



# Fish Management in Ponds

*August 28, 2023*

Danci Guiot  
District 5 Fish Bio. I

Seth Mycko  
District 5 Fish Bio. II



### Regional Supervisors

Coastal Region: Districts 1,2,4

Ben Ricks - 252-229-0170 (Office) 252-229-0170 (Cell)

Piedmont Region: Districts 3,5,6

Lawrence Dorsey- 336-290-0050 (Office) 704-984-0600 (Cell)

Mountain Region: Districts 7,8,9

Doug Besler - 828-803-6032 (Office) 828-674-3278 (Cell)

# District Fisheries Biologists II and I

## District 7

New Roanoke Yadkin-Pee Dee

**Fish Bio II - Kin Hodges**

Office: 828-234-5853  
Cell: 828-234-5853

**Fish Bio I - TJ Johnson**

Office: 919-609-1694  
Cell: 919-609-1694

## District 5

Cape Fear Neuse Roanoke

**Fish Bio II - Seth Mycko**

Office: 336-290-0053  
Cell: 336-534-0019

**Fish Bio I - Danci Guoit**

Office: 336-290-0055  
Cell: 743-209-1134

## District 3

Chowan Neuse Roanoke Tar-Pamlico

**Fish Bio II - Kirk Rundle**

Office: 252-903-7744  
Cell: 252-903-7744

**Fish Bio I - David Belkoski**

Office: 910-580-2288  
Cell: 910-580-2288

## District 1

Chowan Pasquotank Roanoke Tar-Pamlico

**Fish Bio II - Chris Smith**

Office: 252-333-4709  
Cell: 252-333-4709

**Fish Bio I - Deon Kerr**

Office: 252-548-4933  
Cell: 252-548-4933

## District 8

Broad Catawba French Broad Watauga

**Fish Bio II - David Goodfred**

Office: 828-803-6034  
Cell: 828-527-5779

**Fish Bio I - Vacant**

Contact David Goodfred or  
Doug Besler

## District 9

French Broad Hiwassee Little Tennessee

**Fish Bio II - Powell Wheeler**

Office: 828-558-6013  
Cell: 828-230-8739

**Fish Bio I - Amanda Bushon**

Office: 828-558-6017  
Cell: 828-550-1464

## District 6

Cape Fear Catawba Yadkin-Pee Dee

**Fish Bio II - Casey Joubert**

Office: 910-729-0872  
Cell: 910-729-0872

**Fish Bio I - Troy Thompson**

Office: 910-439-2006  
Cell: 704-465-4864

## District 4

Cape Fear Lumber

**Fish Bio II - Kyle Rachels**

Office: 252-548-4938  
Cell: 252-548-4938

**Fish Bio I - April Boggs**

Office: 919-309-0683  
Cell: 919-309-0683

## District 2

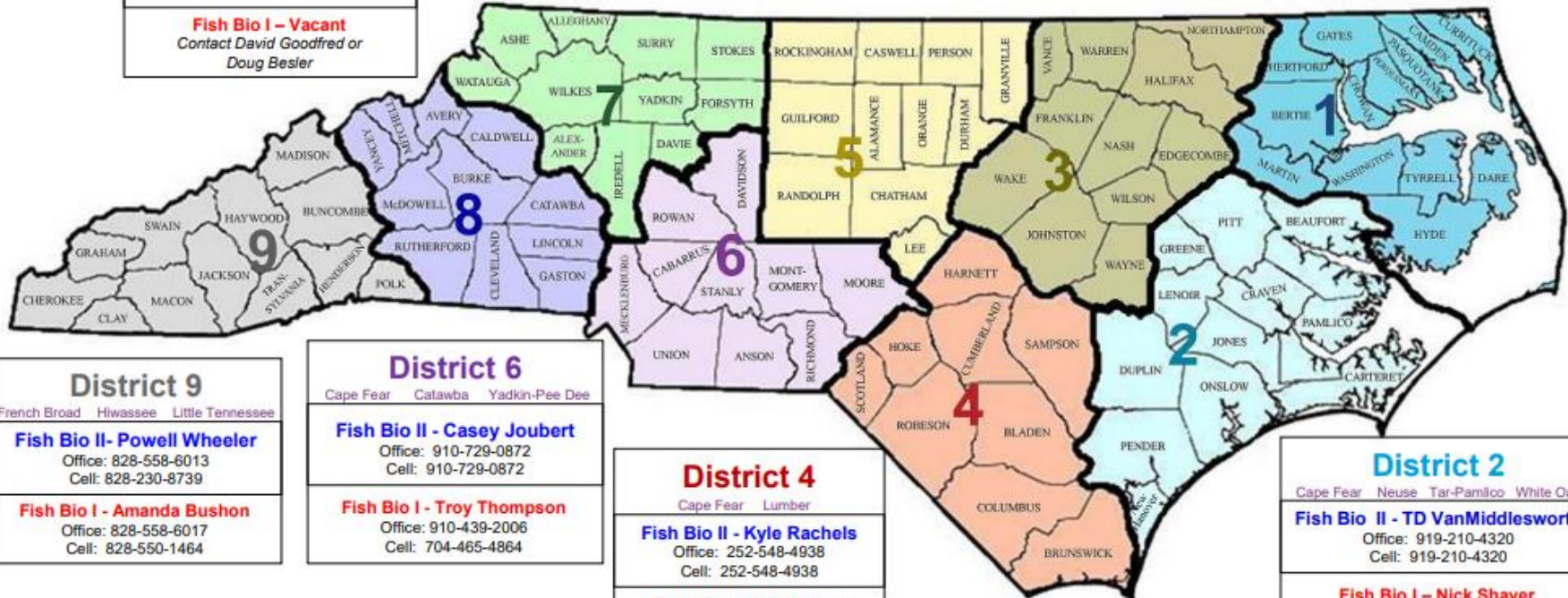
Cape Fear Neuse Tar-Pamlico White Oak

**Fish Bio II - TD VanMiddlesworth**

Office: 919-210-4320  
Cell: 919-210-4320

**Fish Bio I - Nick Shaver**

Office: 828-442-8799  
Cell: 828-442-8799



