



The Adaptation for Conservation Targets (ACT) Framework:

Incorporating climate change into natural resource management

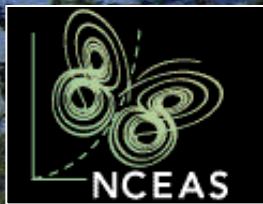
Erika Rowland

Molly Cross

Wildlife Conservation Society

Carrie Enquist & Gregg Garfin

LOTS OF PARTNERS:



Climate Change and Wildlife Conservation Working Group



AND MANY MORE...

SCOPE

Place-based System, process, species focus



SCOPE & GEOGRAPHY

Testing & refining the ACT Framework



Species

- Grizzly bears
- Wolverine
- Sage grouse
- Mexican spotted owl
- Bonneville cutthroat trout
- Grassland birds
- Aspen
- Whitebark pine
- Freshwater fish

Ecological processes

- River flows
- Wildfire regime
- Watershed hydrology

Ecosystems

- Yellowstone River
- Sagebrush steppe
- Alpine wetlands
- Oxbow wetlands
- Lowland boreal wetlands
- Oak woodlands

PROJECT PARTNERS...



& Regionally relevant groups

...& PARTICIPANTS

Universities, government agencies and conservation organizations



PURPOSE

Place-based adaptation strategies

“What to do”

**...to achieve conservation goals
in light of climate change?**



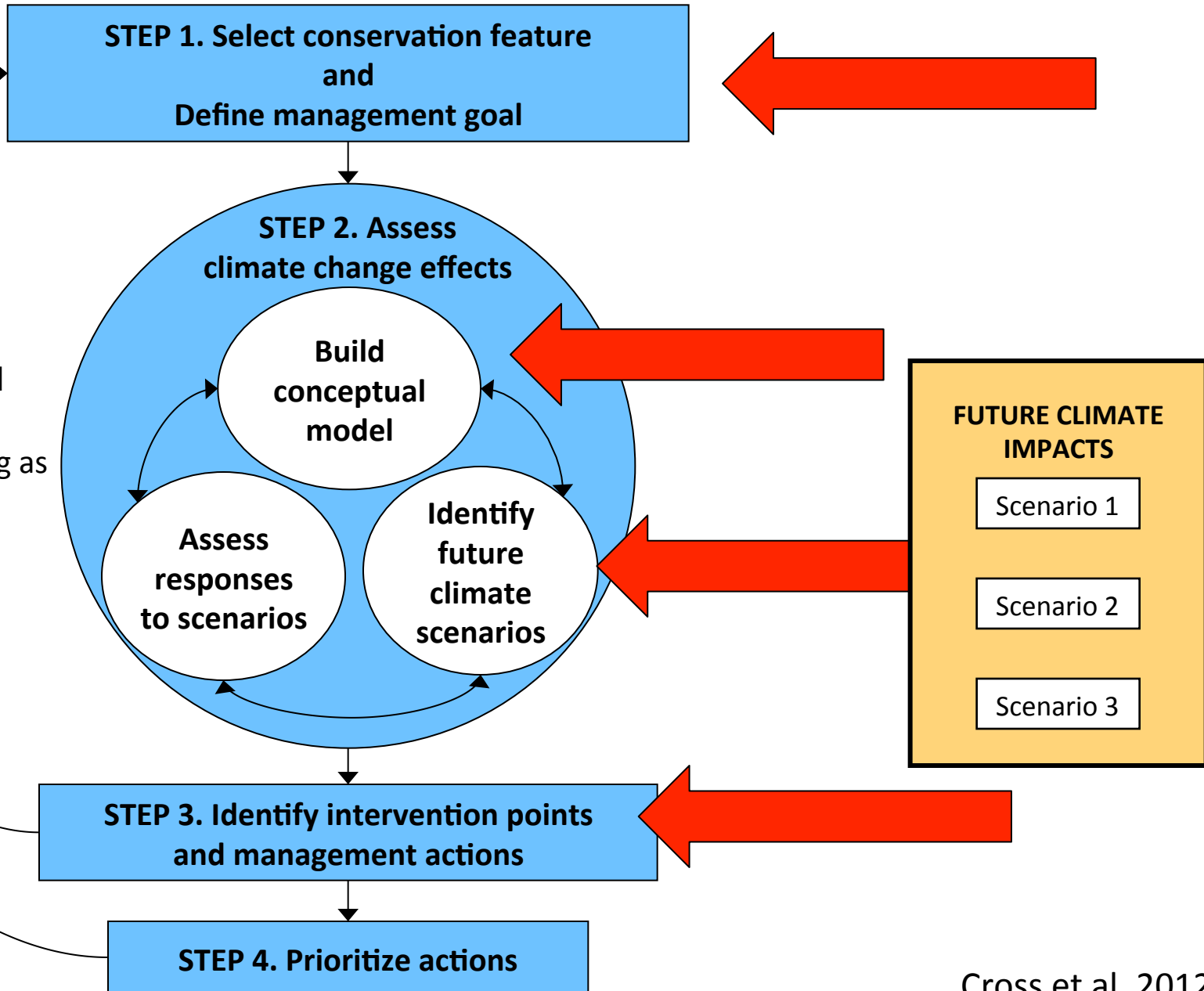
PROCESS

Adaptation for Conservation Targets (ACT)

