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## ECOLOGICAL RESEARCH PROGRAM

BUILDING A SCIENTIFIC FOUNDATION FOR SOUND ENVIRONMENTAL DECISIONS

# *Overview of Ecological Research Program (ERP)*

Concept and Basic Approach

By

Rick Linthurst

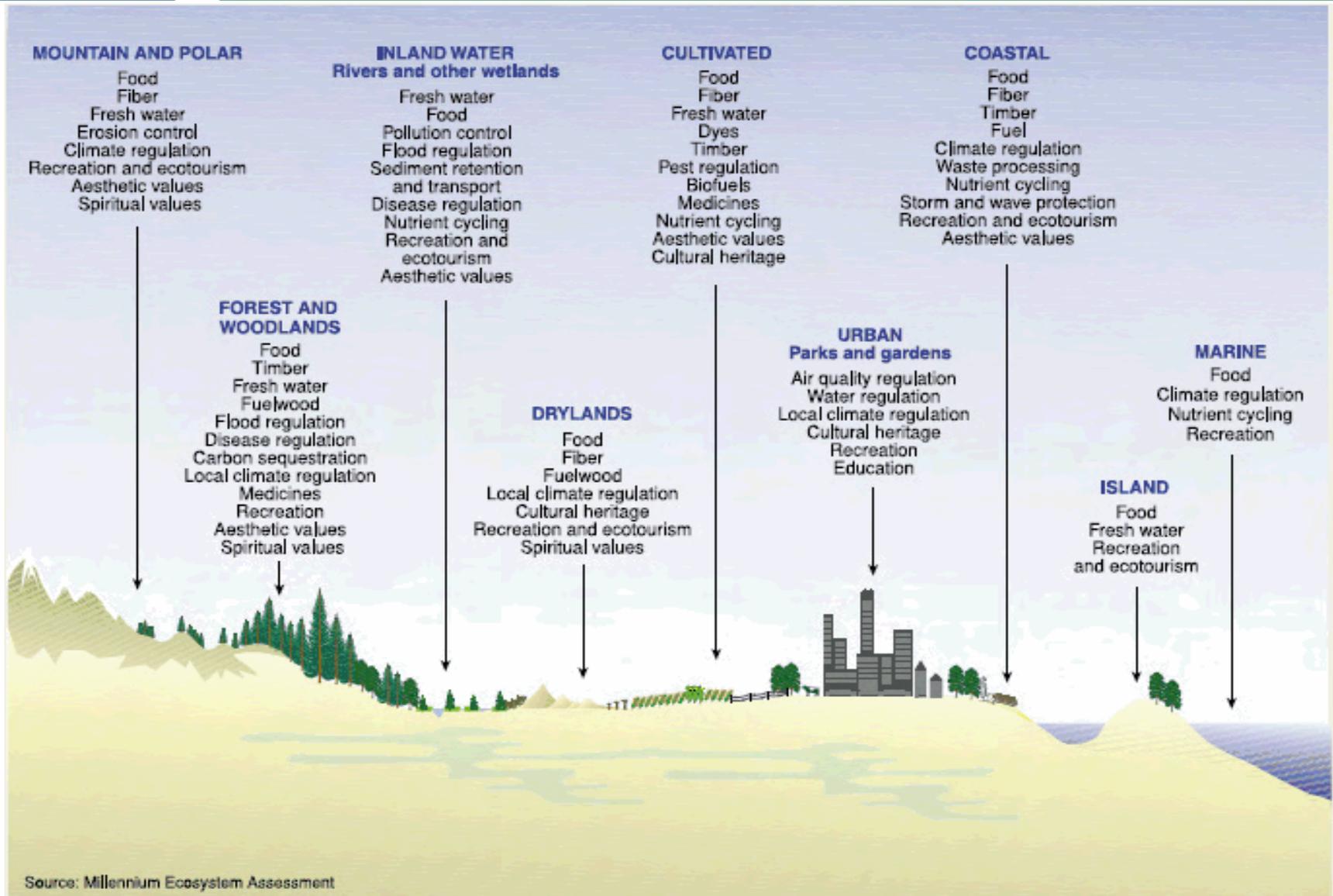
National Program Director for Ecology

# **The Ecological Challenge:**

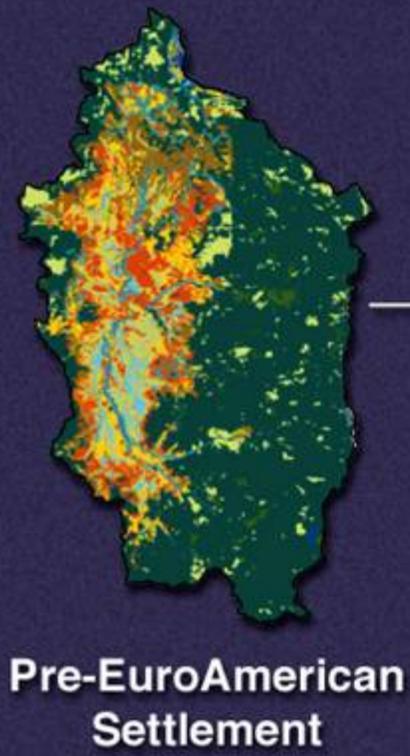
**Change the economic and human  
well-being foundation for  
environmental  
decision-making**

## *Vision*

**To transform the way we understand and respond to environmental issues by making clear the ways in which our choices affect the type, quality and magnitude of the services we receive from ecosystems -- such as clean air, clean water, productive soils and generation of food and fiber.**