Updated: 6/6/2023

Marine Fisheries – 1-800-682-2632





# OVERVIEW

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- Pond goals
- Stocking permits
- Desirable species
- Stocking rates
- Harvesting fish
- Grass Carp
- Habitat
- Fish kills



# What are your fish goals for the pond?

- Do you want to catch
  - Big fish
  - Lots of fish
  - A certain species
- How much effort and/or money
  - Supplemental feeding
  - Fertilizing



# Fish Stocking Permit

## You need to apply for a permit IF:

Your pond has an inflowing or outflowing stream (your pond is not truly private)

1. Discuss options with your district biologist
2. Complete application and return to biologist

<https://www.ncwildlife.org/Fishing/Hatcheries-Stocking/Stocking-Permits>

3. Purchase and stock fish

Date Received: \_\_\_\_\_ Permit No: \_\_\_\_\_

### NORTH CAROLINA WILDLIFE RESOURCES COMMISSION DIVISION OF INLAND FISHERIES

#### Application to Stock Fish in Inland Fishing Waters of North Carolina

Pursuant with 15NCAC 10C.0209(b), any person, firm, or corporation wanting to stock any fish, mollusk, or crustacean in Inland Fishing Waters of North Carolina must first obtain a permit from the North Carolina Wildlife Resources Commission.

Name of Applicant \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_  
Email Address \_\_\_\_\_

Species to be stocked \_\_\_\_\_  
Water body to be stocked \_\_\_\_\_ County \_\_\_\_\_  
Identify specific stocking location(s) Provide as detailed a description as possible. Attach additional pages as necessary.

Purpose for stocking \_\_\_\_\_

Will this be a one-time stocking event? \_\_\_\_\_

If no, specify the frequency of stocking (monthly, annual, etc.) \_\_\_\_\_

Number to be stocked (specify number per stocking event / total per year) \_\_\_\_\_

Size of fish to be stocked (check appropriate size) \_\_\_\_\_ fry \_\_\_\_\_ juvenile \_\_\_\_\_ adult

Specify month(s) during which the stocking will occur \_\_\_\_\_

Identify the specific source of the fish to be stocked  
(name of water body or commercial aquaculture facility) \_\_\_\_\_

If the fish will be provided and/or stocked by a third party, provide contact information.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_  
Email Address \_\_\_\_\_

