Heart (*Nymphoides peltada*)

2018 has been the year for Yellow Floating Heart! We were already managing several infestations of this plant across the state – but this year we have been made aware of at least 5 new infestations. One very small infestation in Cumberland County was reported to us by a concerned fisherman. It was only about 100 ft^2 in size when we made the first site visit. Before we could get the compliance agreement signed by the landowner, a tree fell down in the middle of the patch from Hurricane Florence. After the tree was removed, many of the leaves had floated to other parts of the lake. Herbicide treatment was made to the patch on September 27, 2018. NCDA Plant Pest Specialists will work with the rest of the lake association to ask for public reports of other plants if they start to germinate around the lake. The source of the infestation is likely from a large Koi Pond in the yard immediately uphill from the lake. That koi pond was also treated with herbicide to control any emerged vegetation.

Three farm ponds in Moore and Lee county have been reported to NCDA as being infested with YFH. They range from 2-3 acres in size, and have almost complete coverage of the plant. A Fall 2018 herbicide treatment is planned with help from NCSU, but that date has not been confirmed yet.

A third site was discovered by Duke Progress Energy in Lake James in Burke and McDowell County. The situation is complicated, but hand removal was attempted using volunteers on the lake. The result was minimally successful, with the volunteers encountering slow progress. An herbicide treatment is needed, but will not be done in Fall of 2018. Duke Energy has the ultimate say in management in this waterway, but NCDA will be monitoring progress.

A fourth site was discovered in Macon County at a commercial nursery specializing in aquatic plants. The owner was made aware that it is illegal to possess the plants, even if they are not selling them to the public. An eradication plan was made, and progress will be monitored by the NCDA Plant Pest Inspector in that county.

Giant Salvinia (*Salvinia molesta*)
I make mention of Giant Salvinia because it was discovered in the Santee Cooper watershed in the Fall of 2017. An estimated 100 acres is covered in the Federal Noxious weed. NC has not yet found this plant in any waterways, but the likelihood is increased due to the proximity (100 miles) from this lake. Education and outreach efforts now always involve a mention about the plant, and how to clean and inspect your boat before moving from one waterbody to another.

Aquatic Weed Control Program:

Projects for 2018:
The 2018 work plan for the Aquatic Weed Control Program includes ~60 projects across the state. Total available funding is $500,000 (FY 2017-2018). All projects require cost-share at a 1:1 match.

Staffing:
Two FTE positions with 100% aquatic weed program duties. Two temporary employees were hired to assist with field operations (June – Oct).

Lake Waccamaw:
Lake Waccamaw is one of only a handful of natural lakes in North Carolina, with around 9,000-acres of water. 2018 marked the 6th consecutive year of large-scale herbicide treatment. The lake was treated with fluridone for all years. Hydrilla growth has been completely suppressed by the treatments and there is no evidence that new tuber production has occurred since treatment began. An intensive soil sampling effort was performed in the spring of 2017 to determine the presence and density of tubers. A total of 2,755 sediment cores were processed. Two cores each contained a single tuber. That survey led to a decreased target area in 2018, and therefore less fluridone was applied relative to the previous annual treatments (2013-2017).

Eno River:
A large section of the river (~16 miles) was treated with fluridone in 2015 and 2016 to control Hydrilla. The treatment was expanded to ~22 miles in 2017 and a repeat of that treatment occurred in 2018. The project was initially slated as a two-year pilot project with the objective being to demonstrate the effectiveness of an herbicide treatment (fluridone) as a method of controlling Hydrilla in a riverine system. Two injector units were deployed along the river. The units metered herbicide into the water and were operated remotely. The 2018 treatment spanned from June 30 – August 15 (46 days). Four consecutive years of treatment has resulted with

significant control of Hydrilla growth with minimal to no impact to non-target plant and animal species.
The project is managed by the Eno River Hydrilla Management Task Force (ERHMTF), a partnership of local state and federal government agencies, academia and non-profit organizations.
A central location for information regarding this project has been developed on the NC Invasive Plant Council website, see http://nc-ipc.weebly.com/eno-river-hydrilla-project.html

Lake Norman:
One of Charlotte's playgrounds and significant economic element to the area, Lake Norman is experiencing it second round with Hydrilla. The first time Hydrilla infested the lake was 2002. An aggressive grass carp release quickly reversed Hydrilla and by 2004 complete suppression was realized. No reports of Hydrilla in Lake Norman were made from 2004-2016. In 2017 Hydrilla showed up in a different part of the lake (this is a new introduction, not a resurgence). Duke Energy conducted a quick survey in the fall of 2017 and estimated ~500 acres of Hydrilla, isolated to one area of the lake. In the spring of 2018 a release of 10,200 grass carp occurred. Not surprisingly the epicenter of this new outbreak is a high-volume public boat access area. As of September 2018 Hydrilla is impacting multiple marinas and creating a fair amount of anxiety within the community.

