# Planning a Brook Trout Pond Reclamation

**Presentation prepared by:**

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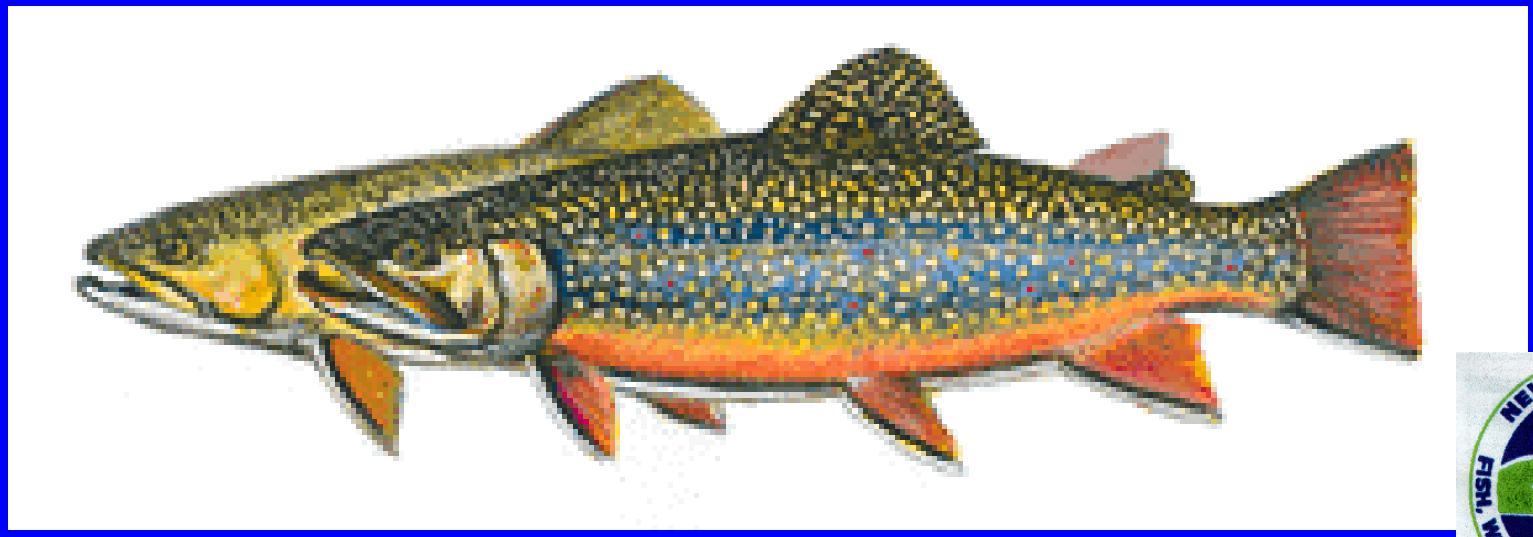


# Overview of Presentation

- What is a reclamation?
- Why do a reclamation?
- Evaluating your pond.
- Equipment and costs.
- Treatment.
- Restocking.

# What is a reclamation?

- The use of chemicals to poison competing fish species in a pond or stream
- Followed by restocking of desired species

# A Brief History of Reclamations in the Adirondacks

- NY State has reclaimed >150 waters since the 1940's – some several times
- Many large, private landowners have reclaimed lake waters
- NY State has reclaimed some private ponds in cooperative broodstock agreements

# Why do a reclamation?

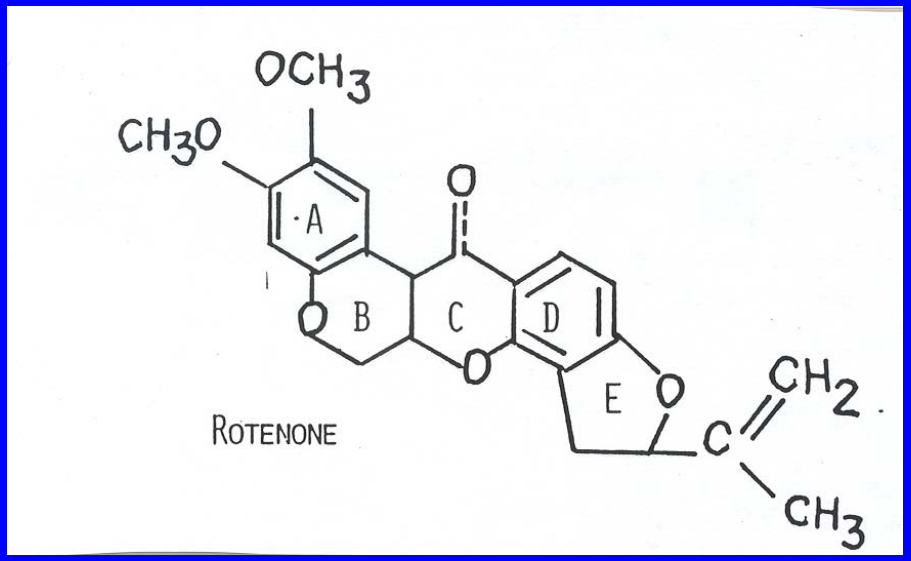
- To create good brook trout fishing by eliminating competing fish species
- May restore natural reproduction
- May break disease cycles for tapeworms and other trout parasites

# Past/Current Chemical Use

- Some experimentation with Antimycin and Toxaphene in the past
- Rotenone ($C_{23}H_{22}O_6$) is now the only chemical permitted for pond reclamations in NY State
- Treatment concentrations of rotenone cannot exceed 1 part per million
- Pesticide applicators must be NYS certified

# Rotenone

- A naturally occurring organic piscicide
- In roots of the Derris or cube plants (family Leguminosae) found around the world
- Used for centuries by primitive peoples



