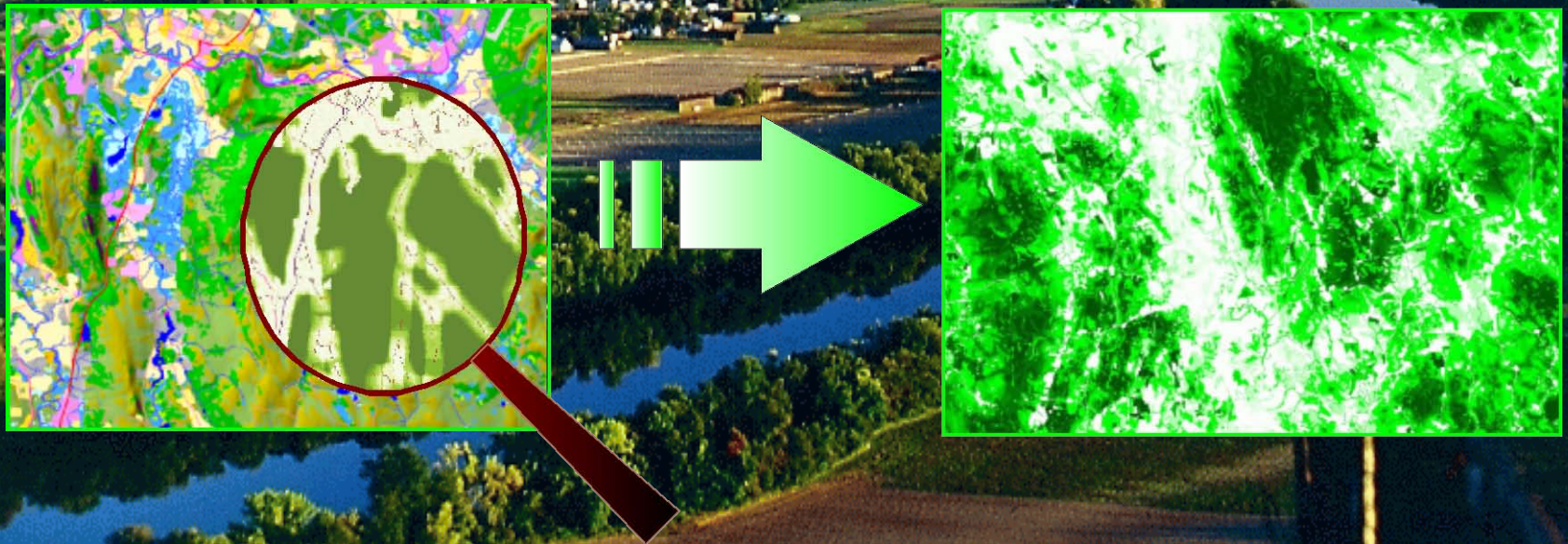


Assessment of Landscape Change in the North Atlantic Landscape Conservation Cooperative: Decision-Support Tools for Conservation

Kevin McGarigal, Brad Compton, Ethan Plunkett,
Liz Willey, Bill Delucca, Joanna Grand, Scott Schwenk

