Regional Economic Assessment of Aquatic Plant Pests in the Great Lakes Basin

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Great Lakes Regional Economic Models

Previous Work

Impacts of Asian carp invasion on Lake Erie

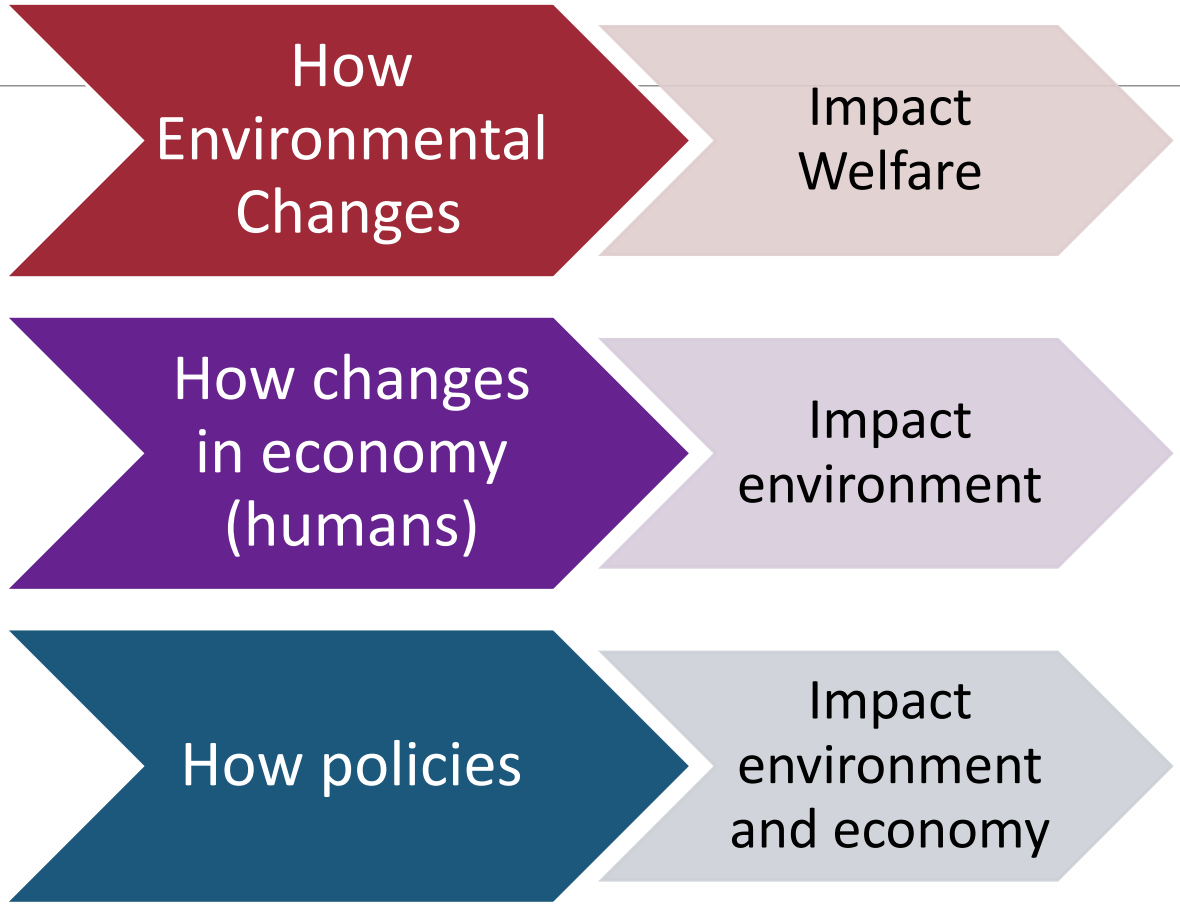
Impacts of shipping policies on Great Lakes Regional Economy

Impacts of multiple invasive species on the Lake Michigan Regional Economy

All models include interaction between ecological inputs or policies and human choices

Great Lakes Regional Economic Models

Key questions examined with these models



Great Lakes Regional Economic Models

Overview of Methods

With data on impacts we can perturb the economic system and calculate the welfare change.

Real economy and flows of money

Welfare impacts can be disaggregated by states.

If have specific Canadian economic data could model impacts in the same system. If not, could generalize results.

Data Requirements

Environmental Impacts

List of impacts

Impacts of species are identified by managers. Once identified to us, we can help identify what the economic impacts are.

Data Requirements

Economic Impacts

Industry

- Key industries impacted and by how much
- i.e. changes in costs, inputs used, efficiency

Households

- Visitation rates
- Changes in expenditures (recreation, Lake Associations, etc)
- Changes in tax rates

Government

- Costs incurred by government
- Where does funding come from, taxes, licenses

Data Requirements

Policy Impacts

If policies are proposed, what impacts do they have on human choices and environmental factors?

Will need policy impacts on industry, households, and government if applicable.