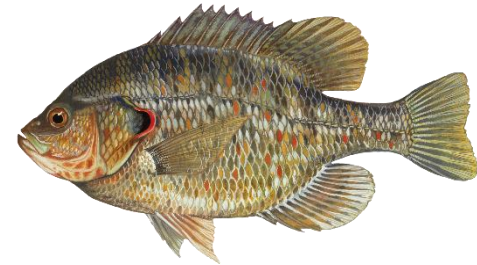
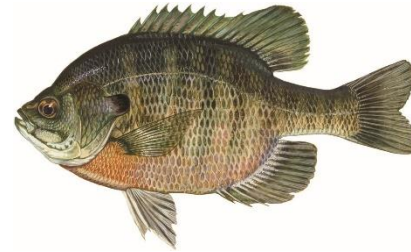
To the best of my knowledge, the information provided on this application is true and complete. I also understand that additional information may be requested in order to fully evaluate my request.

Signed \_\_\_\_\_ Date \_\_\_\_\_





# Desired Fish Species in Ponds



# Optional Fish Species in Ponds



# New Pond Stocking Rates

*Option 1: Largemouth Bass and Sunfish Fingerlings in a 1-to-10 Ratio.*

Fingerlings	Species	Number Per Acre		Size (inches)	When Stocked
		Fertilized	Unfertilized		
	Bluegill	700	350	1 to 2	Oct. to Nov.
	Redear sunfish	300	150	1 to 2	Oct. to Nov.
	Channel catfish	100	50	2 to 4	Oct. to Nov.
	Largemouth bass	100	50	2 to 4	The following June (after sunfish)

*Option 2: Largemouth Bass and Sunfish Adults.*

Adults	Species	Number Per Acre	Size (inches)	When Stocked
	Bluegill	70	3 to 5	April
	Redear sunfish	30	3 to 5	April
	Largemouth bass	20	8 to 14	April

# Alternative Pond Stocking Rates

*Option 3: Sunfish Adults and Largemouth Bass Fingerlings.*

<b>Species</b>	<b>Number Per Acre</b>	<b>Size (inches)</b>	<b>When Stocked</b>
Bluegill	60	3 to 5	April
Redear sunfish	15	3 to 5	April
Largemouth bass	100	2 to 4	June

*Option 4: Channel Catfish and Hybrid Sunfish Fingerlings.*

<b>Species</b>	<b>Number Per Acre</b>	<b>Size (inches)</b>	<b>When Stocked</b>
Channel catfish	100	2 to 4	June or July
Hybrid sunfish	300	1 to 2	June or July



# Stocking an Existing Pond

- Same permitting process for stocking as a new pond
- Assess current fish population
  - Catch/harvest log
- Consult biologist for recommended stocking rates based on existing population
  - WRC no longer makes site visits for private waters



# Harvesting Fish

## TWELVE MONTH CATCH RECORD

- Keep a harvest log
- Spread harvest through the year

STARTING: \_\_\_\_\_

ENDING: \_\_\_\_\_

ACREAGE OF POND: \_\_\_\_\_

LARGEMOUTH BASS HARVEST GOAL: \_\_\_\_\_

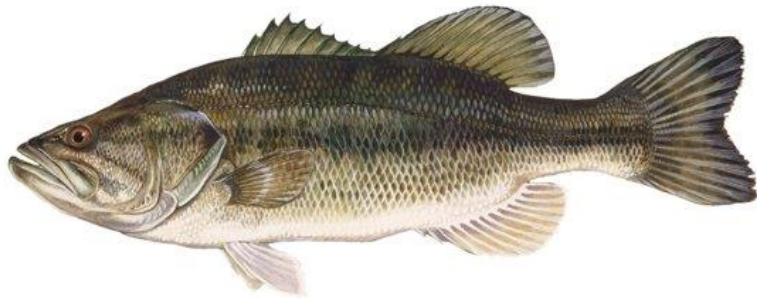
NUMBER OF BASS HARVESTED: \_\_\_\_\_ POUNDS OF BASS HARVESTED: \_\_\_\_\_

BREAM HARVEST SHOULD NOT EXCEED: \_\_\_\_\_

NUMBER OF BREAM HARVESTED: \_\_\_\_\_ POUNDS OF BREAM HARVESTED: \_\_\_\_\_

Date	Number Bass	Pounds Bass	Number Bream	Pounds Bream	Number Other	Pounds Other	Comments

