Enhancing the role of EPSCoR Jurisdictions in Environmental Management through Cyberinfrastructure

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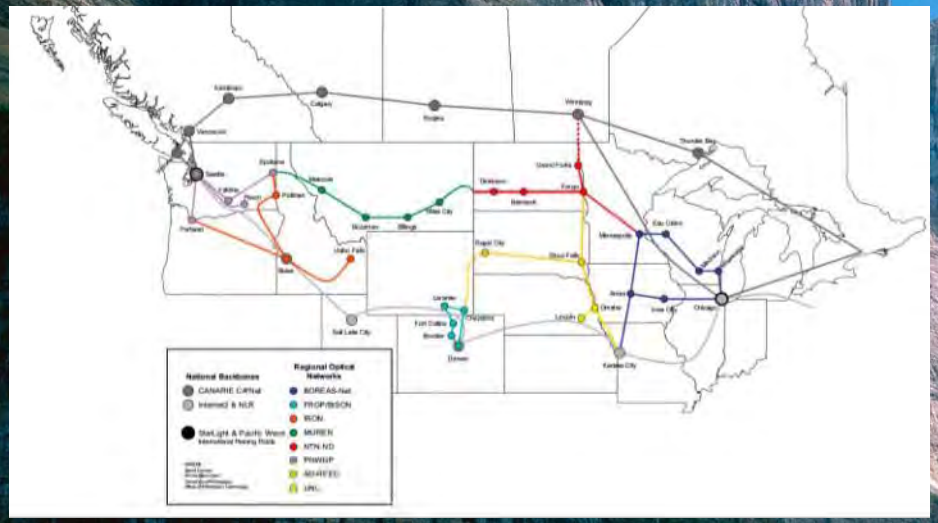
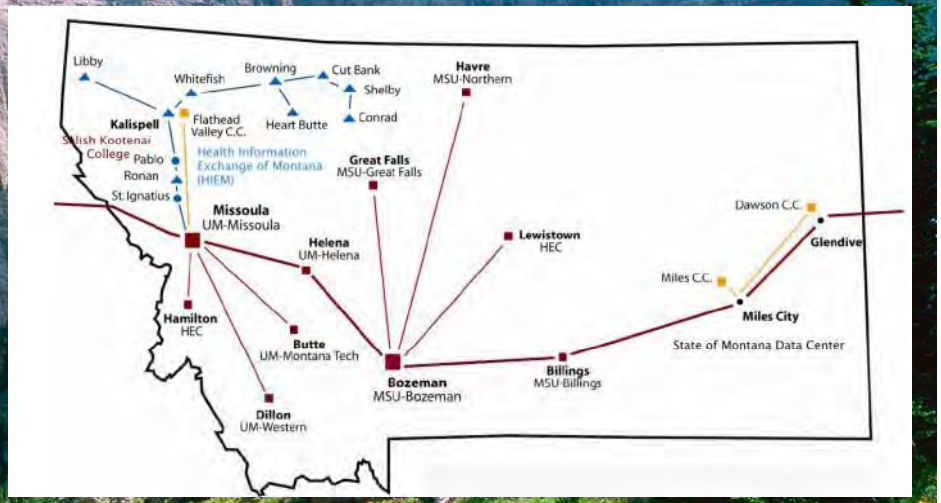
EPSCoR CI Success stories

- Expansion and upgrade of national and regional networks
  - Leveraging multiple funding sources to achieve parity in high speed/high bandwith connectivity
- Advances in Ecological Informatics
  - National, regional and local efforts to improve data quality and data sharing