Data Requirements

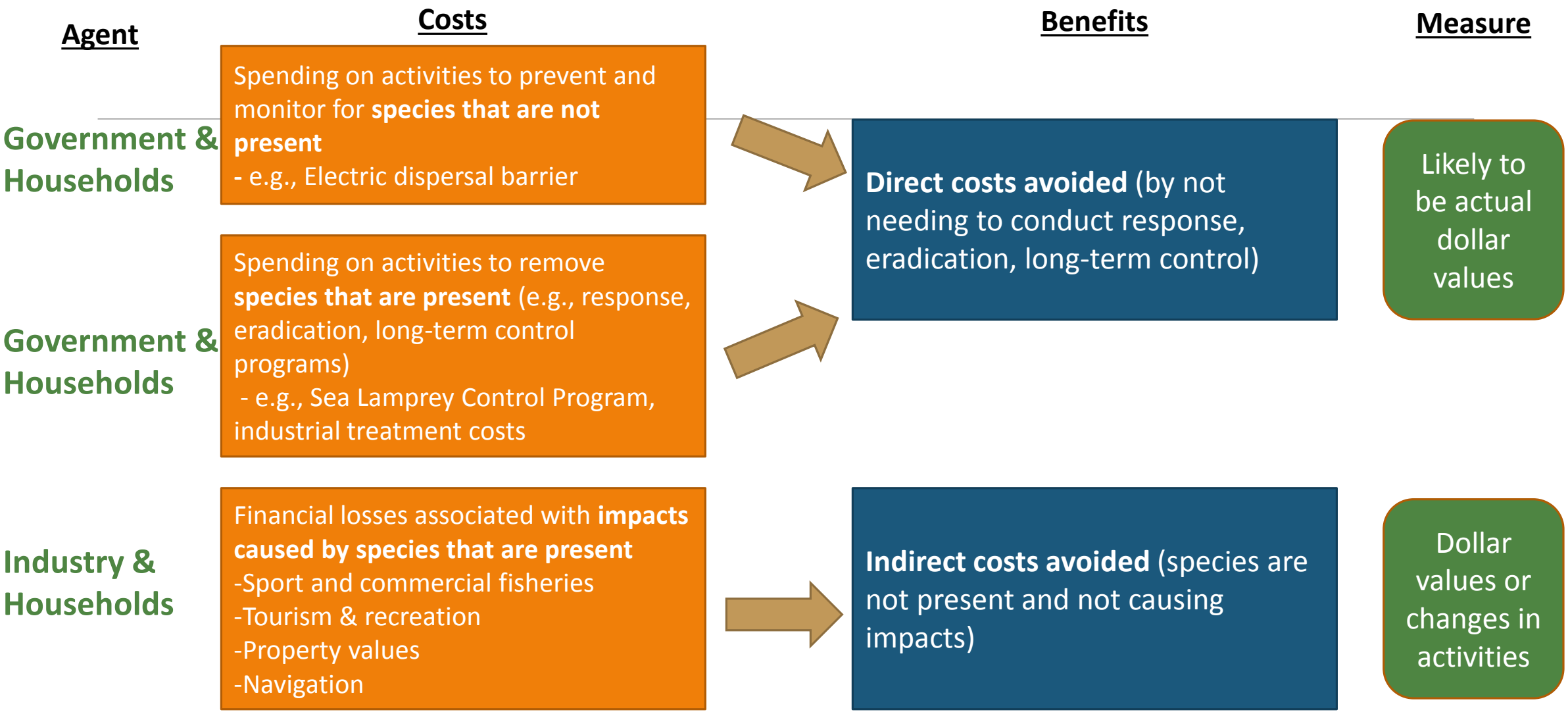
General Data Comments

What is the scope/scale of the analysis?

Need benchmark data. We have access to economic data, but the more specific information we have on the impacts the better.

All impacts should be measured in percent changes or rates, so they will apply to many different data sources

Currently have access to economic data at county level for the United States.


Agent
Costs
Benefits
Measure
Government & Households
Spending on activities to prevent and monitor for species that are not present
- e.g., Electric dispersal barrier
Government & Households
Spending on activities to remove species that are present (e.g., response, eradication, long-term control programs)
- e.g., Sea Lamprey Control Program, industrial treatment costs
Industry & Households
Financial losses associated with impacts caused by species that are present
-Sport and commercial fisheries
-Tourism & recreation
-Property values
-Navigation
Direct costs avoided (by not needing to conduct response, eradication, long-term control)
Indirect costs avoided (species are not present and not causing impacts)
Likely to be actual dollar values
Dollar values or changes in activities

Proposed Timeline

Phase 1: Complete by March 2016

- Once impacts are identified we will know if model needs to be modified
- Collect Baseline economic data

Phase 2: Complete by July 2016

- Run simulations based on impacts
- Draft formulated and ready for comments

Phase 3: Complete by October 2016

- Revisions made, final results available

Questions?