

2015

Building Resilience: connecting systems and communities (2015 State of the Bay Presentation)

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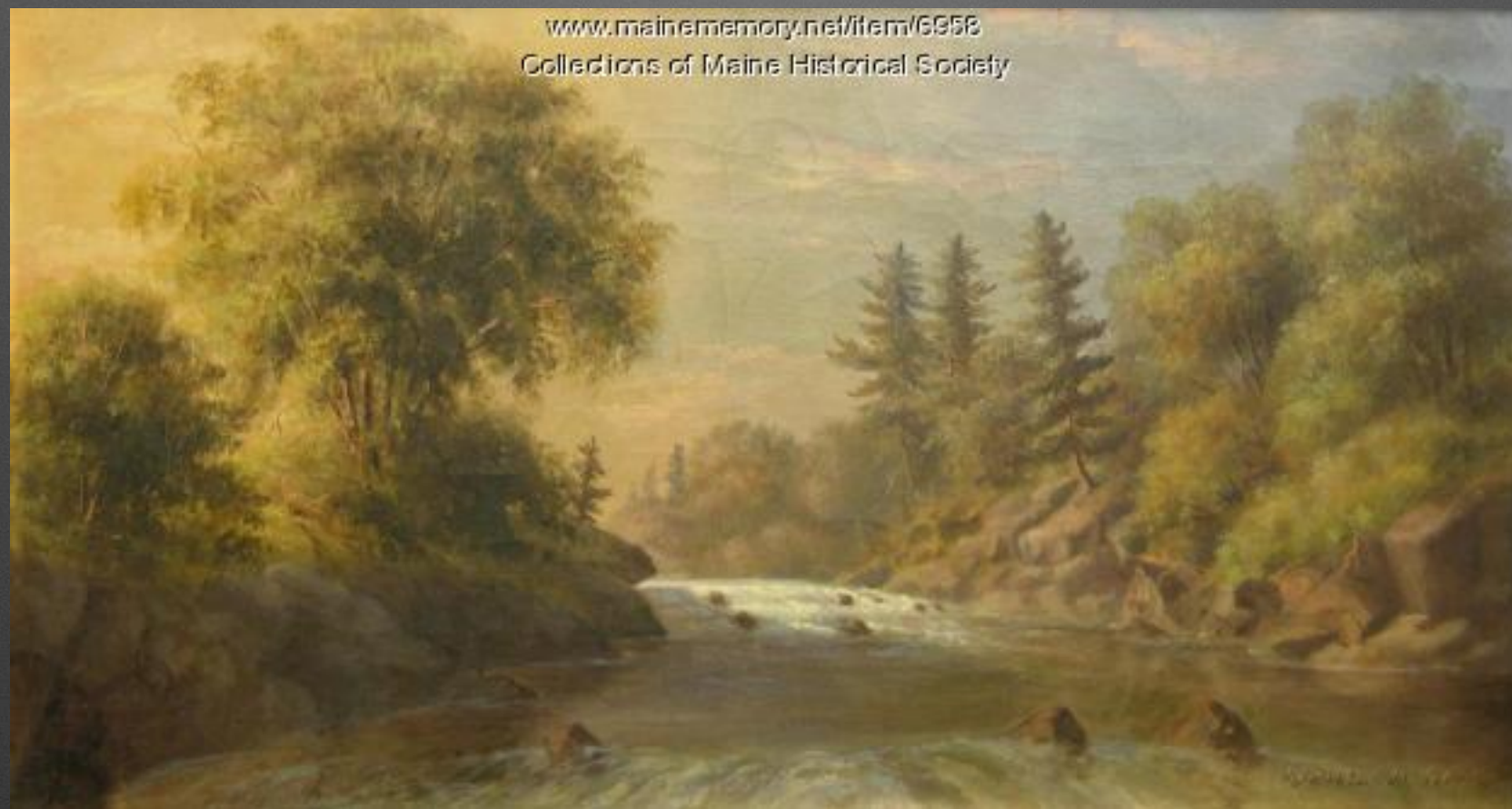
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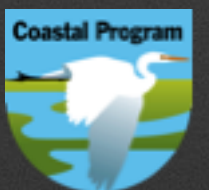
Building Resilience: connecting systems and communities



State of the Bay Conference 2015

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Resilience

The capacity of a system to absorb disturbance and reorganize while undergoing change so as to retain essentially the same function, structure, identity, and feedbacks

