Idaho National Laboratory

Mountain West Water Institute

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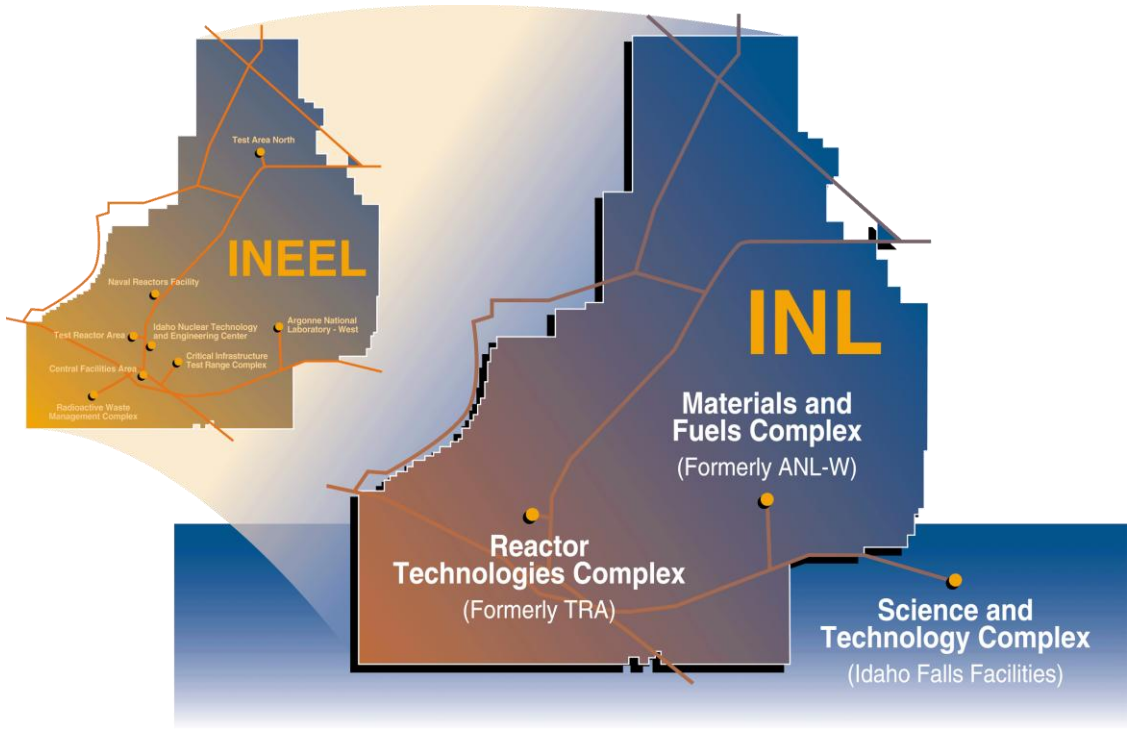
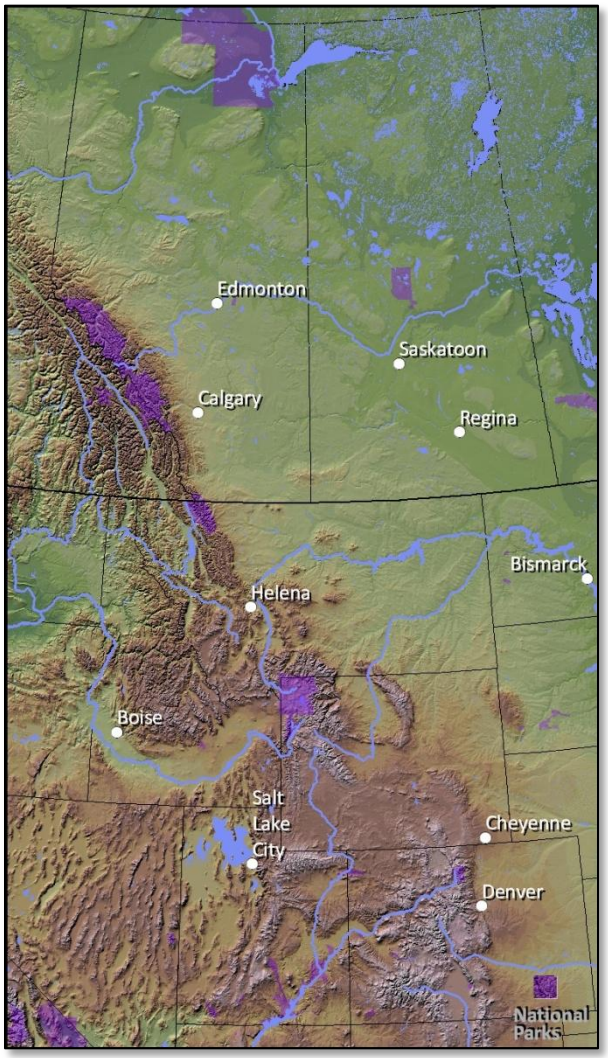
Idaho National Laboratory

