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The Climate Change Factor: Water Utilities Research and Planning

Presentation at American Water Resources Association
Annual Conference
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Introduction

- Climate change has evolved from a science community issue to a global, public concern.
- Water is the fundamental issue in climate change.
- Water utilities have mobilized to create strong pressure for investment in research and infrastructure



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Outline of Presentation

- Overview: User-Driven Research
- Areas of concern to water utilities worldwide
- Research priorities
- Recent, current and planned research



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User-Driven Research in Climate Change and Drinking Water

Organizations that sponsor user-driven water research:

AwwaRF (Water Research Foundation)

WERF (wastewater)

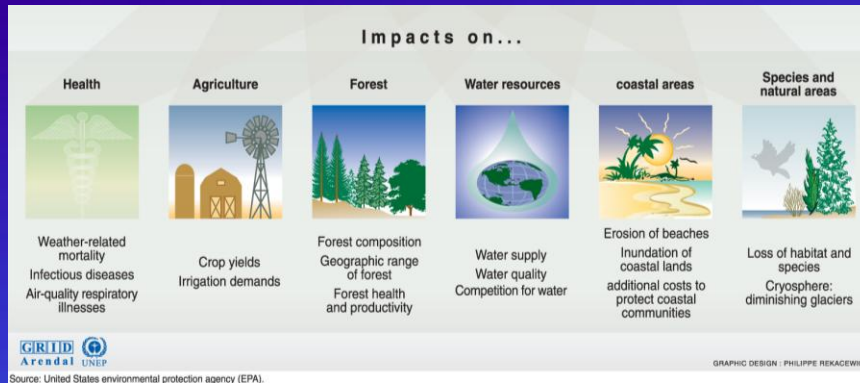
WaterReuse (desal, recycled water)

International & Umbrella (GWRC)



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Potential Climate Changes Impacts



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Issues of Concern to Water Utilities Worldwide

- Water Availability
- Water Quality
- Rising Sea Levels
- More Frequent Extreme Events



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Issues of Concern to Water Utilities Worldwide (cont'd)

- Operational Reliability
- Energy & GHG Emissions
- Financial and Institutional Impacts



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Research Priorities

January 2008

- International workshop identified over 50 high-priority research projects in all areas listed above.

AwwaRF partners: UKWIR, WERF

(top priorities are listed as extra slides at end)



- AwwaRF established Climate Change Strategic Initiative: \$1 million annually

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Research Priorities (cont.)

Climate Change Strategic Initiative Objectives

1. Enhance and improve water industry awareness of climate change issues and impacts.
2. Provide water utilities with a set of tools to identify and assess their vulnerabilities, and develop effective strategies.
3. Provide water utilities with a set of tools to assess and minimize their carbon footprint.
4. Communicate information to internal/external stakeholders.

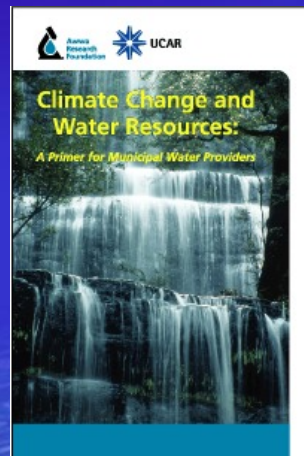


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Recent Research

Climate Change and Water Resources: A Primer for Municipal Water Providers 2006

Partner: National Center for
Atmospheric Research.



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Current Research 1

- Incorporating Climate Change Research in Water Utility Planning: A Collaborative, Decision Analytic Approach (3132).
- Evaluating Effects of Climate Change on Water Quality Planning Criteria and Design Standards (4154).
- Joint Front Range Climate Change Vulnerability Study (4205)



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Current Research 2

- Navigating Climate Change Information and Data: A Guide for Water and Wastewater Utilities (4204)

AwwaRF partners: UKWIR, WERF

- Identifying and Developing Climate Change Resources for Water Utilities: Content for Central Knowledge Repository Website (4208)



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Current Research 3

- Potential Impacts of Underground Carbon Geologic Sequestration on the Quality of Groundwater Supplies (4203)
- Greenhouse Gas Emission Inventory (4156)
(Partners: Global Water Research Coalition, California Urban Water Commission)
- Mitigating Impacts of Changes of Watershed Vegetation on Source Water Quality and Quantity (4009)



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Planned Research

- **“Smart Regulation:”** evaluating the federal regulatory framework to identify barriers to utility efforts to implement climate change sensitive practices.
- **Vulnerability assessment and risk management tools**
- **Changes in water use in regional scenarios of climate change.**
- **Climate-resilient planning and design of water assets.**
- **Carbon sequestration (Objective to be identified via white paper)**



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Planned Research 2

- **Energy Efficiency in the North American Water Supply Industry: A Compendium of Best Practice and Case Studies (4223)**
Partners: GWRC and NYSERDA
- **International Toolbox for Water Utility Energy Management Decision Support (4224)**
Partner: Global Water Research Coalition
- **Carbon accounting in the capital improvement planning process (4258)**



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Suddenly, Bob realizes that he's "part of the problem".



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Questions?

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(changing to Water Research Foundation Jan 2009)

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Thanks!



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