# Annual Recommended Harvest Rates



Unfertilized: 10-15 lbs/acre  
Fertilized: 25-30 lbs/acre  
\* Avoid harvest until 12-14 inches long



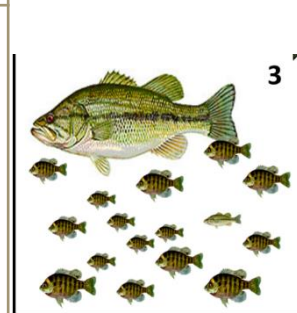
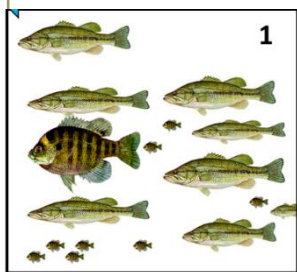
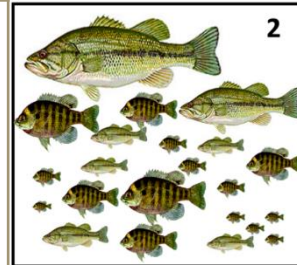
Unfertilized: Under 70 lbs/acre  
Fertilized: Under 145 lbs/acre



Harvested at will because  
population is maintained by  
stockings

# Balanced Pond

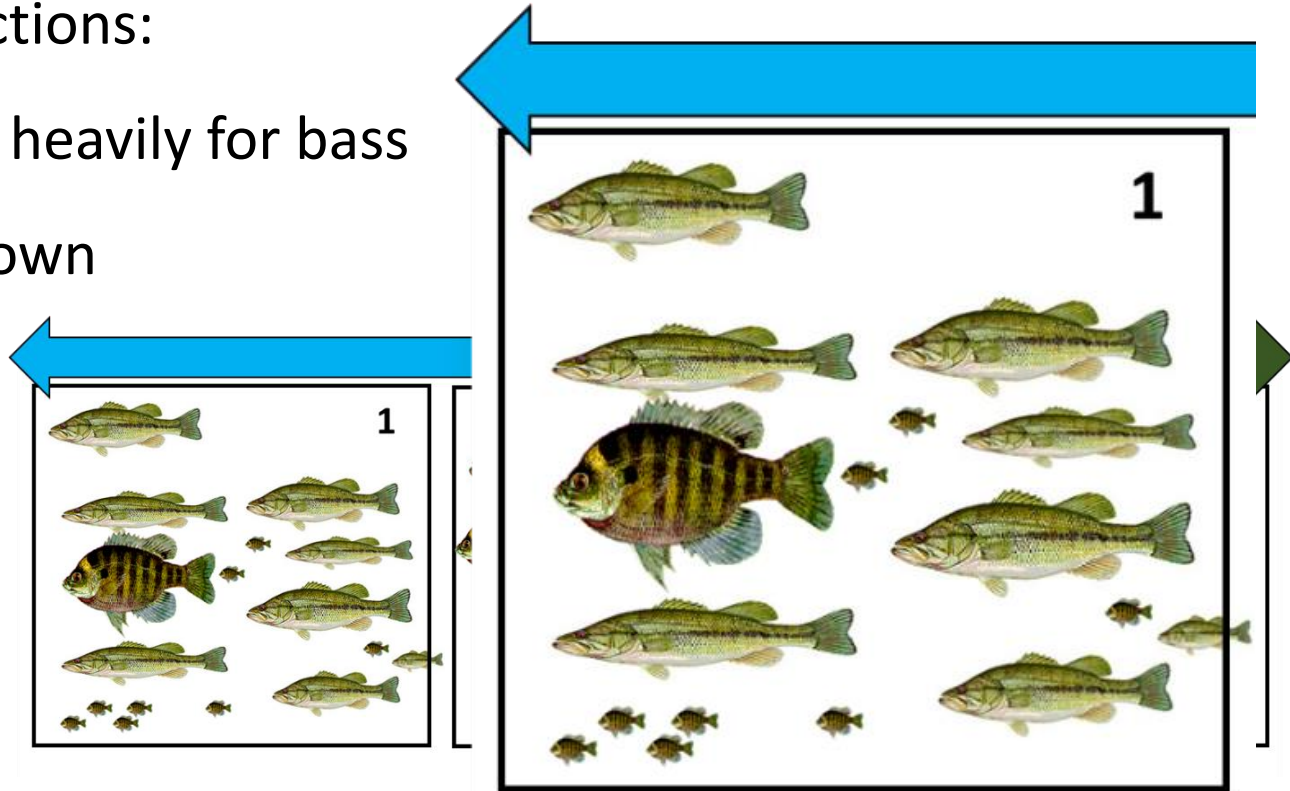
Harvest Data	Population Condition
<p>Bluegill 6 inches and larger. Bass average 1-2 pounds, with some smaller and larger.</p>	<p>Balanced population.</p>
<p>Bluegill average more than 1/3 pound. Bass average less than 1 pound, in poor condition (skinny).</p>	<p>Unbalanced – overcrowded bass. ** may be desired to grow trophy bluegill</p>
<p>Bluegill only 3-5 inches long. Very few bass and those caught are more than 2 pounds.</p>	<p>Unbalanced – overcrowded and stunted bluegill. ** may be desired to grow trophy bass</p>



