Establishing research priorities for aquatic invasive species

Nick Phelps, Becca Nash, Sue Galatowitsch

Minnesota Aquatic Invasive Species Research Center
University of Minnesota
Driven to Discover℠

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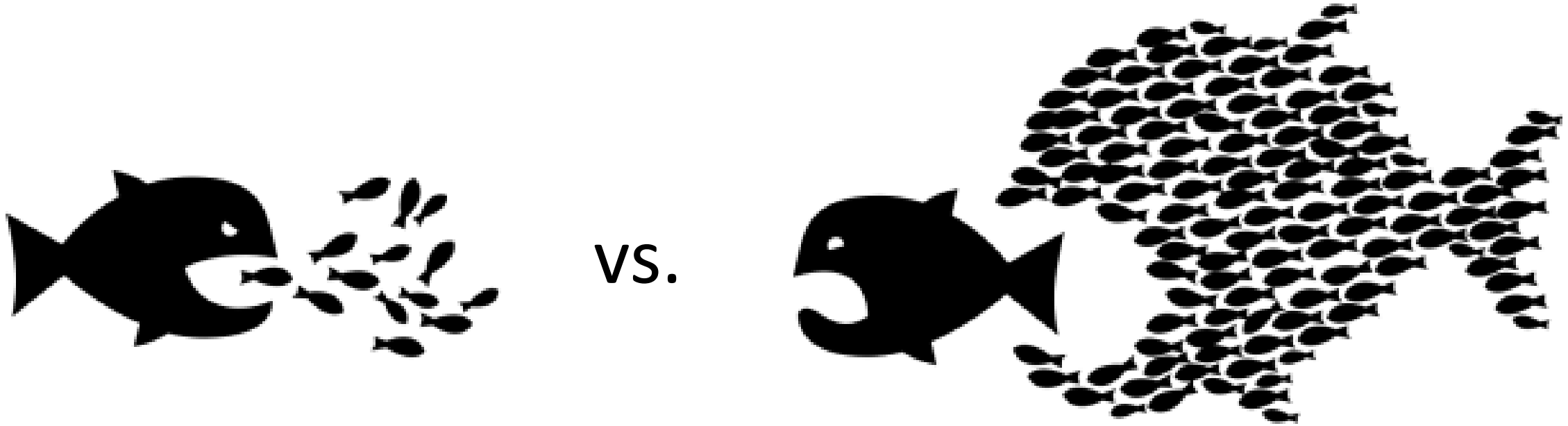
Research on aquatic invasive species…



Minnesota Aquatic Invasive Species Research Center

Mission

To develop research-based solutions that can reduce the impacts of aquatic invasive species in Minnesota by preventing spread, controlling populations, and managing ecosystems; and to advance knowledge to inspire action by others.

There is a greater risk for MAISRC to work on too many species than too few…

but which ones?

and what approaches??