Northern Tier Networking Consortium: 2003- 2011



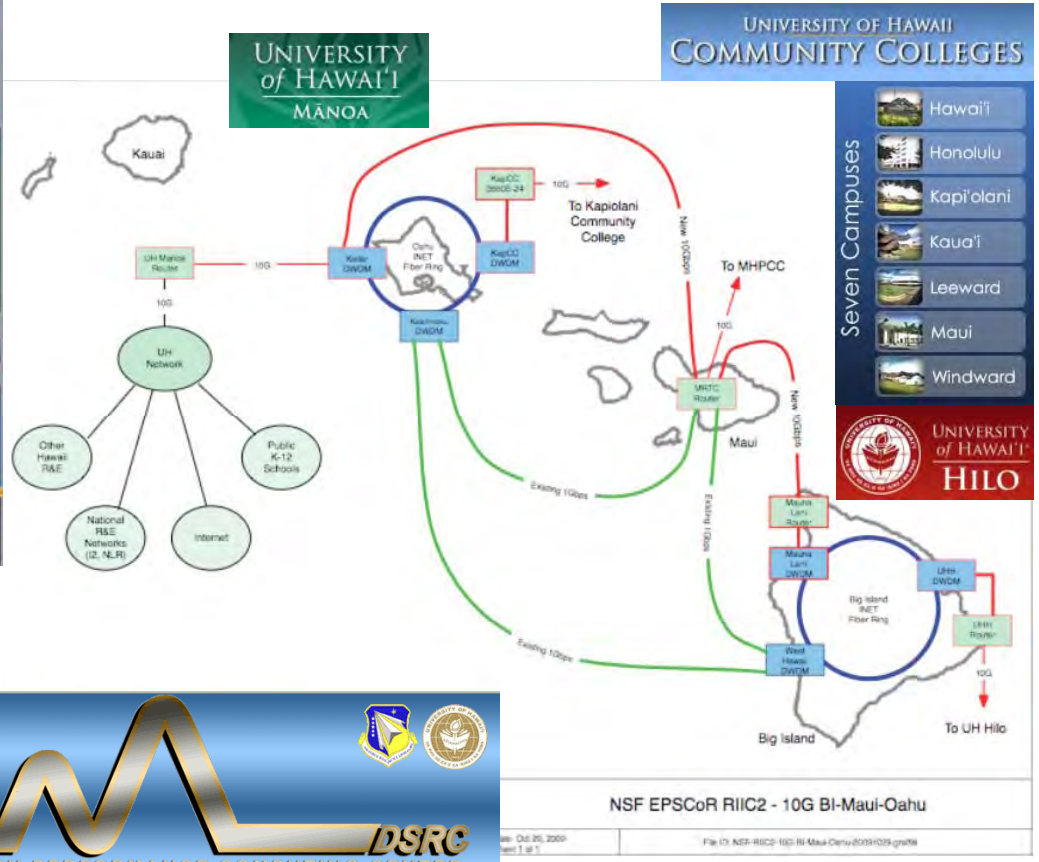
Washington, Idaho, Montana, Wyoming, North Dakota, South Dakota, Nebraska, Michigan, Wisconsin, Minnesota, Iowa and Alaska



Extending the Northern Tier to Strategic Partners
NSF RII C2: University of Montana/Montana State

