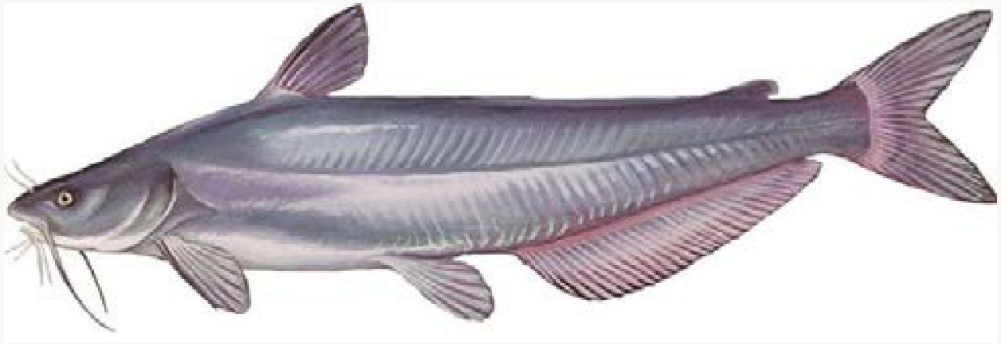
NC Aquatic Nuisance Species Management Plan

Rob Emens

Nov. 2, 2017



2017 APNEP Ecosystem Symposium
NCSU McKimmon Center

Why should we have ANS plan?

1. ANS are problematic
   Negative impacts to economy and environment

2. NC has a lot of water resources

3. Inter-agency communication and coordination needs to be improved
   Responsibility and jurisdiction is piecemealed across multiple agencies. NC lacks legislation that bridges invasive species statutes

4. Federal funding is available to states with approved plans

Water Resources in NC

- **Square Miles of Albemarle-Pamlico sound system:**
  3,000+
- **Total Square Miles of Water (inland and coastal):**
  5,201
- **Reservoirs 250+ acres with public access:**
  60
- **Registered Boats in NC** (14’ or longer)**:**
  371,879
- **WRC managed boating access areas:**
  229

ANS Task Force

Dedicated to the prevention and control of aquatic nuisance species

Composed of 13 Federal and 15 ex-officio members

Co-chaired by: U.S. F&W Service and NOAA

Established by Congress with the passage of:

- Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA) in 1990
- National Invasive Species Act (NISA) in 1996

Gained additional support by:

- Executive Order 13112 “Invasive Species” (1999)
- Executive Order 13751 “Invasive Species” (2016)
  - Amended previous order

Works in conjunction with Regional ANS Panels

The ANS Task Force encourages state and interstate planning entities to develop management plans.

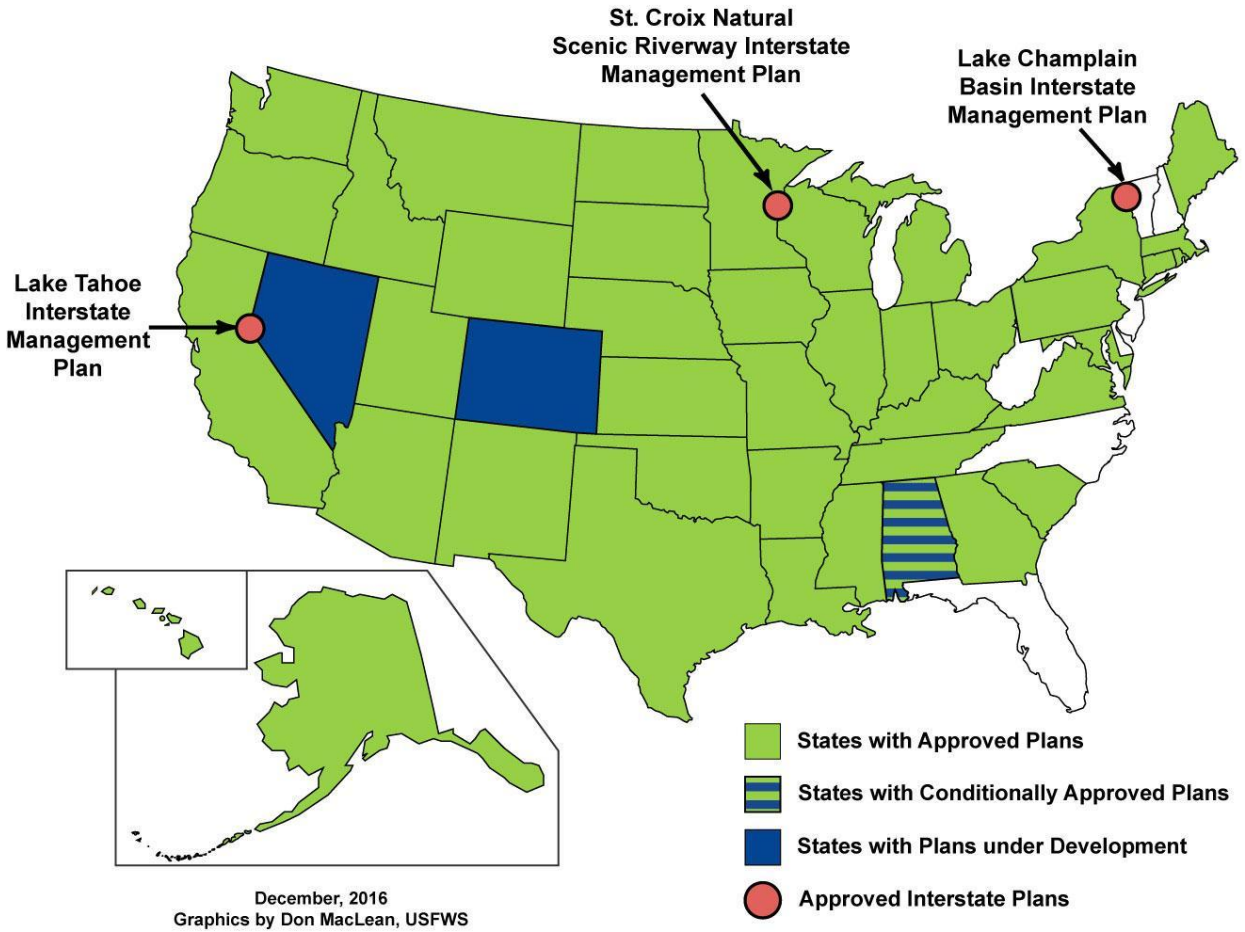
Management plans need to include:

