Hydrilla Management of the Croton River

Mark Heilman, Ph.D.
Senior Aquatic Technology Leader
Hydrilla Management in the Croton River

- Heavy infestation that has increased in many areas of the river since discovery in 2013.
  - Habitat impact
  - Risk of spread to other regional waters

- NYSDEC has explored many management options for current plan that focuses on efficient use of Sonar Aquatic Herbicide.
SONAR (a.i. fluridone) and monoecious hydrilla

- SONAR has been the primary aquatic herbicide technology for control of monoecious hydrilla in the last two decades.
- Most sensitive invasive aquatic plant to Sonar.
- Multiple scales of management throughout US
  - Focus of eradication programs
- Past use in lotic systems with recent focus on new infestations of monoecious hydrilla in sensitive sites
- Excellent environmental profile
Sensitivity of early-stage monoecious hydrilla to Sonar (fluridone)

Biomass at 70 days after treatment

Published study from the US Army Corps of Engineers (Netherland 2015, JAPM 53:178-184)

Model Estimate

EC90 = 1.86 ppb

No new tuber formation at any rate.

From Netherland 2015
Hydrilla Management in the Croton River

• **Target Sonar (fluridone) rates of just 2 to 4 ppb**

  • **No restrictions on direct potable consumption of treated water from river if it occurred.**

    • EPA Office of Water Guidance on Pesticide Residues in Drinking Water from January 2017
      • OK in single day to drink 35,000 ppb
      • OK to drink every day up to 960 ppb

• **No restrictions on swimming, drinking, boating, etc.**
  • Some limits on select irrigation direct from river (if occurred)
Injector 1
New Croton Dam
(2 – 4 ppb)

Injector 2
Black Rock Dam
(boostér)
Earliest growth of hydrilla – TODAY Black Rock Park
Eno River, North Carolina
Eno River, North Carolina
• Critical habitat for a number of state-listed species including a snail unique in state
• Hydrilla first detected 2005.
Annual July 4th Eno River Festival
Eno Hydrilla Infestation

August 2011
2015 and 2016 Hydrilla Management Zone on the Eno River, North Carolina

State Partners:
- NC Dept. of Environmental Quality
- NC Wildlife Resources Commission
- NC State Parks
- NC Department of Agriculture
- NC State University

Local Partners:
- Orange County
- Durham County
- City of Raleigh
- City of Durham
- Town of Hillsborough
Public Health and Environmental Assessments for Eno River Hydrilla Management
2015-2016 Hydrilla Management on the Eno River, North Carolina
2015 – single injector
2016 – two injectors

Eno River – Lawrence Road Injector

Eno River – Pleasant Green Injector
2016 Eno River USGS discharge measured at Roxboro Rd. (end of 16-mile management zone)
## 2016 Eno River FasTEST Summary

(ppb Sonar as fluridone; <1 results are given 0.5 values for calculating treatment averages)

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</tbody>
</table>

* Injector @Lawrence Rd is 2.2 mi upstream of Dumont Rd access.

2nd Injector @ Pleasant Green is immediately downstream from sampling site, 7.3 mi downstream of Lawrence injector and 8.7 mi upstream of Roxboro Rd.

### 2016 Eno River FasTEST through August 10

![Graph showing data points for sampling sites DUMONT, PLEASANT, COLE, and ROXBORO over time.](image)
2015 Hydrilla management on the Eno River, North Carolina using Sonar® Aquatic Herbicide
Unmanaged Upstream Area (Hillsborough) August 2015

2015 Hydrilla management on the Eno River, NC
June 10, 2016 – Sonar-injured hydrilla (left) and healthy riffleweed (right) at Pleasant Green access
August conditions at Pleasant Green: 2011 before management (top) and 2016 post two years of treatment (bottom)
• Hydrilla management efforts by the State of North Carolina have been successful and greatly improved river habitat and aesthetics and protected long-term water quality and uses of the Eno River.

• The Eno River has many qualities similar to the Croton River in terms of water use and sensitive habitat providing an excellent model for how Croton hydrilla infestation may also be successfully controlled.
Questions:

Mark Heilman, Ph.D.
317-775-3309
markh@sepro.com