Prioritization process

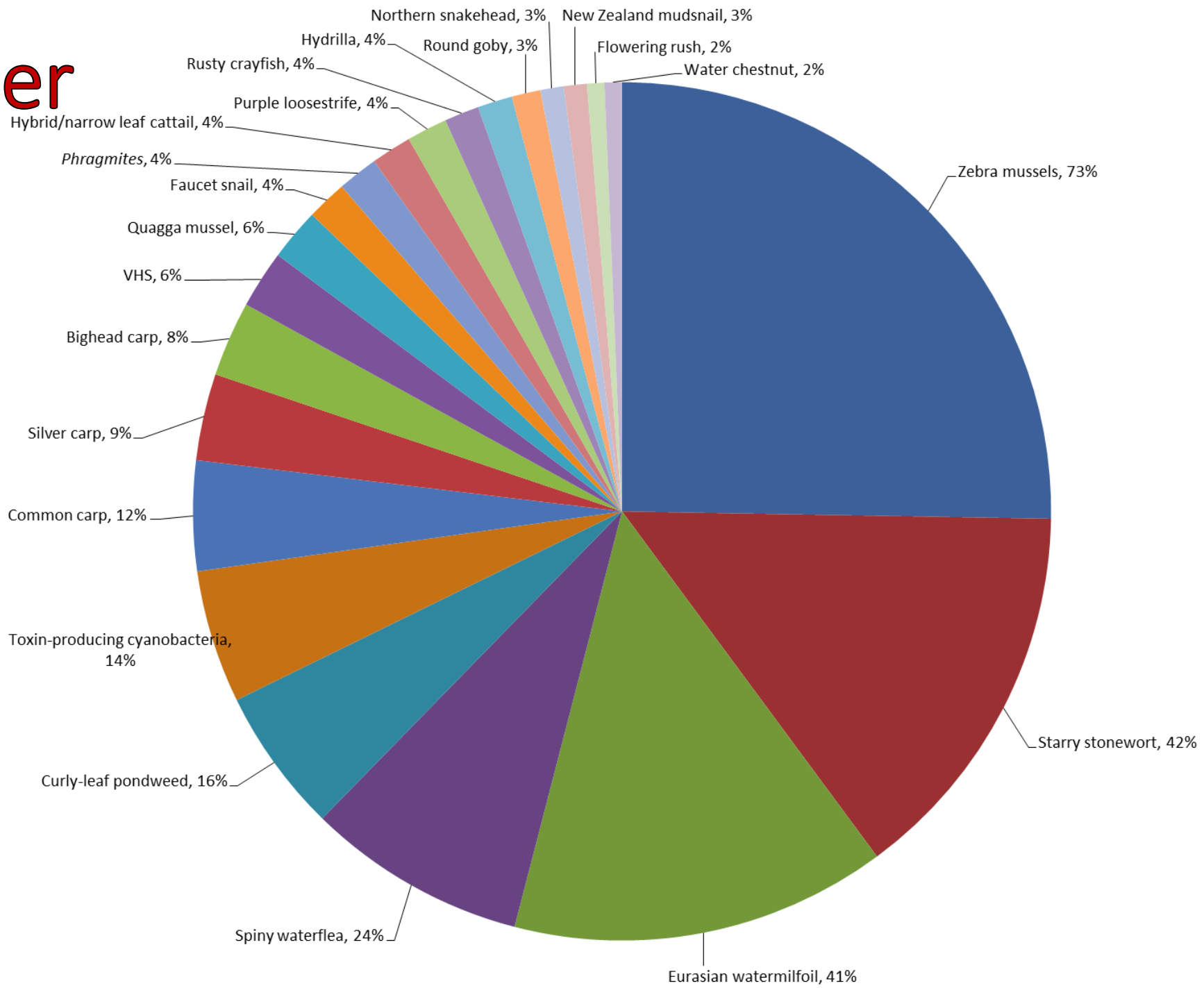
Prioritization process

Prioritizing species

- Technical committee membership (n=10):
  - Balanced expertise in four organismal groups (fish, inverts, plants, microbes)
  - Each group: 1 manager and 1 researcher
  - Two AIS managers (watershed district and county)
- Informed by:
  - Literature review
  - Stakeholder engagement, consultation and survey
  - Expert opinion
- Meet annually or as needed

2016 Stakeholder survey:

221 responses



Priority species: 40 total

Species present & widespread in MN & known to have high impact in MN

- *Ex: Common carp, zebra mussels, Eurasian watermilfoil*

Species present but localized in MN; known to have spread and caused high impacts elsewhere

- *Ex: Silver carp, rusty crayfish, didymo, common reed (Phragmites)*

Species not currently in MN, but presumed high risk to establish in the state; have caused high impact elsewhere

- *Ex: Black carp, killer shrimp, VHS, hydrilla*

Prioritizing species

Strengths

- Rapid-allows for regular (annual) updating
- Adequate level of detail to inform research agenda setting
- Process suited for reaching consensus, despite uncertainties

Challenges

- List is at risk of becoming too large over time—need a maximum
- Not a substitute for a risk assessment—harm may be poorly documented
- Difficult to accurately predict which species will arrive

Prioritization process

Prioritizing research needs

- Research needs assessment team membership (n=20):
  - Balanced expertise in four organismal groups (fish, inverts, plants, microbes)
  - One group with expertise in ‘cross-cutting’ topics
  - Each group: 1 manager, 1 MAISRC, 1 outside researcher, 1 stakeholder
- Informed by:
  - Review of research progress and literature
  - Stakeholder engagement, consultation and survey
  - Expert opinion
- Meet every other year, mini update in off years

Prioritizing research needs

- Goal: 20-25 high priority research needs for RFP
- Seek consensus at each step

- Stakeholder input for research ideas (n=300+ total)
- Organismal groups each select 10 research needs (n=50 total)
- Rephrase needs (as needed) and provide justifications
- Small mixed groups discuss and rank top 50 ideas to high, medium, low
- Entire group discusses small group ranks and finalizes (n=20 high)
- Reviewed by MN DNR, Faculty Group and Advisory Board

Priority research needs: 21 total for 2017

Early detection and preventing establishm… …ority species

Ex. Assess the risk of AIS spread, including p… … the movement of baitfish, considering intra and inter…

Creating and impro… …ority species

Ex. Develop a… …esocosm, field) to evaluate options for starry ston…

Understandin… …prioritize management actions

Ex. Evaluate the e…nomic impact of AIS introductions (e.g. starry stonewort, zebra mussel, or Eurasian watermilfoil) on property values, business and tourism over time to inform management decision making.

Coming soon:
2017 Request for Proposals!

Prioritizing research needs

Strengths

- Orients to solutions-based research
- Facilitates seeking researchers with needed skills
- Allows for longer-term planning
- Bridges between managers and researchers
- Relatively time-efficient

Challenges

- Organismal groups → Organismal research
- Biologically based vs Multidisciplinary

Lessons learned…

- Stakeholder engagement in prioritization process is critical
- Collaborative approach improves outcomes
- Can’t make everyone happy
- Systematic and inclusive process improves fundability?
- Still learning!

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Questions?

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