# Bass Crowded

## Management Actions:

- Fish & harvest heavily for bass
- Winter drawdown
- Feed sunfish
- Fertilize



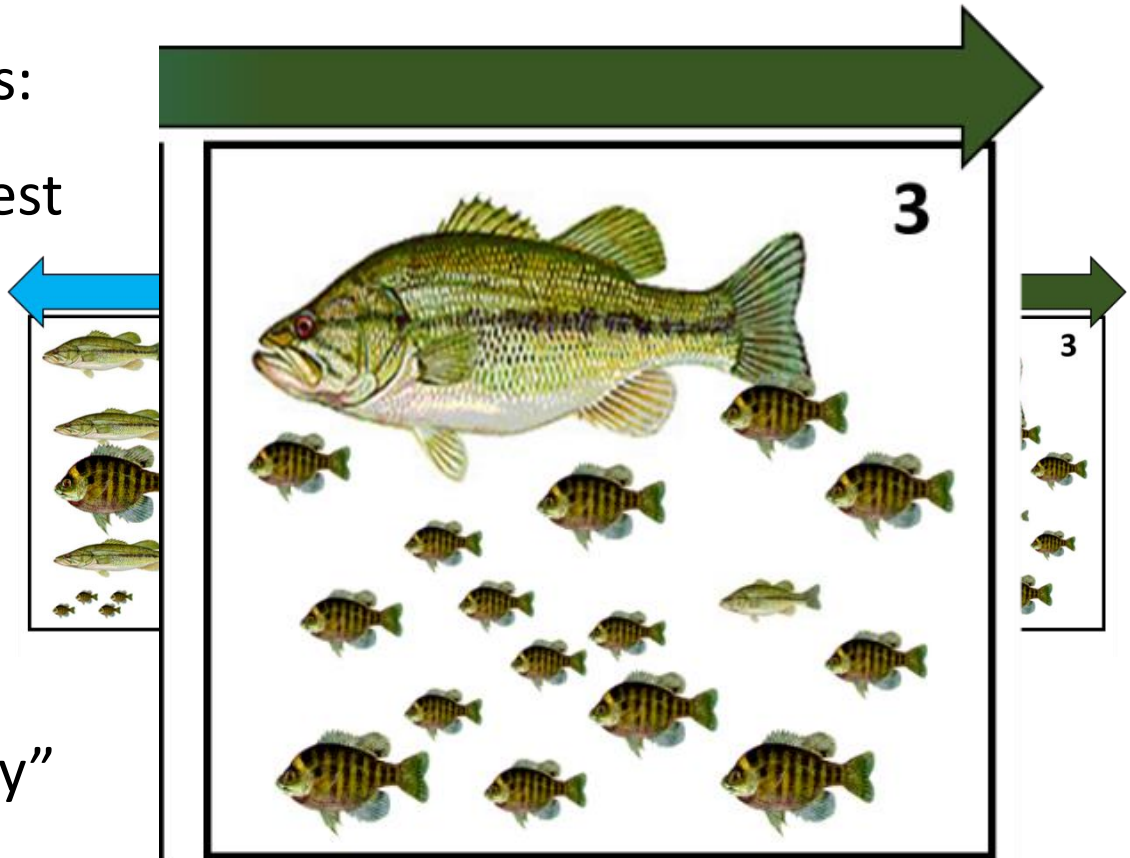


# Sunfish Crowded

## Management Actions:

- Suspend bass harvest
- Stock more bass
- Feed sunfish
- Fertilize

- \* most “kid friendly”
- \* trophy bass potential





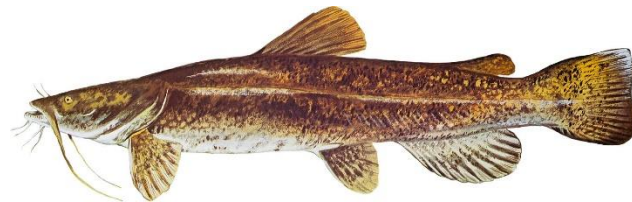
# Undesirable Fish Species in Ponds



Black Crappie



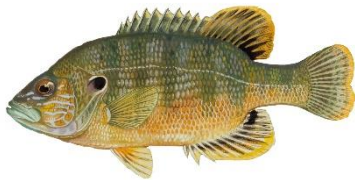
White Crappie



Flathead Catfish



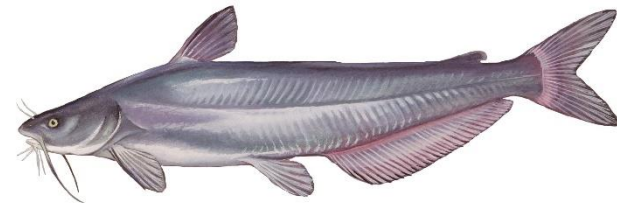
Bullheads



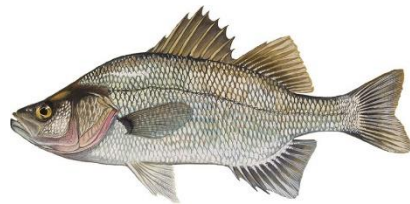
Green Sunfish



Warmouth Sunfish



Blue Catfish



White Perch



Carp or suckers

Reminder: It is **ILLEGAL** to stock public waters without a permit.

# Grass Carp



- NCSU Plant Identification Program  
<https://gardening.ces.ncsu.edu/plant-id/>
- Grass Carp effectiveness depends on the plants

Preferred	Hydrilla, chara, elodea, widgeongrass, bladderwort, fanwort, coontail, pondweed, and naiads
Not Preferred	<b>Duckweed</b> , Eurasian watermilfoil, parrotfeather, watermeal, eelgrass, smartweed, American lotus, yellow or fragrant waterlily, maidencane, dollarweed, alligatorweed, torpedograss, cattails, or some algae

# Stocking Grass Carp

1. Complete specific application and submit to district biologist
2. District biologist will evaluate your inflow/outflow & dam construction
