

# Integrated Pest Management

Cornell Cooperative Extension  
Suffolk County

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## Anti-fouling Paints and Boat Bottom Maintenance

### 3.6 Best Management Practices for Avoiding Invasive Whirling Disease in Freshwater Fish

Whirling disease is caused by a European salmonid fish parasite introduced by rainbow trout.

Affects: Trout, salmon and whitefish

The parasite penetrates the head and spinal cartilage of salmonid fish and multiplies rapidly, putting pressure on the organ of equilibrium:

- Causes affected fish to swim erratically in a whirling pattern.
- Affected fish cannot feed or avoid predators correctly.
- Physical signs of the disease include:
  - Darkened tail.
  - Twisted spine.
  - Deformed head.
- No cure and in severe cases it will kill the fish.

There are two obligate hosts, the fish and the Tubifex worm.

10,000 Tubifex worms can lurk in one square yard of muddy river bottom.

Infective spores can be shed from parasite infected dead fish and an infected live fish's gills, feces.

Spores can live for 20 years in sediment.

NOTE: This parasite does not infect humans or other predators of infected fish.

### EXCEPTIONS to using green cleaning products (for use on dry land under specific circumstances)

Bleach is corrosive but if whirling disease is an issue, use a 10% bleach solution:

- 13 ounces of household bleach to one gallon of water.
- Other Cleaning Agents for Whirling Disease:
  - Quaternary Ammonium Compounds from Veterinary or Laboratory Supply Companies.
  - Or use household cleaners with quaternary ammonium compounds at full strength.
    - Soak for a minimum of ten minutes.

NOTE: For any of these EXCEPTION cleaning suggestions, dispose of rinsate or other materials AWAY from surface waters.

NOTE: For wading anglers, felt soled waders and wading shoes are an IMPORTANT MEANS OF SPREAD for Didymo and whirling disease.

- Felt soled footwear are almost IMPOSSIBLE to disinfect!
- Use rubber or studded soles that will give you similar traction.
  - These are much easier to disinfect.
  - These are less like to transport aquatic invasive species.

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