INL is a U. S. Department of Energy National Laboratory

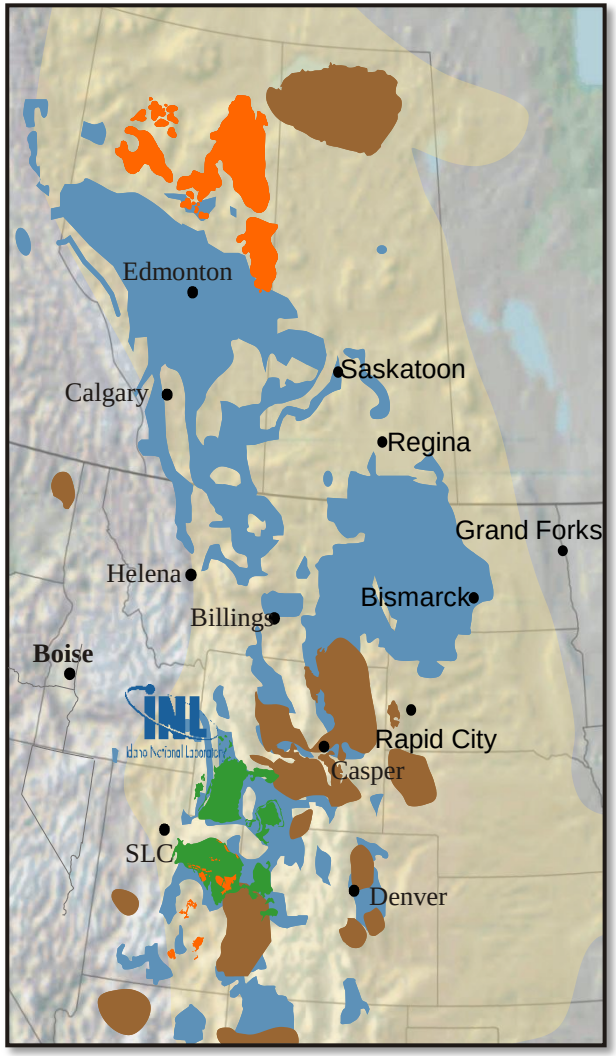
- >4,000 scientists, engineers, technicians and other staff
- Three S&T campuses on 890 mi^2 site
- 60 year history of developing and testing advanced technology
- National Environmental Research Park



Water in the Western Energy Corridor



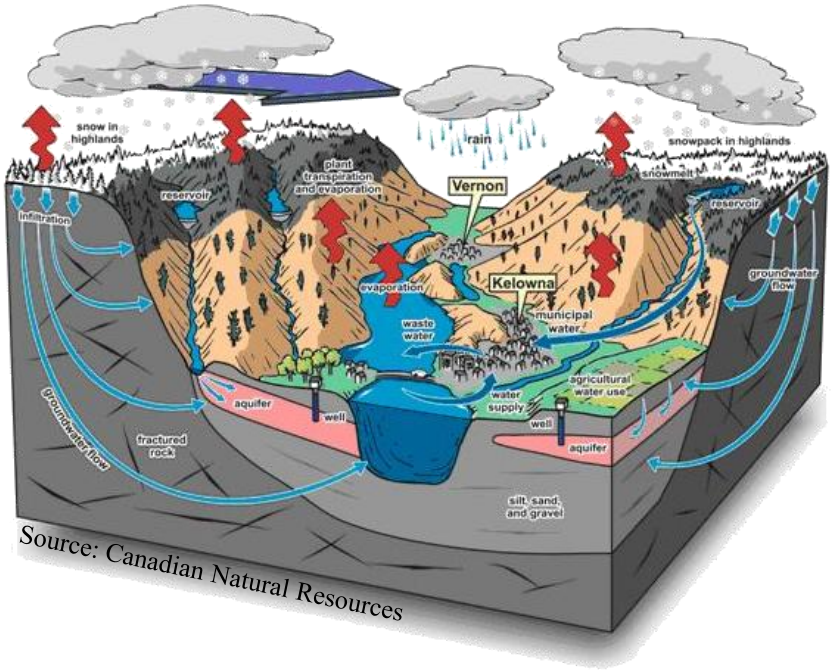
The headwaters of major western rivers and several environmentally sensitive national parks are located in the Western Energy Corridor



The Challenges

Competing interests face decreasing water availability due to population growth and large scale climate variability. Serious constraints on available water quantity and quality have implications for:

- Energy
- Agriculture
- Public health
- Ecosystem integrity
- Economic development
- Regional vulnerability of water & energy infrastructure



Source: Canadian Natural Resources

Advances in science and technology can play a major role in meeting these challenges.

