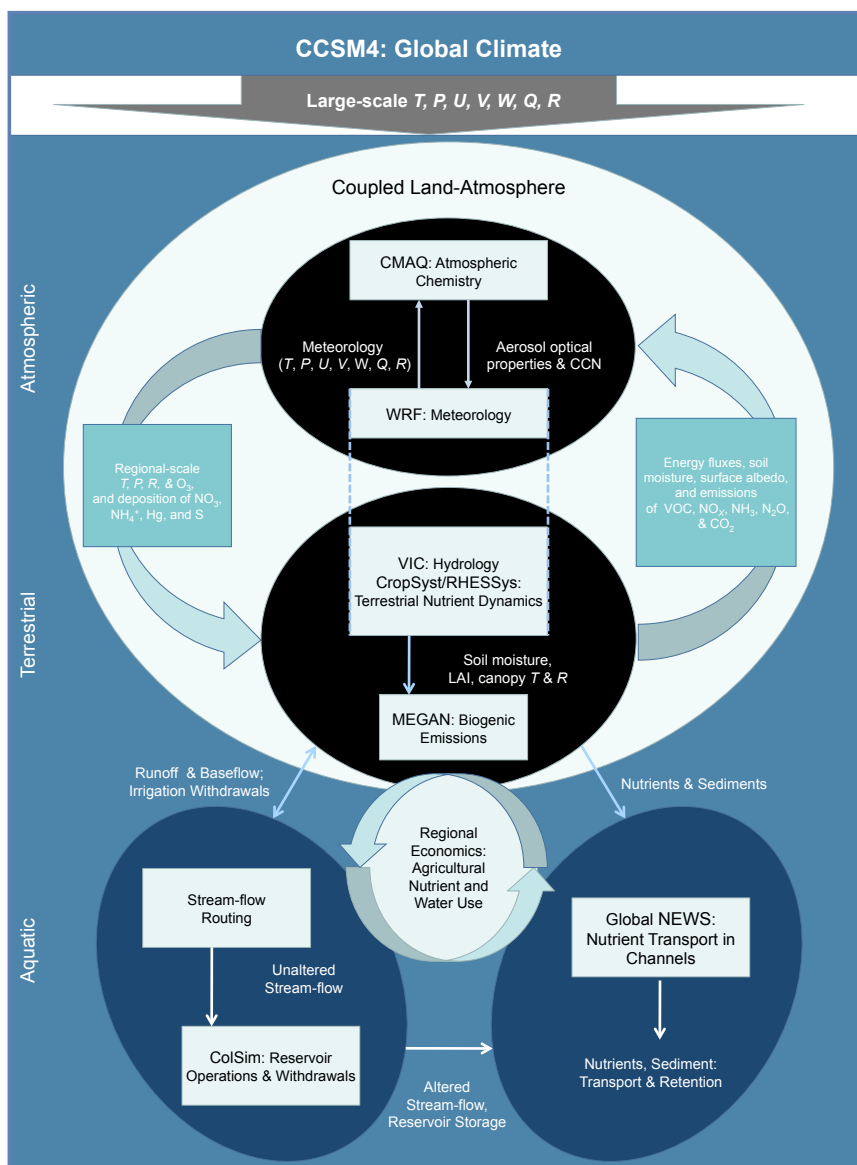


A New Project -- An Earth Systems Modeling Framework for Understanding Biogeochemical Cycling in the Context of Climate Variability

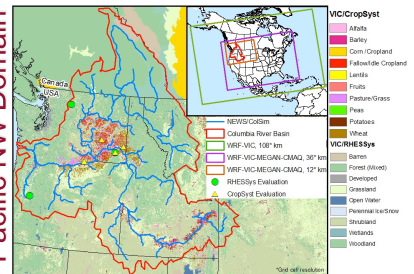
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Pacific NW Domain



Our Motivation:

The 21st Century's Grand Challenges include understanding how changes in the balance of nutrients -- carbon, oxygen, hydrogen, nitrogen, sulfur, and phosphorus -- in soil, water, and air affect the functioning of ecosystems, atmospheric chemistry, and human health. [from a report by the National Research Council to the National Science Foundation (2000)]

Our Project Goal:

to improve understanding of the interactions among carbon, nitrogen and water at the regional scale, in the context of global change, to inform decision makers' strategies regarding natural and agricultural resource management.

Our Approach:

to create a regional modeling framework by integrating a suite of state-of-the-art process-based models that are currently in existence and that are undergoing continuous development.

Our Rationale:

by choosing among the most sophisticated models for each earth system component, and linking these models into a biosphere relevant earth system model (Bio-EaSM), the resulting integrated modeling framework can be continually improved as each contributory component develops.

This 5-year, 18-investigator, six-institution project's mission is:

- to integrate selected, existing earth system models,
- to demonstrate skill in modeling biogeochemical cycles,
- to explicate potentially important responses to climate variability,
- to understand the information needs of both resource managers and stakeholders, and
- to forge among them a partnership founded on a common understanding of our region's dependence on regional biospheric health.

BioEarth



Biosphere-relevant earth system model