Development of New Chemicals for Control of Harmful Algal Blooms

Angela Poovey & Mike Netherland

Objective:
Develop algal-species selective application strategies to prevent blooms

Approach:
Laboratory studies

Microcystis aeruginosa closed
Lake Steilacoom, Pierce Co, WA, 2006

Major Findings / Progress

• Conducted preliminary tests with *Lyngbya*
• Partnered with 3 groups
  – U of MS: Species that cause off-flavor in catfish
  – U of SC: Species that cause AVM* in eagles and waterfowl
  – Purdue: Species that produce toxins or cause taste & odor problems in drinking water

*Avian Vacuolar Myelinopathy – Neorological disease caused by toxic algae growing on *Hydrilla*
Management and Control of Asian Carp

Jack Killgore

Objectives

• Determine responses of carps to barriers (electricity, sounds, elevated water velocity)
• Provide tools to assess risks from barriers

Approach

• Focus on big river silver and bighead carp
• Evaluate barriers, population control, impacts, & management strategies
**Major Findings / Progress**

- Electric Barrier used in the Chicago Ship Canal not feasible for UMRS
- Bubble-Acoustic System being considered
- Can be calibrated to be species specific

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**Development of Site Assessment Technologies for Aquatic Nuisance Species**

Judy F. Shearer & Michael J. Grodowitz

**Niche Modeling**

1. Probability distribution defined as environmental variables
2. GARP – Genetic algorithm for rule set production—based on biological & environmental data

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**Recommended locations for barriers.**
Approach

- Use modeling techniques to predict invasions
  - Site parameters: pH, DO, depth
  - Species environmental tolerances
  - Pathways of introduction
- Develop monitoring strategies

Aquatic Nuisance Species Research

Risk of Algal Toxins - Jeff Stevens

ANS Information Systems - Michael J. Grodowitz