Western Water Challenges/Next Steps

WGA reports contained a plan for addressing identified water needs. Significant among the next steps, recommendations and resolutions were:

- ". . . reducing inefficiencies caused by the present mode of project-specific responses to competing demands, contradictory actions by multiple state, local and federal water agencies, and hastily conceived reactions to the latest real or perceived crisis."
- "State and federal water resource agencies should work together to provide universal access to the water-related data collected by all state, local, and federal agencies, as well as tools and models that better enable the synthesis, visualization and evaluation of water-related data, including that to be shared with local governments."

➔ **This is the intent of the Mountain West Water Institute**

MWWI Brings a Host of Capabilities and Tools

Tools and capabilities address needs identified by WGA:

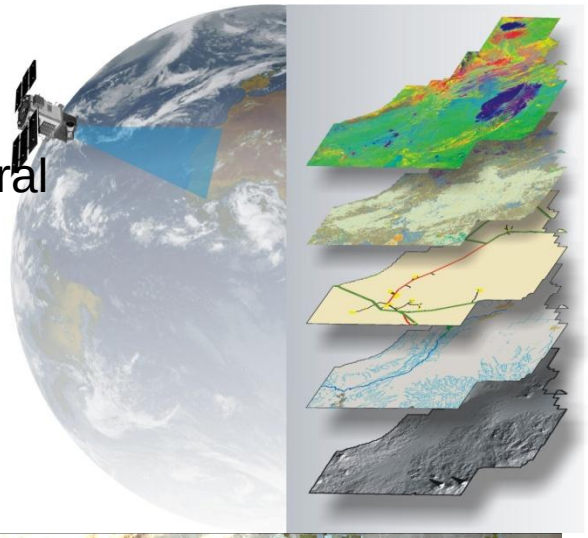
- Energy-Water Systems R&D
- Water Cleanup and Recycle Technology
- Water Security Technology
- Climate Effects Tools and Research
- Water Modeling

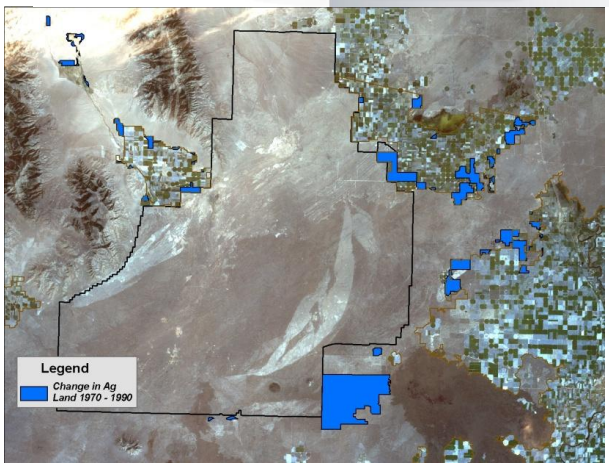
"Federal, state, and local agencies should further their efforts to investigate the availability and use of brackish waters to meet future water needs…" [can discuss current mid-year LDRD call, which supports proposals in brackish water treatment, water reuse/recycle and modeling.]

"The Bureau of Reclamation, Corps of Engineers, Department of Agriculture, Department of Energy, EPA, NOAA and USGS should support and coordinate research and development …, focusing on reducing the costs and maximizing the benefits, …, such as the impact of emerging contaminants on drinking water as it relates to reuse and recharge." [EPA Collaboration example]

MWWI Examples

- Remote Sensing
  - Applied remote sensing development
  - Climate impacts on energy, water and natural resources
- Advanced Geospatial Analysis
  - Integrated water resource management
  - Assessing/optimizing western energy-water supply/demand
- System Dynamics
  - Physical energy infrastructure
  - Energy economics
  - Environmental systems
  - Social systems
- Advanced Monitoring Systems
  - Cost-effective, real-time monitoring
  - Dam/Levee stability





The Mountain West Water Institute

The **Mountain West Water Institute** is a regional resource for addressing the science and engineering challenges of water management in the Mountain West

- Apply capabilities and technology developed under Federal (DOE+) programs to distributed water data to provide new information, applications and insight for water resources
- Provide scientific basis for improved water management and energy resource development
- Enhance Federal/State collaborative R&D in the Mountain West.