Regime shifts

Semi-arid rangelands that are overgrazed suddenly flip from a grass dominated regime to one with shrubs-
undergrazed become deserts

Restoration

“returning an ecosystem to a close approximation of its condition prior to disturbance”

National Research Council 1992

Developing strengths, acquire skills to cope, recover from hardships, and be prepared for future challenges

- Connectivity
- Social Capital
- Modularity
- Feedback
- Institutions



Nine Resilience Properties

- Diversity
- Ecological variability
- Modularity
- Acknowledgement of slow variables
- Tight feedbacks
- Social capital
- Innovation
- Overlap in governance
- Ecosystem services

Social

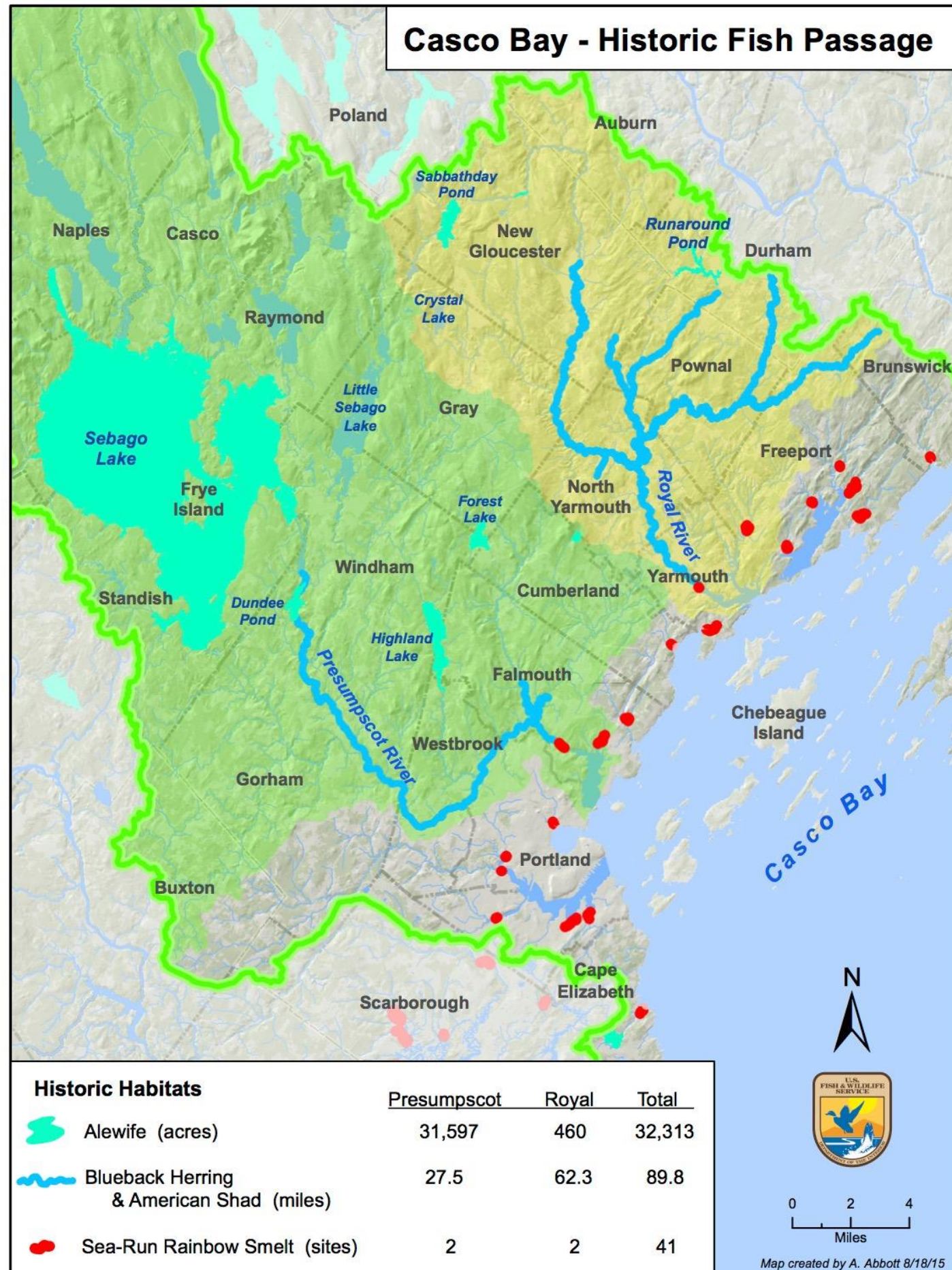
- Social Capital
- Innovation
- Overlap in Governance
- Ecosystem Services