- Framework to get practitioners started
- Draws on many existing, familiar processes & frameworks



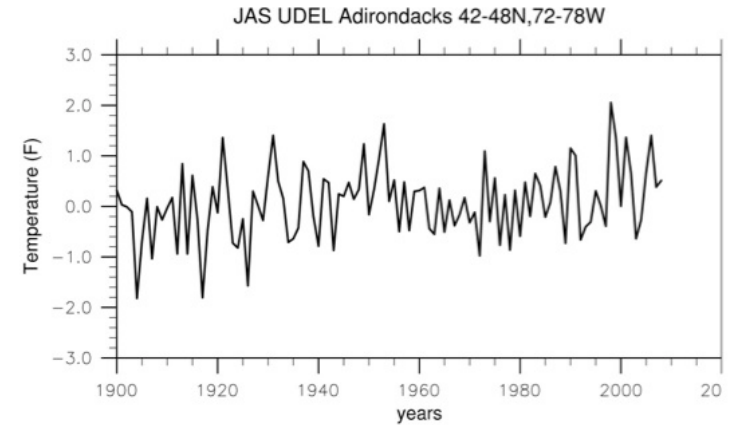
PROCESS: ACT Steps



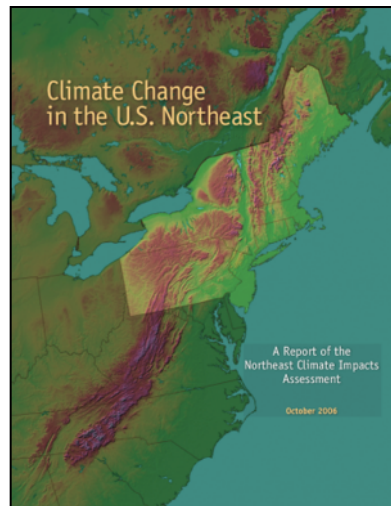
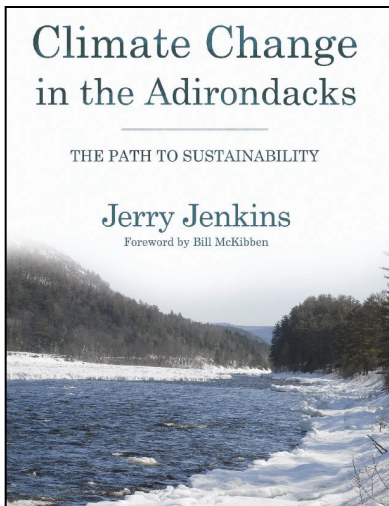
Identify future climate scenarios

Worked with experts to develop scenarios from readily available data:

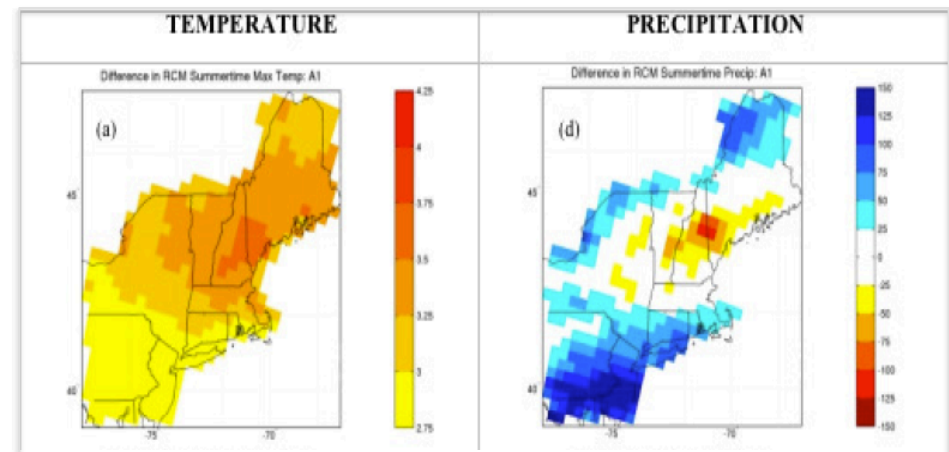
(2) 20th century climate records



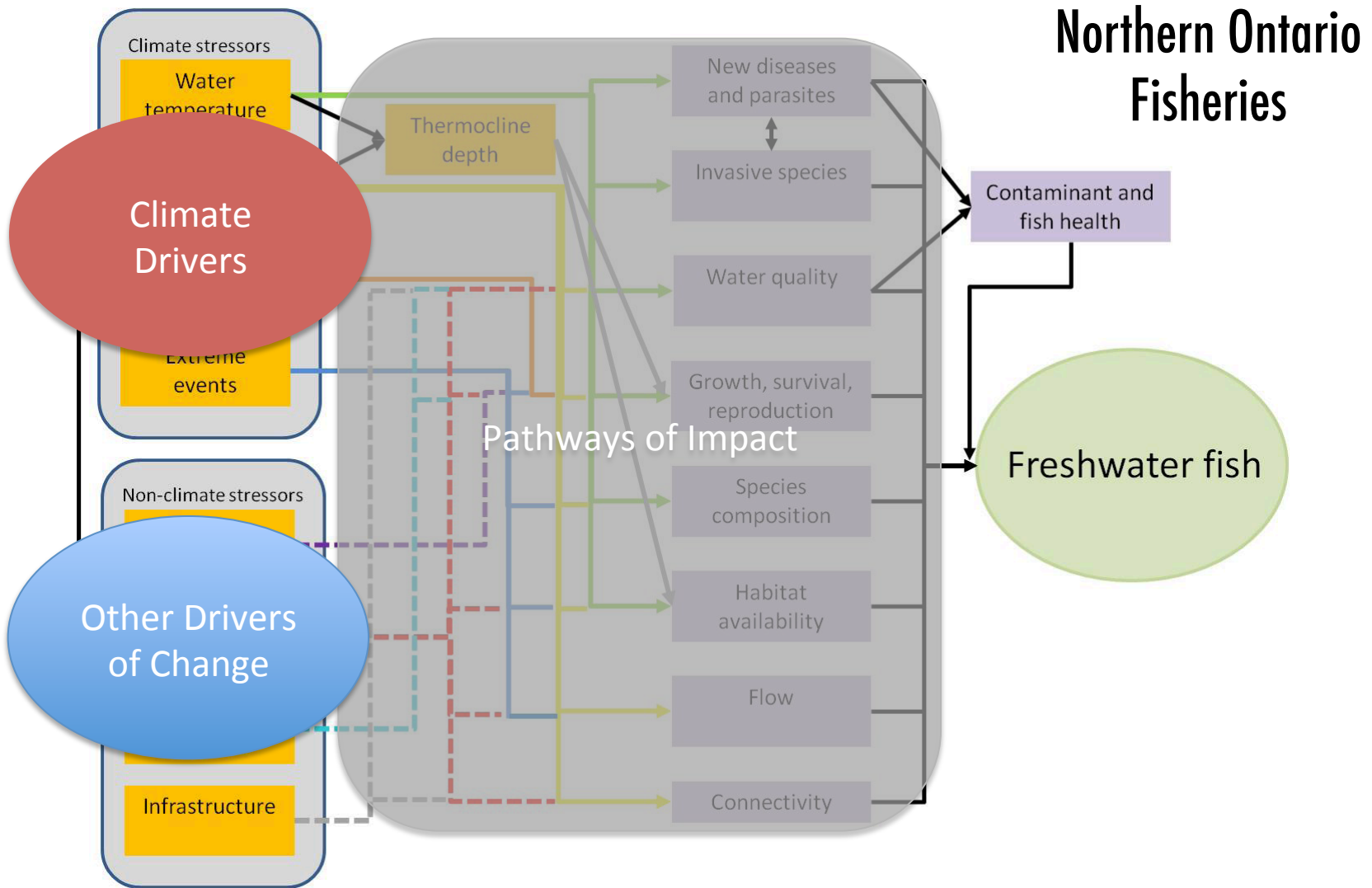
(1) Existing climate and impact summaries



(3) Global and regional climate models



Consider potential impacts & management intervention points



Brainstorm management interventions for impacts

Observed & Predicted Climate Change Impact	Intervention Point	Strategic Actions
Degradation of boreal wetland condition, including changes in vegetation composition and structure (e.g., increased encroachment of trees and shrubs).	Vegetation Management	<ul style="list-style-type: none"> • Vegetation control (e.g., to manually remove saplings). • Prescribed fires (to control saplings and suppress fire) – but concerns about trying to apply prescribed fires as the peatland dries out, also unclear what the historic/paleo fire history is for these wetlands. • Herbicide to control encroaching shrubs/trees (concerns about impacts of herbicide use). • Combinations of prescribed fire and herbicides. • NOTE: these actions may not be appropriate under a goal of facilitating/allowing ecological change to occur. • Protecting connectivity between wetlands.



REFLECTIONS

The positives

Enhanced local capacity for responding to climate change by:

- Improving understanding of potential climate change impacts
- Demonstrating a framework for developing adaptation actions, with initial focus on a few targets
- Identifying specific management actions for implementation, using scenarios
- Providing a launching point for multi-jurisdictional adaptation planning
- Providing a catalyst for overcoming uncertainty-induced paralysis



REFLECTIONS

The challenges

- Not all targets of interest to participants can be covered
- Relies on climate as primary driver for future change; might be other relevant scenarios (social, economic) not covered
- Conceptual models may be limiting for considering impacts, intervention points & management options
- Aims for near-term actions (next 5-10 years) that address future change for a fixed time period (e.g., around 2050) & relies on adaptive management
- Early applications, better for exploring options than making decisions