# Rotenone 2

- Available in liquid or powder form
- Degrades to $CO_2$ and $H_2O$
- Degradation rate dependent upon water temperature and exposure to sunlight
- Can be detoxified using potassium permanganate ($KMnO_4$)
- http://www.fisheries.org/rotenone/

# Evaluating Your Pond

- Fish community
- Water chemistry
- Physical features

# Simple Communities

- Brook trout do best in simple fish communities ranging from monocultures to trout plus a few native minnow species

- It is a myth that brook trout need minnows to grow to large sizes - reclaimed waters often produce very large trout

# Competitive Species

- Nonnative species: Yellow perch, golden shiner, largemouth and smallmouth bass, northern pike are the worst brook trout competitors/predators

- Native species such as brown bullhead, creek chub and pumpkinseed can interfere with brook trout in shallow, muddy ponds

# Water Chemistry

- Some water less than 70 degrees Fahrenheit available in summer
- Dissolved oxygen levels above 4 ppm in cool water zone
- pH preferably above 6 (above 4.5 in bog ponds)

# Physical Features

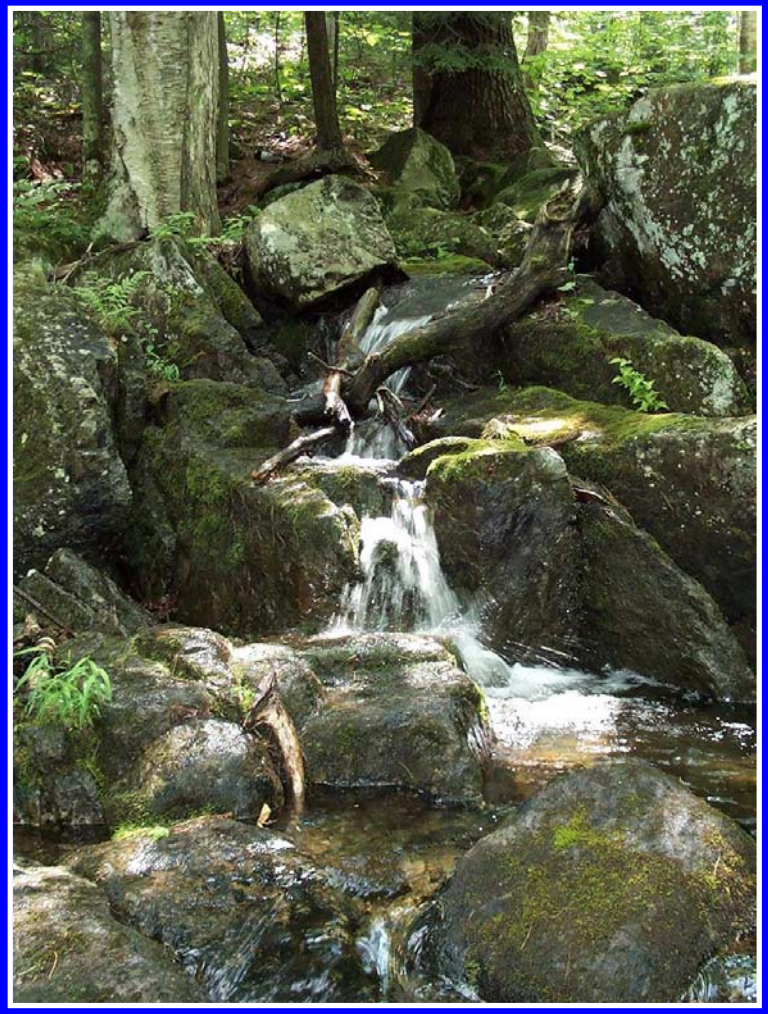
- Good natural barrier or barrier dam site
- Small wetlands
- Small tributaries, spring locations known
- Minimal floating bog around shoreline
- A “hard” shoreline is desirable but not mandatory

# A Poor Wetland Situation

# Typical Wetlands

# A Good Natural Barrier

# A Typical Natural Barrier



# Problems Presented by Bog Mats, Springs and Tributaries

- All offer escape routes for target species
- You must inject rotenone under bog mats
- Springs offer a continual source of fresh water
- Tributaries often go underground

# Manmade barriers

- Minimum 36 inch vertical drop required

# Equipment and Costs

- Rotenone currently (9/01) costs $55/gallon and comes in 5 gallon pails ($275)
- Powder less expensive
- Boats, motors, pumps, backpacks, safety equipment - see the list

# Paperwork

- Within the park, a wetlands permit is required from Adirondack Park Agency; outside the park, permit required from DEC
- Pesticide permit from DEC
- If multiple riparian owners located on the pond, then all must consent to treatment

# Boat Gear

# Backpack Sprayer

# Treatment

- Determine the volume of your pond in acre-feet (= area in acres * mean depth in feet)
- Most pond volumes available from DEC or ALSC
- One gallon of rotenone treats 3 acre feet
- A 10 acre pond averaging 6 feet deep = 60 acre feet/ 3 acre ft/gal = 20 gallons (*$55)

# Boat Application

# Applying by boat

- Surface applications in late fall
- Deep pumping necessary when a thermocline is present
- Grid pattern application to cover all areas of the pond and all depth strata

# Wetland treatments

- Near shore spraying
- Backpack spraying to cover all pocket water

# Overall objective

- Complete the treatment in one or two days to avoid reapplying due to degradation of rotenone

- Leave no water untreated

# Restocking

- Rotenone can degrade in 2-3 weeks if water temperatures exceed 60 degrees F.
- Recommend to wait until the following spring to restock
- Restock with fingerling brook trout –a rate of 30 fingerlings/acre or less should produce trophy fishing

# Results

# More results

# And More

# The Payoff