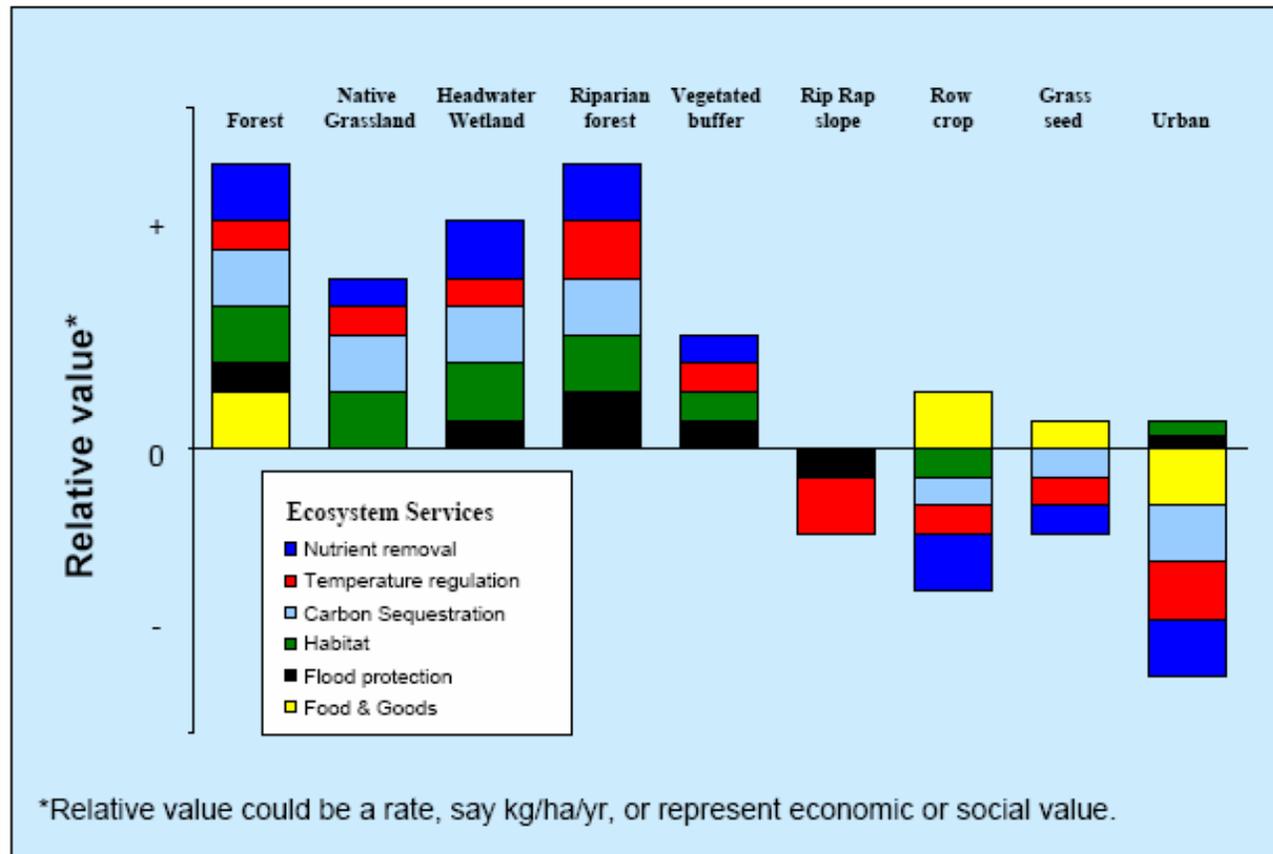


# Trajectories of Landscape Change in the Willamette Basin



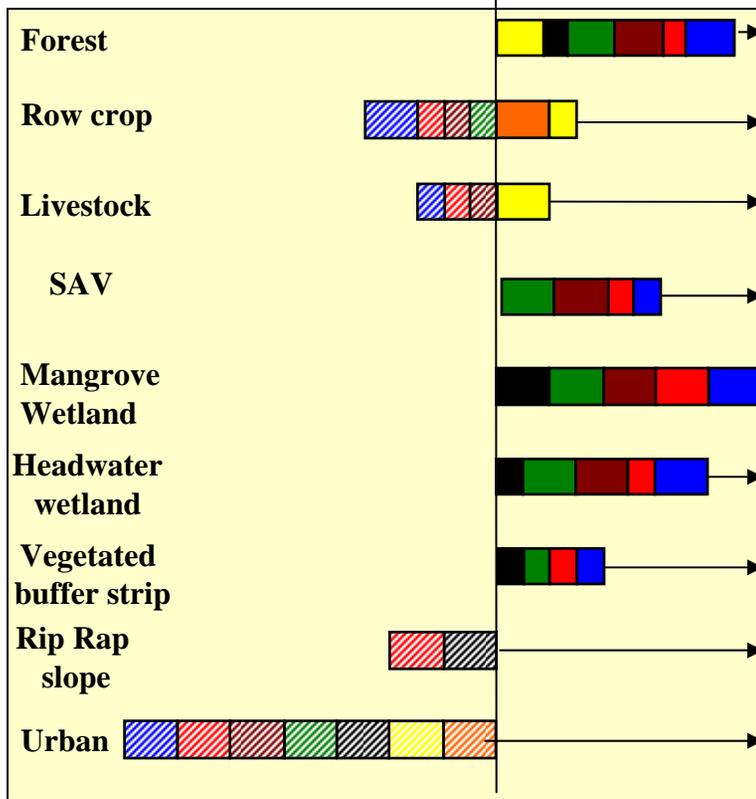
Translating services into quantifiable spatial metrics