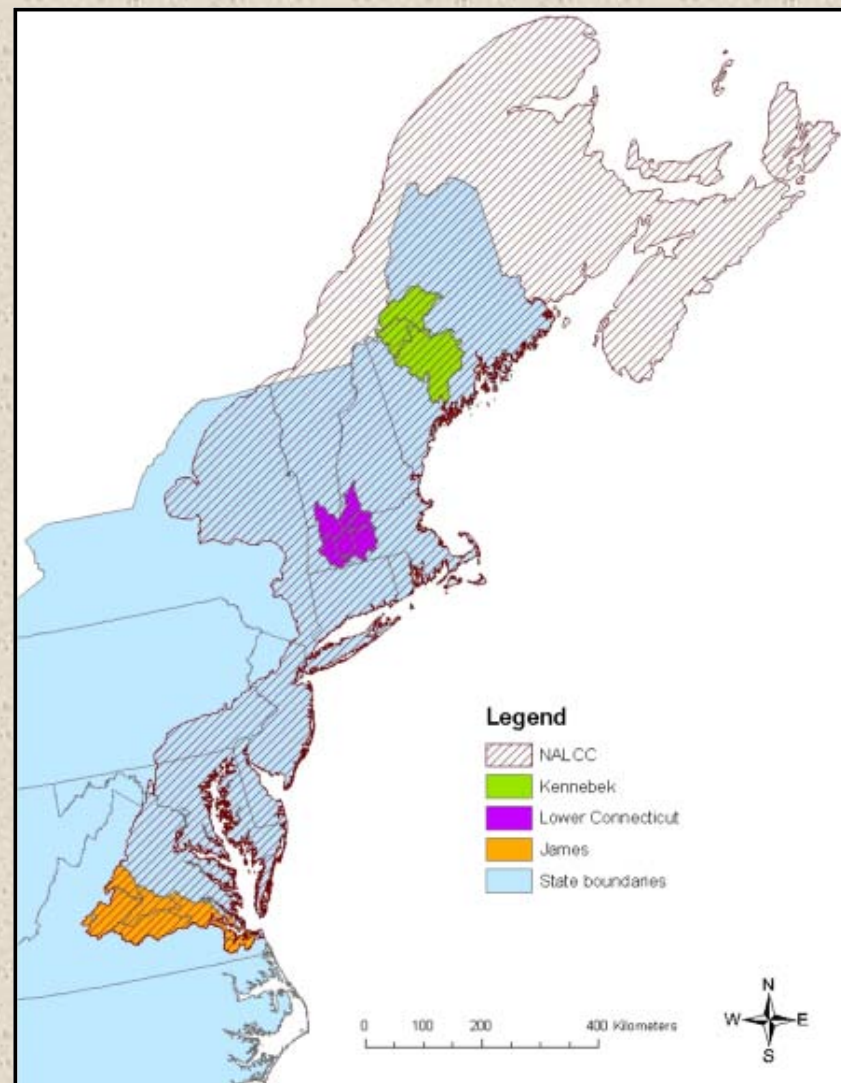


Purpose (phase 1)

Assess changes in ecological integrity (*coarse filter*) and habitat capability for representative species (*fine filter*) under alternative future scenarios driven (initially) by urban growth and climate change that will inform conservation design in the North Atlantic LCC.

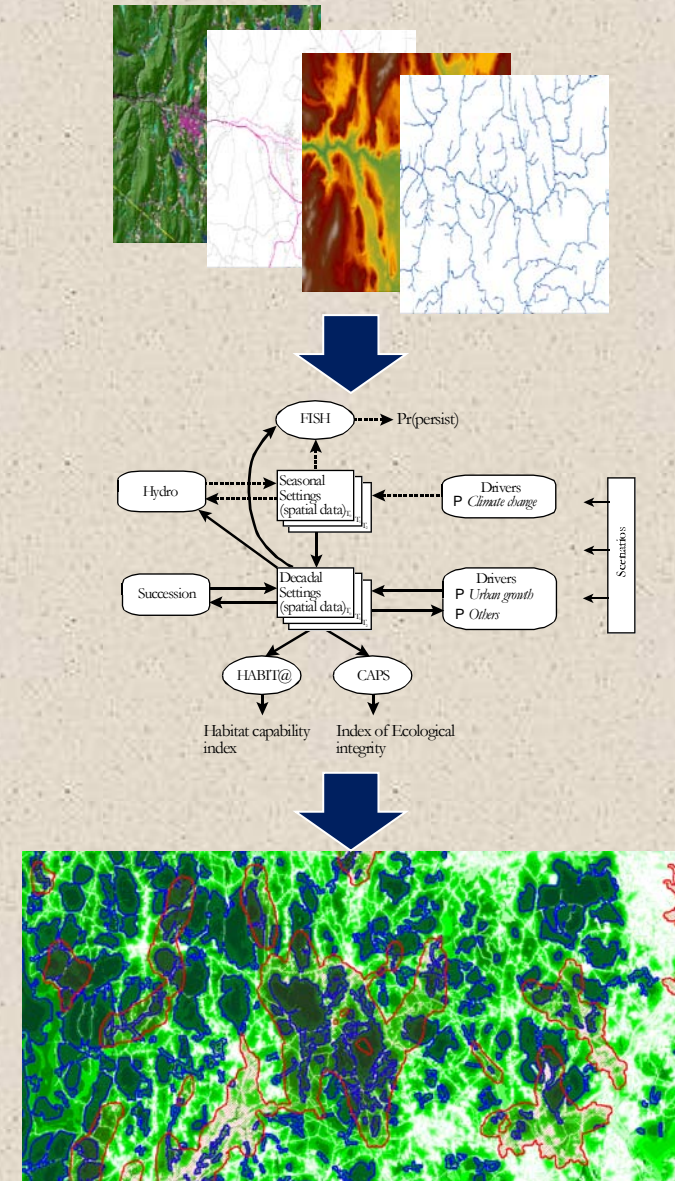
Piloted in 3 watersheds:

- Kennebec (15,264 km²)
- Lower Connecticut (8,579 km²)
- James (16,747 km²)