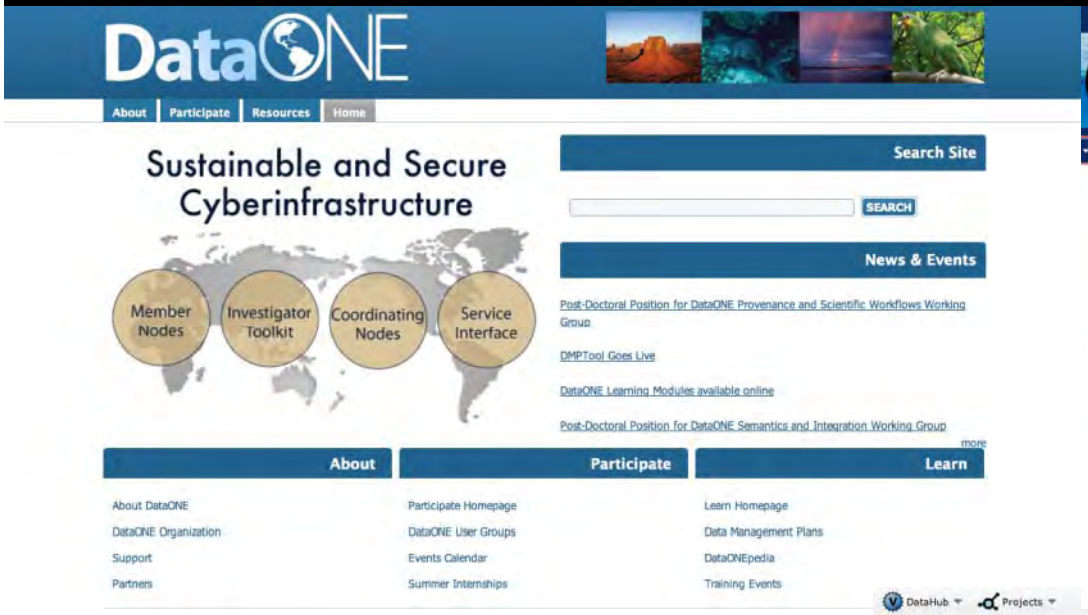
Networking in Hawai'i

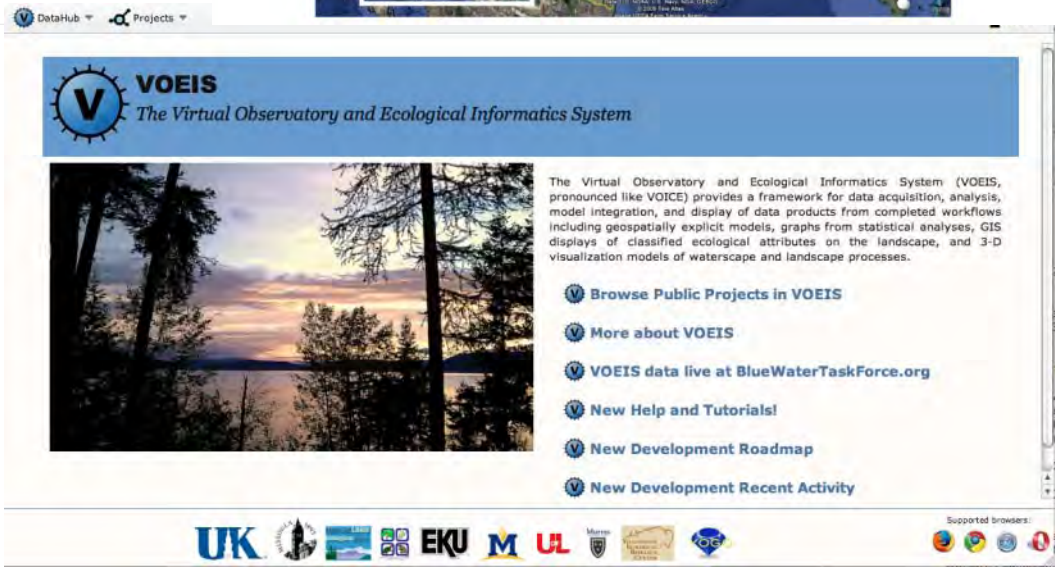
Local - Regional – National - International



NSF IRNC: Australia-Hawaii; Oahu-Seattle
NSF ARI-R2: Oahu – LA/Seattle
NSF EPSCoR: RII C2: Oahu – Maui – Hawai'i
NTIA-BTOP: schools, libraries, campuses

Advances in Eco-Informatics





Community based efforts in tool development, data management, data sharing and education.

Challenges for EPSCoR States

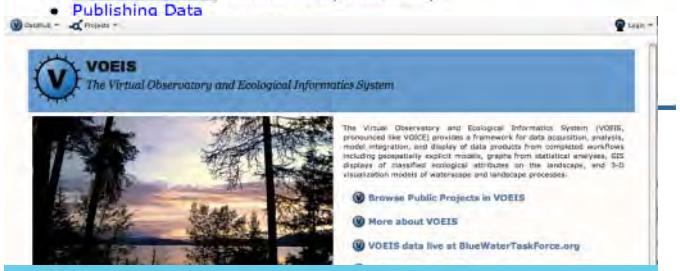
- How can we develop sustainable cyberinfrastructure to address state needs?
  - Projects should engage and serve state stake holders and policy makers.
- How can we communicate and measure research value?
  - Research products should be credible, relevant and necessary for informed decision making.
- How can state-based EPSCoR programs have regional, national and international impact?
  - Projects should be integrated with other national efforts – DataONE, NEON, Earthcube – etc.