## Hypothetical ecosystem service values: *Bundled by land use in the Willamette ESD*

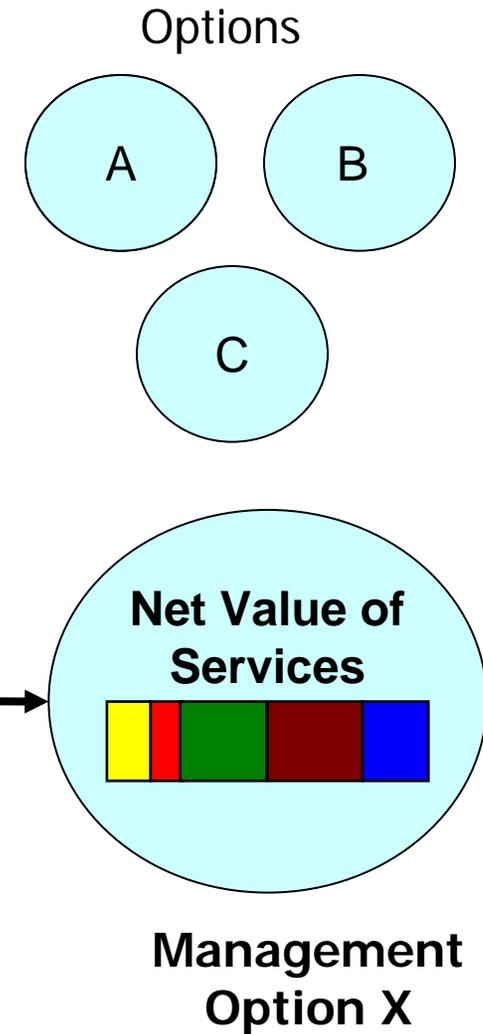


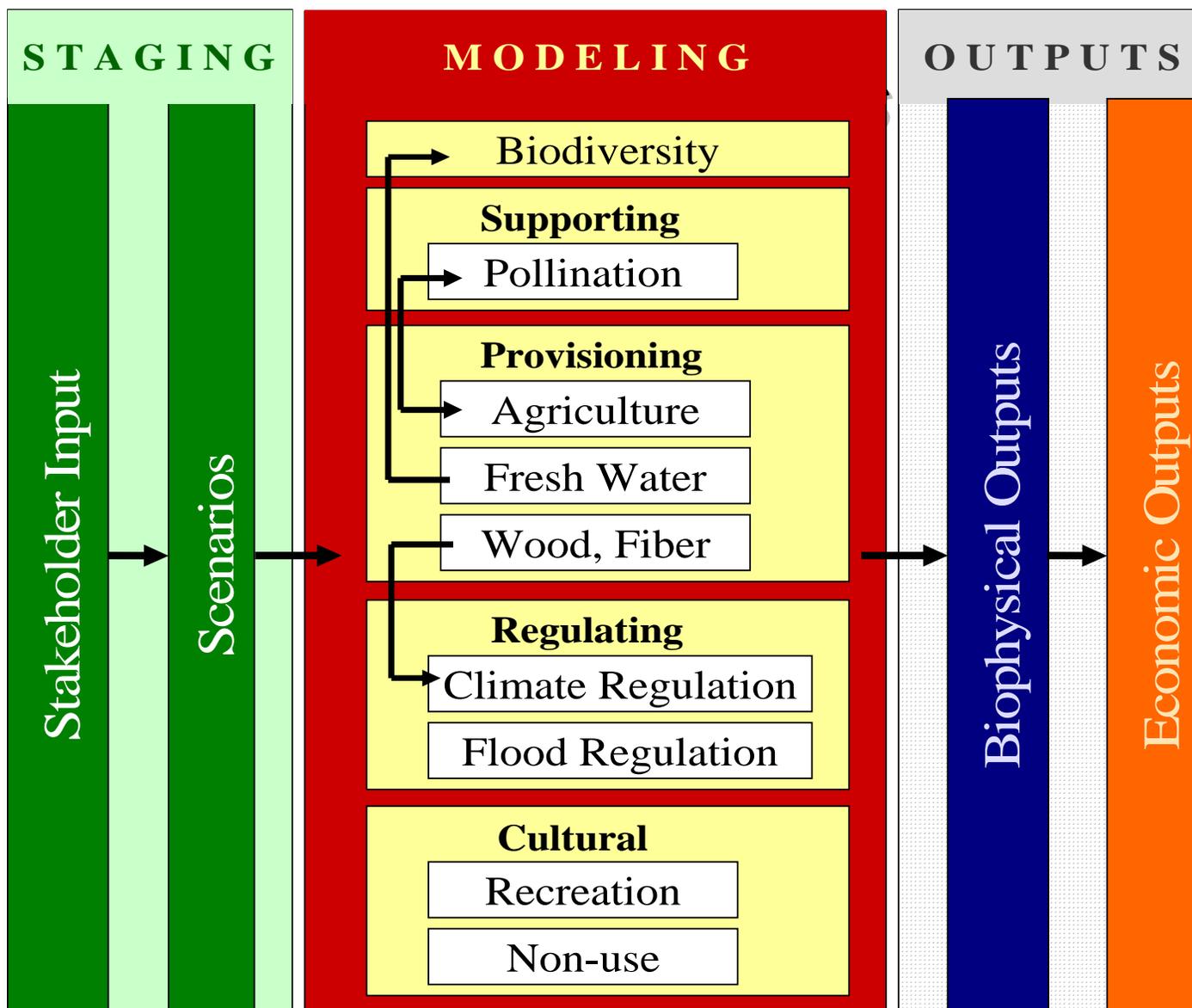
# End Product

## *Relative Ecosystem Services Within an Ecosystem District*



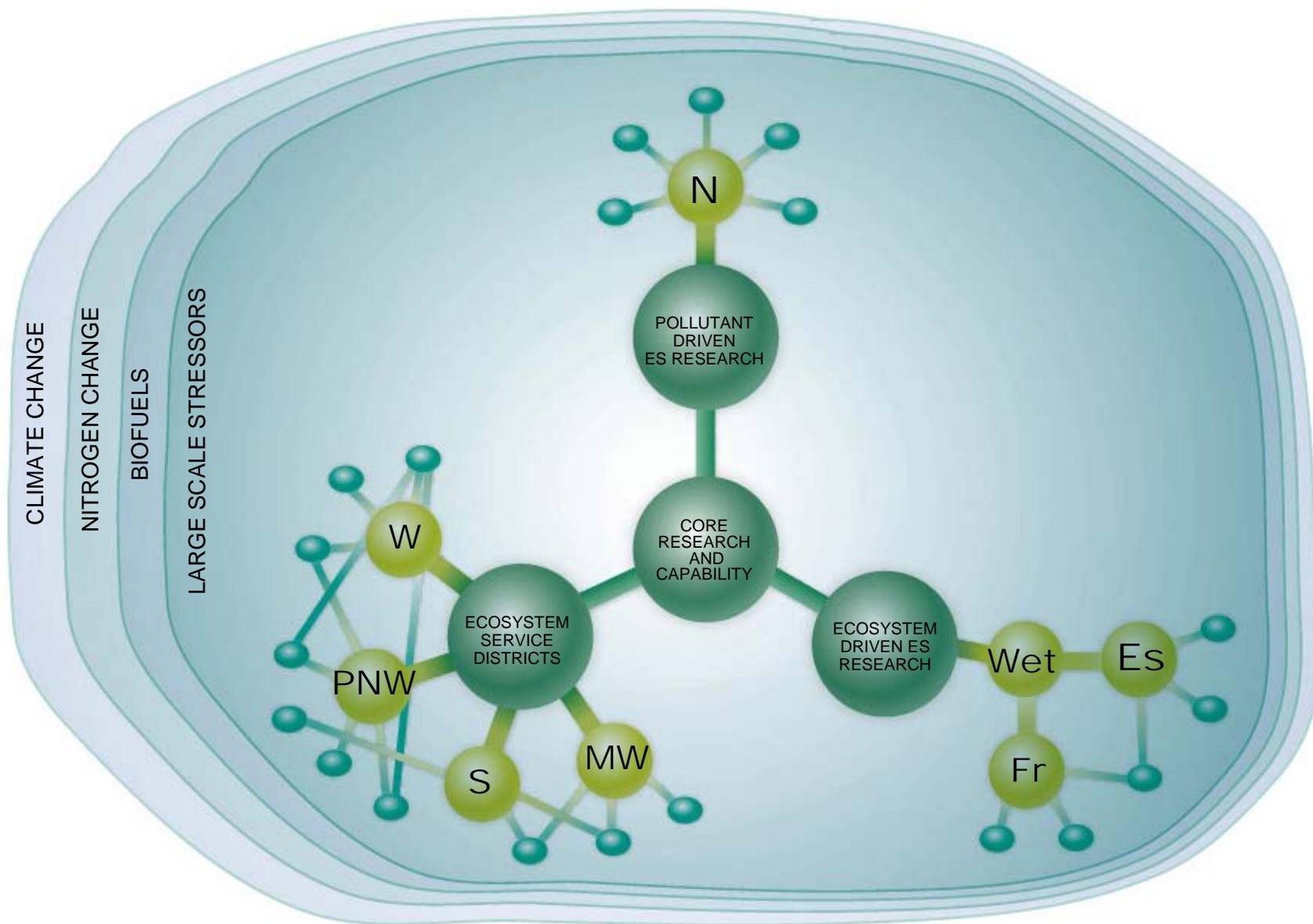
Scaling and Aggregation Under Alternative Management Scenarios







# ECOLOGICAL RESEARCH PROGRAM



## How can ecology help?

- Create geo-spatial products that describe ecosystem services and potential new ecosystem service production functions
- Develop ways to envision alternative combinations of services and to assess trade-offs.
- Develop methods to restore and enhance ecosystem services through restoring or creating new ecological production functions.
- Identify, quantify, and predict ecological “tipping points” that threaten loss of services.
- Provide information to catalyze innovations in policies and the private sector.