3. If approved – purchase and stock Grass Carp
4. Optional: Submit receipt to simply notify Commission of stocking event (keep for your records)

<https://www.ncwildlife.org/Fishing/Hatcheries-Stocking/Grass-Carp-Stocking-Permits>



Date Received: \_\_\_\_\_ Permit No: \_\_\_\_\_

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION  
DIVISION OF INLAND FISHERIES

Application to Stock Triploid Grass Carp

Pursuant with 15NCAC 10C.0211, it is unlawful to transport, purchase, possess, or sell live individuals of grass carp (*Ctenopharyngodon idella*), except that triploid grass carp certified to be sterile may be bought, possessed, and stocked locally for control of aquatic vegetation under a permit issued by the North Carolina Wildlife Resources Commission.

Name of Applicant \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_ Email Address \_\_\_\_\_  
Contact Person (if different from applicant) \_\_\_\_\_  
Telephone \_\_\_\_\_ Email Address \_\_\_\_\_

**Water body to be stocked**  
Is the water body a private pond/lake or a public water body? \_\_\_\_\_  
If public, name of water body \_\_\_\_\_ County \_\_\_\_\_

**Vegetation**  
Has the vegetation been identified? \_\_\_\_\_ By whom? \_\_\_\_\_  
Species of vegetation present \_\_\_\_\_  
For previous grass carp stockings, provide date and number stocked \_\_\_\_\_  
Identify any other method(s) used to control or remove the vegetation? \_\_\_\_\_