- Detection and monitoring efforts
- Prevention efforts to stop their introduction and spread
- Control efforts to reduce their impacts

Management plan approval by the ANS Task Force is required to obtain **funding** under Section 1204 of the Aquatic Nuisance Species Prevention and Control Act

Status of State ANS Management Plans

(43 Approved Plans - 40 State, and 3 Interstate)



~ $46,500

The making of the plan

- 2009-2014
  - DWR, WRC, DMF, NC Sea Grant staff actively promoting the notion that a state-wide ANS management plan is needed
  - Big hurdle was finding staff who possessed the subject knowledge and had enough time to draft the plan
  - Idea of contracting writers was explored
- 2014
  - DENR Special Assistant to Secretary tasked the Office of Land & Water Stewardship with facilitating the process of creating a plan
  - Formation of the steering committee (1st meeting July-11)
  - Drafting components of plan
- 2015
  - Draft plan reviewed by subject experts
  - Layout refined and graphics inserted
  - Public review/comment period
  - Draft plan sent to ANS Task Force for preliminary review
- 2016
  - Plan acquires approval signatures from DENR Secretary, WRC Executive Director and DA&CS Plant Industry Division Director.

Components of the plan

Executive Summary

- The purpose of the ANS plan is to improve the state's ability to address aquatic invasive and aquatic nuisance species with the goal of preventing and controlling their introduction, spread, and negative impacts.
- Summarizes the sections of the plan

Introduction

- Purpose, Scope, and Development
- ANS Vectors and Impacts
- Interactions with other plans

Defined AIS and ANS

Aquatic Invasive Species

Aquatic organisms that are **likely to cause negative** ecological and/or economic impacts when moved outside of their range

Aquatic Nuisance Species

Aquatic invasive organisms that have been introduced and **are causing** ecological and/or economic harm

Ranked/prioritized ANS

Steering committee ranked each using this criteria:

- Ecological Impacts
- Current Distribution and Status
- Trend in Distribution and Abundance
- Management Difficulty
- Economic Impact

Top 10

1. Hydrilla
2. Lionfish
3. Red Lionfish
4. Yellow Floating Heart
5. Phragmites
6. Rusty Crayfish
7. Red Swamp Crayfish
8. Alligatorweed
9. Virile Crayfish
10. Blue Catfish

Identified and Compiled agency jurisdictions and responsibilities

State Agencies

- DEQ (Division of Water Resources and Division of Marine Fisheries)
- WRC
- DA&CS

Federal Agencies

- US Fish and Wildlife Service
- US Department of Agriculture
- US Coast Guard
- National Marine Fisheries Service

Described objectives

Primary Objectives

1. Increase coordination
2. Education
3. Identify gaps in legislation and inconsistencies in regulations
4. Seek funding
5. Monitor occurrence and spread
6. Manage AIS/ANS
7. Research

Laid out actions and implementation tables/timeline

- Specific actions were identified to meet the primary objectives. (1A, 1B, 1C, 2A, 2B, etc.)
  - Example: 2A, Develop interagency plan for outreach

- Each action was assigned a lead agency, funding source, priority (low, med, high) and a timeline.