High value accessible data

Data Access, Publication and Analysis

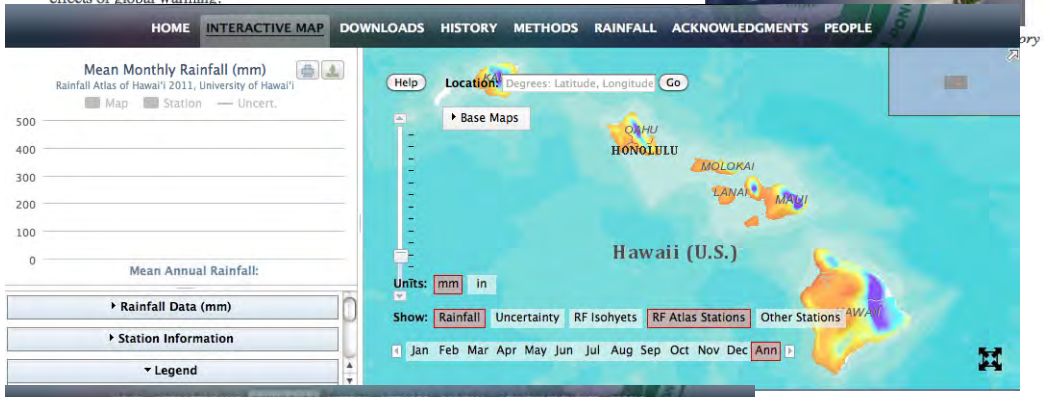
CUAHSI has developed a Hydrologic Information System (HIS), based on a services oriented architecture, that allows scientists to publish data they collect and find data collected by numerous agencies as well as other universities using HydroDesktop, the first HIS client. All HIS software is open source and collaboration on its development is encouraged.

- Understanding the NSF Data Management Plan Requirement
- Discovering Data: Download HydroDekstop
- Publishing Data



What is the Rainfall Atlas of Hawai'i?

The Hawaiian Islands have one of the most diverse rainfall patterns on earth. The mountainous terrain, persistent trade winds, heating and cooling of the land, and the regular presence of a stable atmospheric layer at an elevation of around 7,000 ft. interact to produce areas of uplift in distinct spatial patterns anchored to the topography. The resulting clouds and rainfall produced by this uplift lead to dramatic differences in mean rainfall over short distances. Knowledge of the mean rainfall patterns is critically important for a variety of resource management issues, including ground water and surface water development and protection, controlling and eradicating invasive species, protecting and restoring native ecosystems, and planning for the effects of global warming.

