April 2018

Prioritizing management actions for the Fraser River estuary

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Kehoe, Laura; Lund, Jessie; Baum, Julia; Chalifour, Lia; and Martin, Tara, "Prioritizing management actions for the Fraser River estuary" (2018). Salish Sea Ecosystem Conference. 503.  
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The Lower Fraser River: A Wildlife Hotspot on the Brink

1. Decision Science - Laura Kehoe (UVIC)
2. People of the River - Janson Wong (LFFA) with Chief Dalton Silver Sumas First Nations
3. Marsh Recession - Brent Gurd (FLNRO)
4. Juv. Chinook - Dave Scott (Raincoast)
5. Coastal Waterbirds - Karen Devitt (BSC)
6. Rethinking Governance - Deborah Carlson (WCEL)
Prioritizing Management Actions for the Fraser River Estuary

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Ecological & Economic Importance

Photo: Robert Sisson
A Wildlife Hotspot on the Brink

Photo: James Wheeler
Species of conservation concern

- BC List Status of **Red** or **Blue**, COSEWIC or SARA status

- Conservation Framework Priority (1-3), Priority Species BCR5

- High Cultural and/or Economic Importance
Knowledge to date

• Significant investment in understanding threats
• Less work focussed on identifying the *management actions* to abate these threats
• A *priority threat management* framework can fill this gap
  - Participatory approach using expert knowledge
Q’s Priority Threat Management can answer

Which actions are most cost-effective (save most species per $ spent)?

How many species can be saved for a given budget?

Which species and ecosystems:

1. will be lost without management?
2. are unable to be saved, irrespective of management?
How do we prioritize conservation actions?

(1) Define objectives
(2) State constraints
(3) List biodiversity assets
(4) Weight assets
(5) List management actions
(6) Calculate the:
   - costs
   - benefits
   - feasibility
(7) Employ cost-effectiveness analysis to rank actions
Three main components to rank actions

Cost effectiveness

\[ \frac{B \times F}{C} \]

- \( B \): Benefits of the action
- \( F \): Feasibility of action
- \( C \): Costs of action
Problematic Species Management
Aquatic Disease Control
Pollution Control
Transport Regulation
Population Augmentation
Problematic Species Management
Aquatic Disease Control
Pollution Control
Population Augmentation
Transport Regulation
GOOD NEWS, EVERYONE!!
Conserving the most species / $

No species reach the 60% threshold without management
Cheapest option

Problematic Species Mgmt
= 1 species group for $4M
Complementary sets of strategies

Problematic Species Mgmt & Aquatic Habitat Restoration
= 2 species groups for $66M
Complementary sets of strategies

Aquatic Habitat Restoration & Pollution Control & Green Infrastructure = 5 species groups for $167M
Complementary sets of strategies
Complementary sets of strategies

10 species groups can be conserved with strategies combined with co-governance.

Number of species groups conserved vs. Total Cost ($CAD Million)
Closing thoughts

• Successful prioritization in New Zealand and over half of Australia now spreading across North America!

• Conservative governments like this approach – economically rational

• Prioritize other assets e.g. sites of cultural significance

• Include the co-benefits of actions e.g. carbon sequestration, tourism, livelihood

• With the input of knowledgeable experts, areas with data scarcity & complex governance can be prioritized using this technique
From knowledge to action

We now have the tools to develop conservation plans for multiple species in complex regions. We must *act* on this knowledge while we still have time.
Thanks for your attention

Special thanks to my supervisors, research assistant & collaborators

Dr. Tara Martin          Dr. Julia Baum             Jessie Lund
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Key References:

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Photo: Robert Sisson