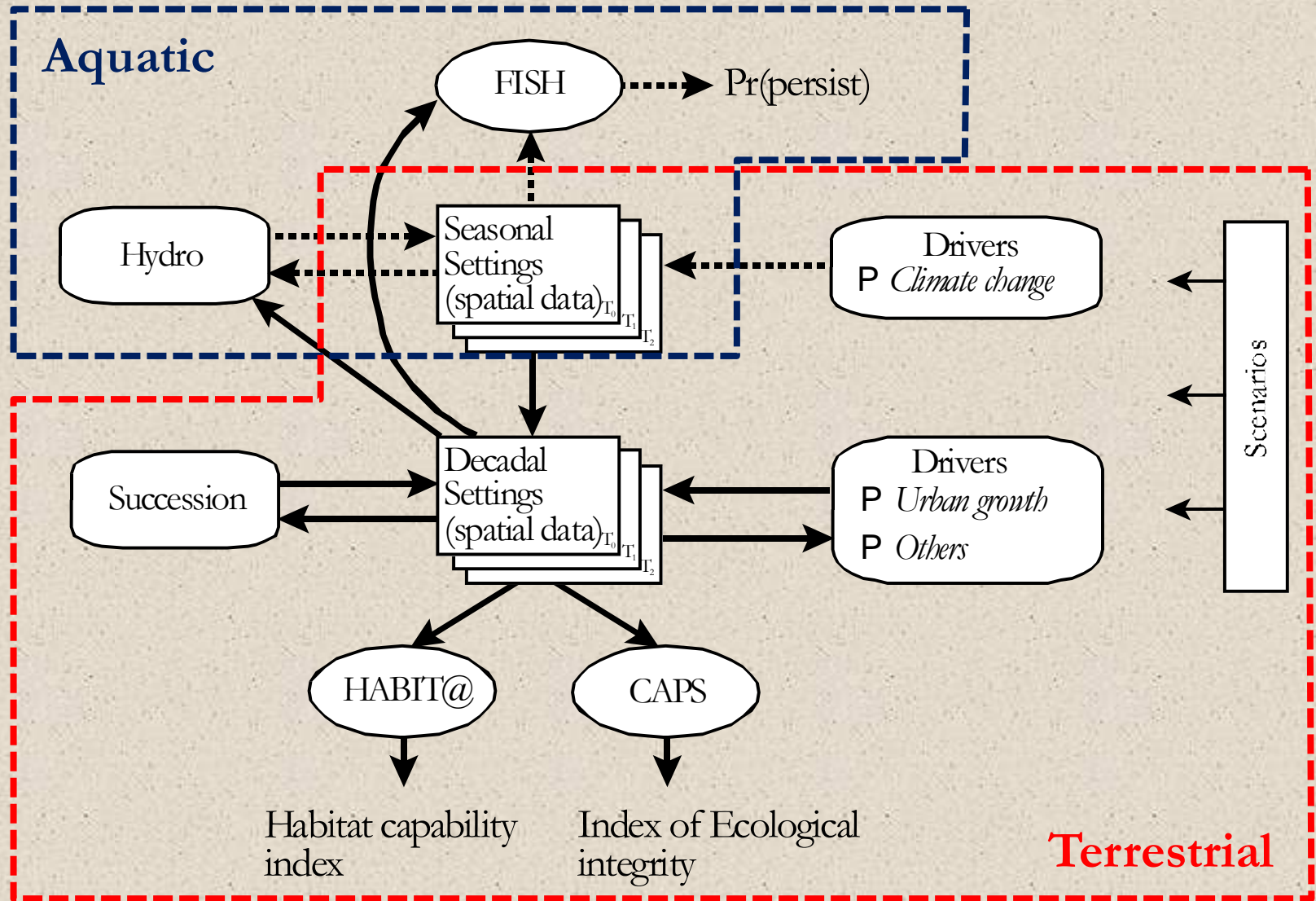
Approach

1. Develop and compile spatial data
2. Build landscape change model – climate change, urban growth, succession
3. Assess landscape ecological integrity (*coarse filter*: intactness, resiliency, buffering, diversity, and connectivity) and habitat capability for representative species (*fine filter*) under alternative future scenarios
4. Identify and map priorities for conservation (land protection, management and restoration)



Approach

Combined model outline



Products & Opportunities

1. Maps of all spatial data layers input to landscape change, assessment and design model for the entire NALCC
2. Maps of ecological integrity under alternative future scenarios for the pilot watersheds
3. Maps of habitat capability for a suite of representative species under alternative future scenarios for the pilot watersheds
4. Maps of conservation priorities for land protection, management and restoration for the pilot watersheds
5. Strategy for maximizing the complementarity of the coarse- and fine-filtered approaches

Project Outlook

- Pilot study complete May 2012
 - Next steps (phase 2):
 - Expand to full NALCC
 - Develop additional modules (drivers, e.g., timber harvest)
 - Upgrade wildlife models to occupancy/population
 - Develop optimal landscape design algorithms
 - Develop decision-support tool
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- www.umass.edu/landeco/research/nalcc/nalcc.html
 - www.fws.gov/northeast/science/nalcc.html