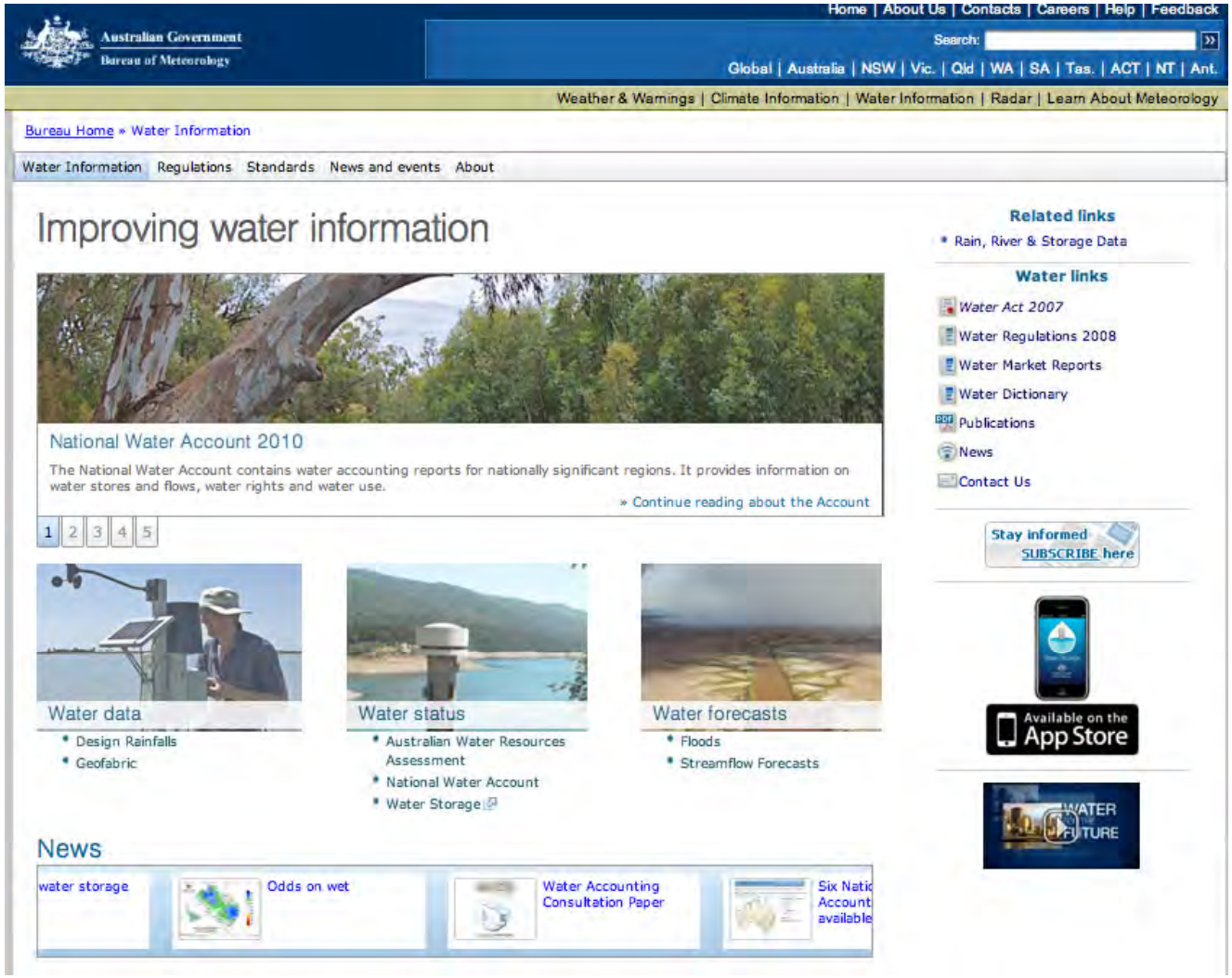


Innovative ideas for EPSCoR States

- Create opportunities to combine and leverage efforts in cyberinfrastructure
  - Eco-informatics focus – nine EPSCoR States
    - Alaska, Hawai'i, Idaho, Kansas, Kentucky, Montana, Nevada, New Mexico, Oklahoma
- Create flexible funding models to allow states to focus on a common regional need or goal
  - Leverage EPSCoR talent, expertise and resources across jurisdictions to find solutions.

Stakeholders + Synergy

……an example from downunder



- Stakeholder driven
- Credible data
- Relevant predictions
- Accessible to all

Bureau of Meteorology
Australian Government

References and Links

- Northern Tier Networking Consortium
  - http://ntnc.org
- DataONE
  - http://dataone.org
- CUAHSI
  - http://cuahsi.org
- VOEIS
  - http://voeis.msu.montana.edu
- Blue Water Task Force
  - http://Bluewatertaskforce.org
- Hawai'I Rainfall Atlas
  - http://rainfall.geography.hawaii.edu
- Water Information
  - http://www.bom.gov.au/water/