Objective 2: Educate the public and private stakeholders on ANS.

Tactic	Description	Lead Agency	Cooperators	Funding Sources	Priority Level	Planned Effort			
						FY16	FY17	FY18	FY19
2A	Develop interagency plan for outreach	ANSTF	TBD	Internal and external	HIGH	X			
2B	Develop and maintain ANS plan webpage	NCDEQ	NCDA&CS and NCWRC	Internal	Medium	X			
2C	Develop electronic information sharing process and database	NCANSTF	TBD		Medium	X	X	X	X
2D	Cultivate additional partnerships	ANSTF	TBD	Internal and external	Medium	X			

Invasive Species Profiles (fact-sheets)

Giant Salvinia
(Salvinia molesta)

Taxa Group: Plant

Size: 2-3 inches long.

Distinctive Physical Characteristics: Floating fern. An identifying feature on the leaves is the presence of egg-beater shaped leaf hairs on the upper surface of each leaf. Located beneath the green floating leaves are dark brown feathery appendages resembling roots that are actually modified leaves.

Habitat: Found in still water (drainage ditches, canals, ponds and lakes).

Native Range: Brazil and Argentina.

NC History: Introduced circa 1998 as a contaminant in a water garden plant shipment. Eradicated from the state in 2009.

Current NC Distribution: None known.

Pathway of Introduction: Water garden trade.

Management and Control: Herbicides.

Golf Course Pond Covered in Giant Salvinia, New Hanover county, NC. Circa 2000. (Steve Hoyle)

Giant Salvinia. (© Bridget Lassiter)

Impacts and Uses of Giant Salvinia in NC

Ecological: An extremely invasive plant and Federally Listed as a "noxious aquatic weed." Alters habitat. A free-floating fern, giant salvinia can double its biomass in ~10 days and can form thick (>3 feet) floating mats. Prevents atmospheric oxygen from entering water.

Economic: Impedes boat navigation and recreation activities. Blocks movement of water which may lead to flooding.

Human Health or Human Use: Leads to stagnant water and increased mosquito breeding area.

Egg-beater Shaped Hairs on Leaves of Giant Salvinia. (© Bridget Lassiter)

Nutria
(Myocastor coypus)

Taxa Group: Mammal

Size: Adults are typically 10–20 pounds in weight, and 16–24 inches in body length. Tail is 12–18 inches.

Distinctive Physical Characteristics: Large rodent, resembling beavers and muskrats. The Nutria has a long, thin round tail which distinguishes it from the beaver which has a flat tail and the muskrat which has a laterally flattened tail. They have coarse, darkish brown outer fur with soft dense grey under fur, also called the nutria. Orange-yellow incisors are also distinctive.

Habitat: Semi-aquatic. Rivers, streams and wetlands.

Native Range: South America

NC History: Nutria were originally introduced into the U.S. in Louisiana for fur farming in the 1938. They were stocked in other states and had become established in North Carolina by the 1970s.

Current NC Distribution: Known populations in Bertie, Dare, Hyde, and Washington counties. Likely also occurs in many other coastal counties.

Pathway of Introduction: Human introduction and natural expansion.

Management and Control: In addition to education and awareness programs to reduce their spread, Nutria are controlled by hunting and trapping. Nutria may be hunted year-round with a hunting license. Nutria may be trapped year-round East of I-77 with a trapping license. In both cases there is no closed season and no bag limit. Nutria may also be taken with a depredation permit.

Nutria (© 2014 Encyclopaedia Britannica, Inc)

Impacts and Uses of Nutria

Ecological: Nutria are opportunistic feeders and eat approximately 25% of their body weight daily. Most damage is from feeding or burrowing. At high densities and under certain conditions, foraging Nutria can significantly impact natural plant communities. They compete with native muskrats.

Economic: Nutria sometimes burrow into the styrofoam flotation under boat docks and wharves, causing these structures to lean and sink. They may burrow under buildings, which may lead to uneven settling or failure of the foundations. Burrows can weaken roadbeds, stream banks, dams, and dikes, which may collapse.

Human Health and Human Use: Mainly fur pelts, although the use of nutria meat is being promoted.

Sources:

http://nas.er.usgs.gov/queries/FactSheet.aspx?speciesID=1089

www.ces.ncsu.edu/nreos/wild/pdf/wildlife/nutria.pdf

http://www.basic.ncsu.edu/ncgap/sppreport/amafk01010.html

Nutria showing white muzzle and orange incisors. (©Moment in der Natur; www.vorbusch.de)

Department of Environmental Quality

Introduction to the NC Aquatic Nuisance Species Management Plan

Rob Emens

Aquatic Weed Control Program

Division of Water Resources

(919) 707-9012

rob.emens@ncdenr.gov