Wildlife Resources Commission:

Mystery Snails:
Mystery snails were documented at Lock & Dam 1 on the Cape Fear River in May 15. This is the first record in a mainstem river in that basin. They were collected by NC Wildlife Resources Commission biologists during other surveys.

Florida Gar:
A Florida Gar was captured by an angler in the Cape Fear River near Lillington, NC in July 2018. Florida Gar's natural range extends from the Savannah River, SC, south through peninsular Florida, and north and west to the Ochlockonee River, GA. Biologists with the South Carolina Department of Natural Resources have not observed any northward movement of Florida Gar in South Carolina rivers, suggesting the Cape Fear River specimen is the result of unintentional/illegal release.

Hydrilla:
Hydrilla was documented in the Deep River (Cape Fear basin) by researchers from Dr. Rob Richardson's lab at NC State University. Significant amounts of hydrilla were documented in the reach from the Hwy 22 crossing to the crossing at N. Plank Rd. near Gulf, NC. This reach contained dense monolithic beds of hydrilla in excess of 90 surface acres. Downstream of the confluence of the Deep River and Rocky River near Moncure, NC, 8 stems of hydrilla were located within a 3.5 mile section of river.

Division of Marine Fisheries:

Tiger Shrimp:
In 2017, there were zero reports of tiger shrimp. This may be due to fishermen being complacent to seeing a few tiger shrimp in their catches. It appears tiger shrimp are abundant this year in North Carolina. Reports of tiger shrimp are beginning to come in for the 2018 season and already three individual fishermen have reported tiger shrimp in catches. One fishermen brought four shrimp in to DMF staff and said he caught at least 10 tiger shrimp so far this year.

In 2012, tiger shrimp was added as a code in our state trip ticket program. Since then annual landings have ranged between 5 to 25lbs, valuing between $20 to $145. There is limited commercial fishermen participation in landings.

Catfish:
Blue Catfish ranges in North Carolina has been expanding over the years and the commercial landings have been increasing. Blue catfish have been caught across all of Albemarle Sound and its tributaries, and are expanding into the Pamlico Sound region. Commercial fishermen have been actively fishing the large numbers of blue catfish, especially in the Chowan River. The North Carolina Wildlife Federation is concerned with expansion in North Carolina, especially into the lower Pamlico and Neuse rivers. The Wildlife Federation is looking at ways to expand commercial fishing for the catfish in that region. The NC Division of Marine Fisheries has partnered with SeaGrant and NC Wildlife Resource Commission in monitoring blue catfish in the state.

Flathead Catfish appear to be moving upstream in several watersheds in the Tar River and Neuse River basins and are the likely cause for the decline of the Carolina Madtom. Recent analysis shows that the Carolina Madtom is below detectability levels in areas with known Flathead Catfish populations. Intensive surveys and management actions, including Flathead Catfish removal, may be needed in the very near future to prevent Carolina Madtoms from going extinct. The US Fish and Wildlife Service Sport Fish Restoration Grant has funded a non-native catfish project in the Cape Fear which will begin in 2017. This study will look at habitat and prey selection of flathead catfish.

A Redtail Catfish was caught in the Chowan River by a commercial fisherman. The individual weighed over 40lbs. This was likely an isolated incidence which escaped or was released from captivity.

US Fish and Wildlife Service:

Nutria:
While updating species fact sheets in the state ANS plan USFWS noted that sightings of nutria in the NAS Database appear to be significantly incomplete. Recent sightings include several in the Neuse River Basin near the old Milburnie Dam in Wake County and the Black River/Sampson County by staff. They are working on adding sightings to the database as nutria are far more widespread than the mapping would lead one to believe.

Coastal Federation:

Phragmites:
Discussion and meetings have begun to place more interest and energy into phragmite mapping and control. An action plan was developed in an effort to enhance, promote, and restore living shorelines. A workshop will be held in 2019 on Restoring America's Estuaries. Potential sites

for a field component of that workshop include Pivers Island, Carrot Island, Jones Island, Private Shorelines, Community College, and Sandbar Oyster Company.

State ANS Plan:

The North Carolina Aquatic Nuisance Species Management Plan was drafted in 2014-2015. The Plan was signed by NC Department of Environmental Quality, NC Wildlife Resources Commission, and NC Department of Agriculture in February of 2016. At the time, there was no plan for submission to the national ANS Task Force review/approval. With a new administration, conversation has been renewed on the status of the ANS Plan. The group that authored the plan (steering committee) reconvened in July. The document is being reviewed/edited. No major changes to the outline or spirit of the document are anticipated. The group intends to gain support from state agencies and ultimately have the Governor submit it to ANSTF.

End of report- compiled by Corrin Flora 10/11/18