Ecological

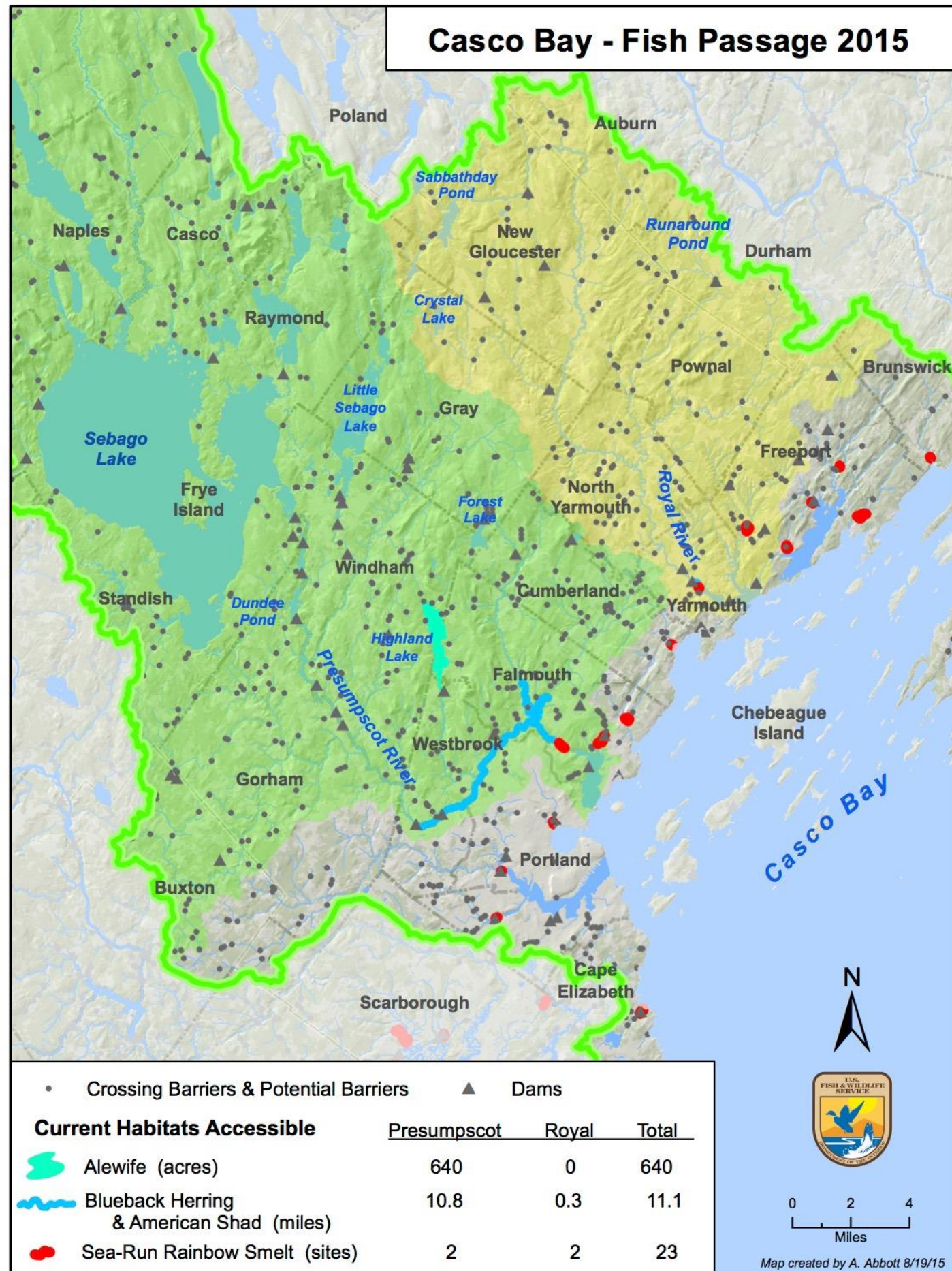
- Diversity
- Modularity
- Tight Feedbacks

