

Barriers to Weather and Climate Forecast Use by Community Water System Managers

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1. Context



What are the barriers that prevent Community Water System (CWS) managers from incorporating weather and climate forecasts into their planning?

We compared perceptions of managers in:

- The Pennsylvania portion of the Susquehanna River Basin (SRB)
- South Carolina

The comparison looked at whether perceptions varied because of different physical or institutional contexts. This paper summarizes and synthesizes results presented in several published and unpublished works.

2. Methods



Mail surveys

- 784 CWS in the Pennsylvania SRB
 - 52 percent response rate
- 527 CWS in South Carolina
 - 51 percent response rate

76 follow-up interviews

Results. Three key barriers prevent managers from incorporating weather and climate forecasts in their planning.

3. Barriers & Implications

1. Risk Perceptions



- CWS managers who find weather and climate forecasts reliable are no more likely to use them than managers who find them unreliable

- Managers most likely to use forecasts are those who have experienced weather and climate problems in the recent past

Implications

- Simple forecast delivery to potential users may be insufficient
- Forecast purveyors must convince potential users that their water resources are vulnerable to weather and climate despite the absence of recent adverse events

2. Contextual Concerns



Managers' concerns about weather and climate vary with their:

- Exposure to adverse events
- Physical context (water source, system size, and physical geography)
- Institutional context (financial, regulatory, and management milieu)

Implications

- Vulnerability and information needs assessments must consider the physical and institutional contexts of the resource systems and their managers
- Achieving a better understanding means working with resource managers directly

3. Alternative Expectations



- Managers expect more difficulties with financial and water quality issues than with their ability to find water and supply it to their customers

Implications

- Managers view forecasts as more salient when put into the context of system operations and management needs
- Presenting managers with a general U.S. climate forecast showing below-normal precipitation for the coming season may not generate as much interest as a state-specific Palmer Drought Severity Index that suggests a possible drought watch

4. Conclusions



The three barriers and their implications show that personal experience has a powerful influence on perceptions of vulnerability. They suggest that both physical and socioeconomic contexts are important in shaping these perceptions. They demonstrate that these contexts can be highly specific and that perceptions, therefore, can be highly specific. They also show that information providers must present their information in ways that are salient to potential users, which may require customization for specific user groups. In sum, *effective communication of forecasts, forecasts must be specific to the historical, physical, and institutional contexts of the managers and must relate to their ability to realize performance objectives threatened by weather and climate.*