**Pond Description** (Complete this section for private ponds)  
Describe pond location. Provide detailed directions using road numbers. Attach additional pages as necessary.  
\_\_\_\_\_

Date pond completed \_\_\_\_\_ Water supply:  Runoff  Stream  Well  Spring  
Area: \_\_\_\_\_ Acres Maximum depth: \_\_\_\_\_ Feet Average depth: \_\_\_\_\_ Feet  
Can water level be controlled? \_\_\_\_\_ Can pond be drained? \_\_\_\_\_ If so, how? \_\_\_\_\_  
List the species of fish present in your pond \_\_\_\_\_  
Pond uses:  Fishing  Swimming  Boating  Livestock watering  Irrigation  
Do you fertilize your pond? \_\_\_\_\_ When? \_\_\_\_\_ Type of fertilizer \_\_\_\_\_ Amount \_\_\_\_\_

Signed \_\_\_\_\_ Date \_\_\_\_\_  
Applicant or legal representative

Updated 9/13/2016

I have reviewed the *Frequently Asked Questions regarding the triploid grass carp permit* available at [www.ncwildlife.org](http://www.ncwildlife.org) or by mail upon request. I understand that additional information may be required in order to fully evaluate my request. A field inspection may be required, and the applicant or contact person must be present at the time of inspection. I also understand and agree that any advice or assistance given as a result of this request shall not make the State of North Carolina, or its authorized agents, liable for any damage, real or alleged, to my property, and I shall hold the State harmless from any and all such claims.





# Habitat Improvement



Cedar trees  
PVC spool

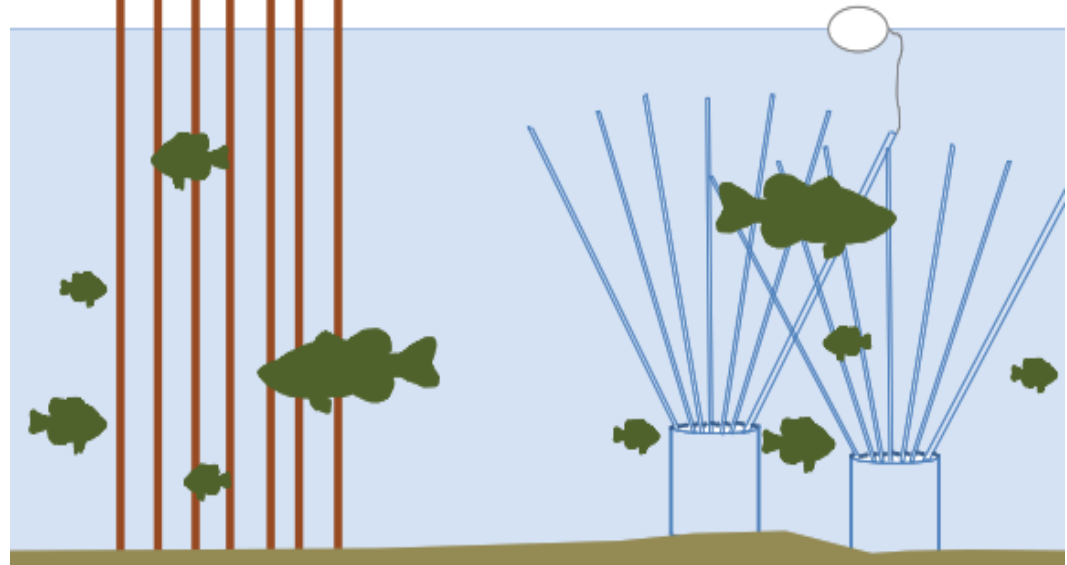


Cut & cable tree



PVC tree

Stake beds





# Fish Kills

## Causes

- # 1 cause: low dissolved oxygen
  - Algae/plant die offs
  - Stratification
  - Fertilizer runoff (crop fields and lawns)
- Less common:
  - Spawning stress, pesticide, herbicide, or other chemicals
  - Diseases or pH issues
- If an **unnatural** cause is suspected report fish kill to Department of Environmental Quality

Granville County = Raleigh Regional

Office 919-791-4200

<https://www.deq.nc.gov/about/contact/regional-offices>



# Pond Management Guide

<https://www.ncwildlife.org/Portals/0/Fishing/documents/2019FishingDocuments/Pond-Management-Guide.pdf>



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# Questions?



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