- Ecological Variability
- Acknowledging Slow Variables

Casco Bay - Historic Fish Passage



Casco Bay - Fish Passage 2015





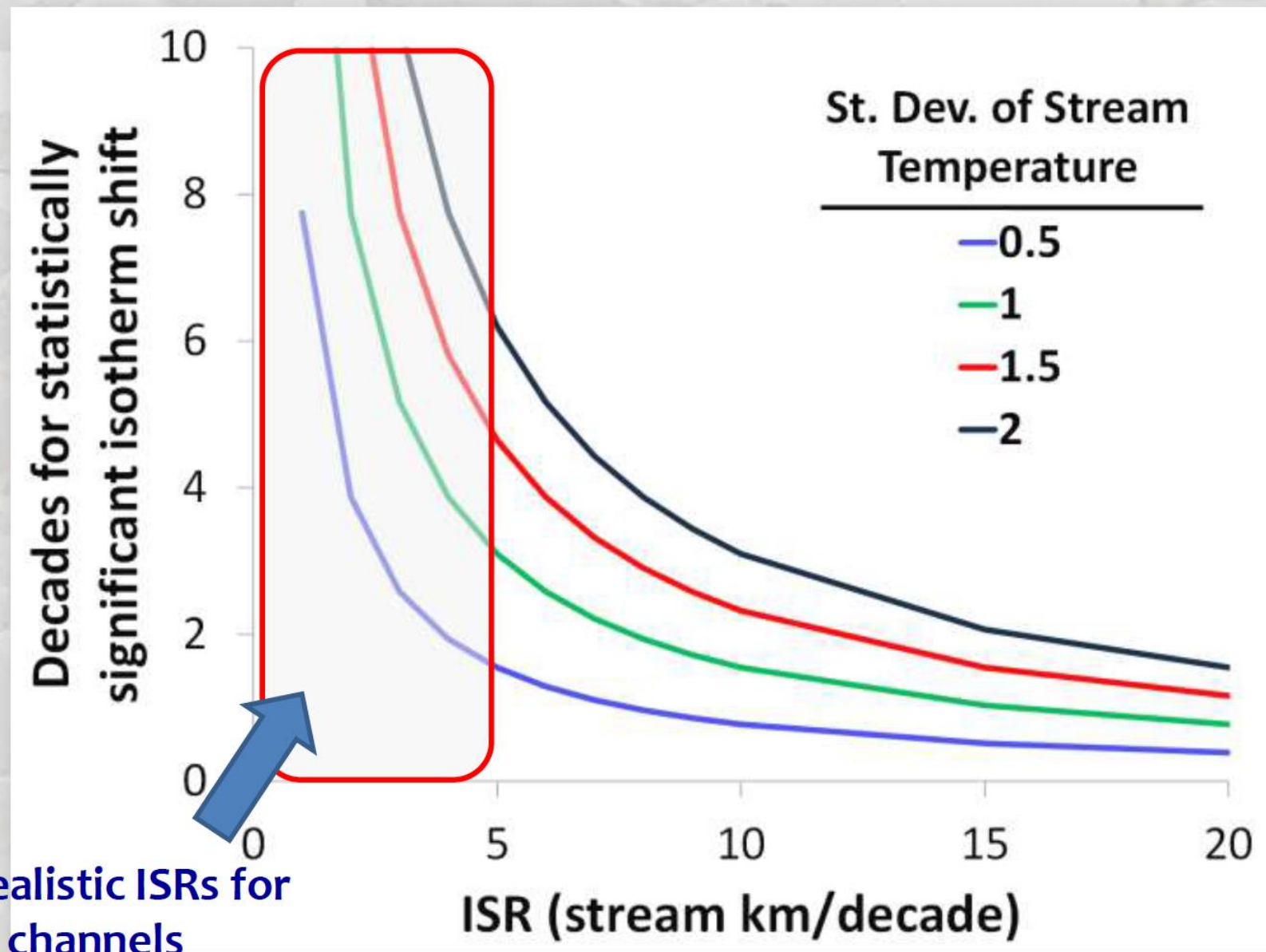
Diversity



Ecological variability

Changes Will Happen Slowly

20 – 60 years for significant isotherm shifts



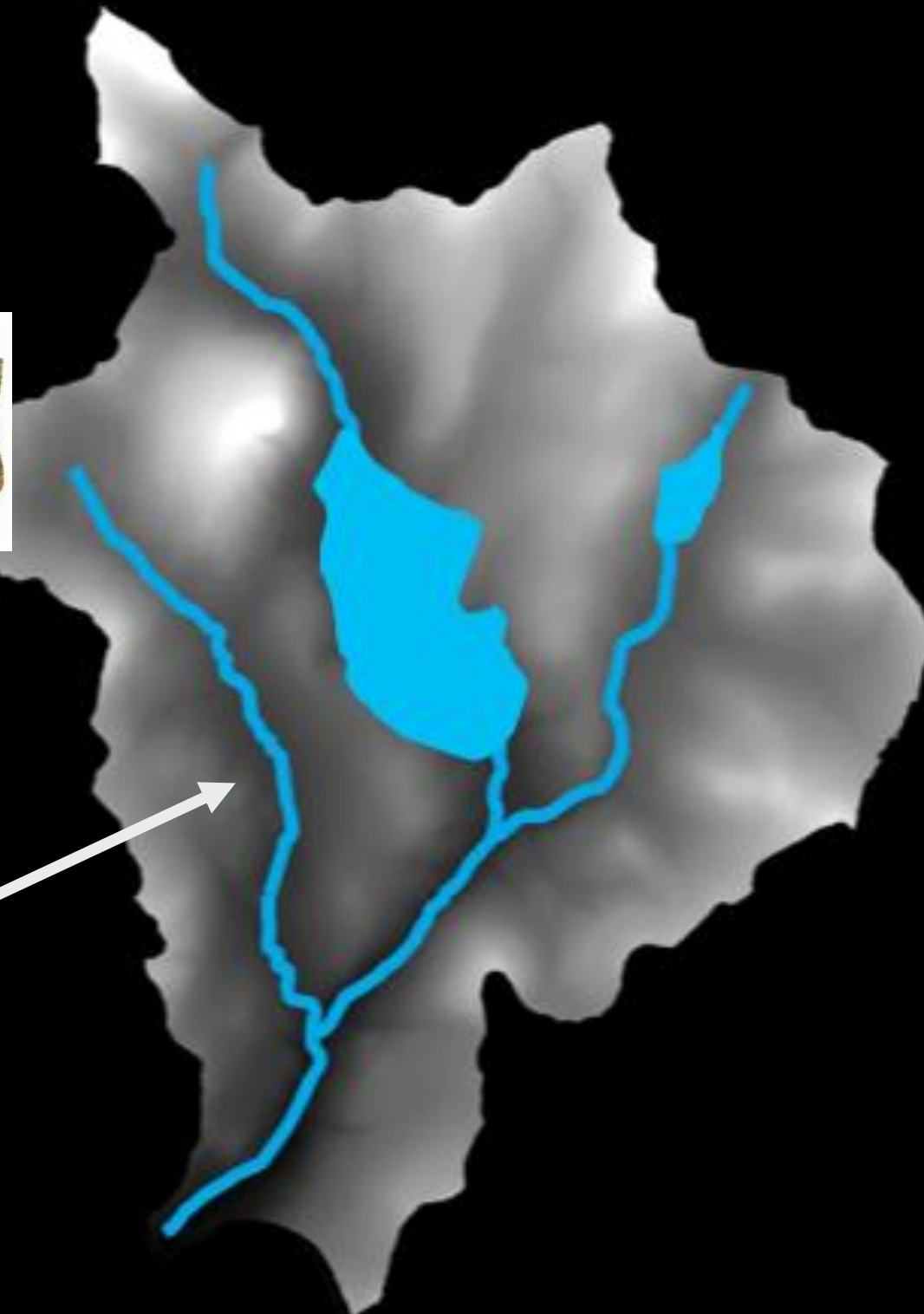
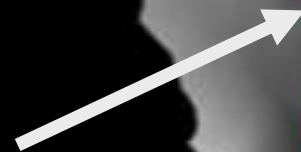
Realistic ISRs for
1% channels

Isaak & Rieman. 2013. *Global Change Biology* 19:742-751.

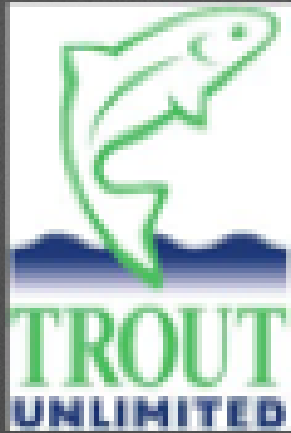
Slow variables



Largemouth Bass



Modularity



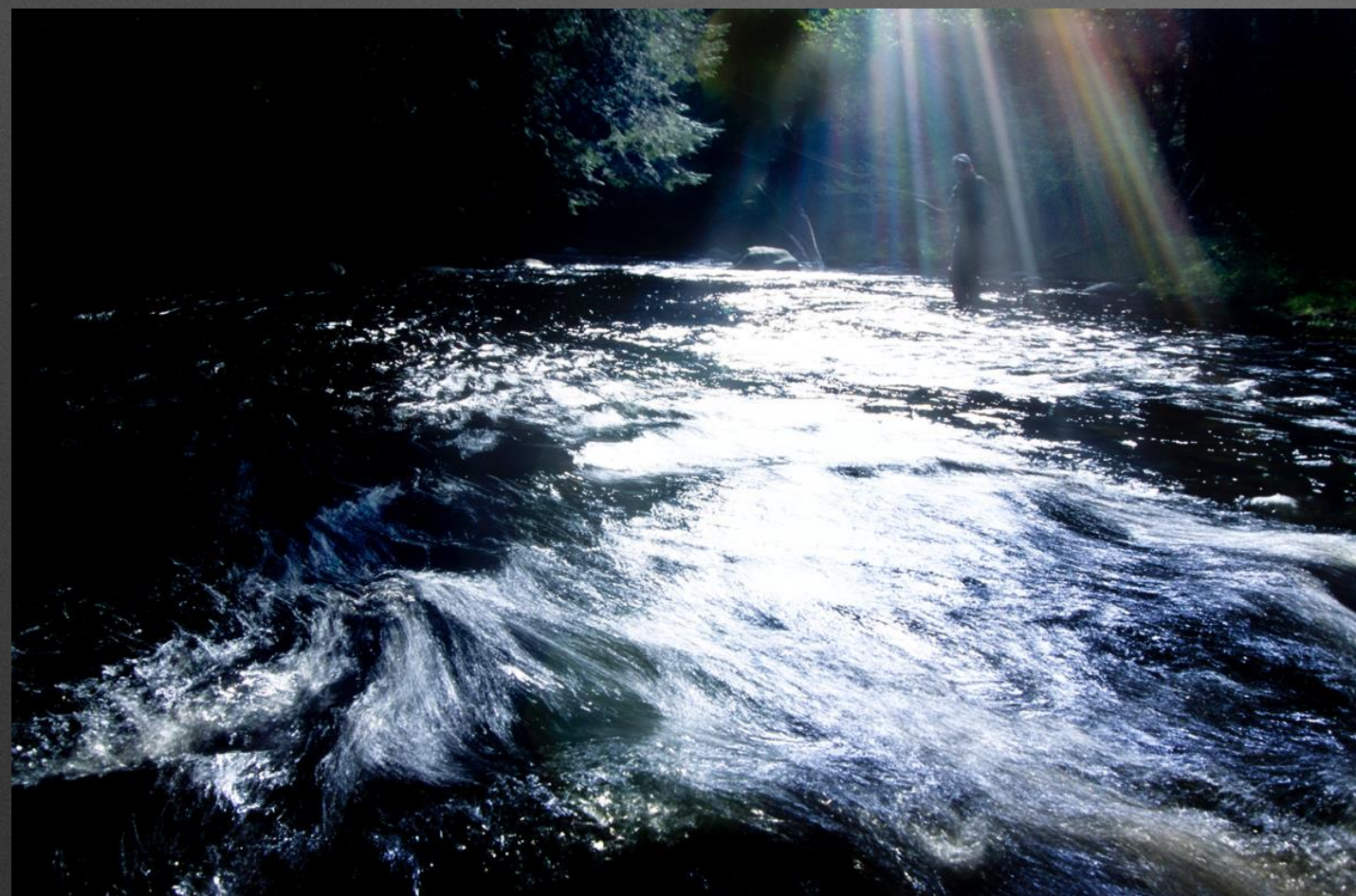
MAINE RIVERS



Overlap in governance



Social capital



Ecosystem Services



Innovation

River corridor management

- Identify, protect and restore, river processes that promote long term river equilibrium (stability) and sustain quality habitat
- Stream geomorphic assessments



**How do you building resiliency in a
landscape where linkages between social
and ecological systems are weak?**