



Expert Perspectives on Science, Politics, and Water Management in Phoenix



Arianne Peterson, Peter Howe, Margaret White, Dave White, and Elizabeth Corley
Arizona State University, Decision Center for a Desert City

Improving Communication

The challenges of water resource management in Phoenix require a fine balance of science, politics, and social values in decision making. With the ultimate goal of improving the interface between scientists, managers, policymakers, and citizens, our research seeks to **understand expert managers' perceptions of water resource management in the Phoenix area.**

This research is part of a larger effort to help Arizona State University's Decision Center for a Desert City promote better relationships between all stakeholders in the Phoenix water arena.

We interviewed four managers from each of these area institutions:

- Arizona Dept. of Water Resources, a state-level coordinating body
- Salt River Project, a semi-public water and electrical utility that manages surface water from the Salt and Verde rivers
- Phoenix-area municipalities



We conducted semi-structured interviews in July- August 2005, averaging 45 minutes in length.

Interview Topics

- **Successes and challenges in water management**
- **Interactions of science, politics, and social values**
- **Causes and management of uncertainty**

Professional Insights

Successes and Challenges in Water Management

Most agreed that the greatest achievements in Arizona water management were completion of the Central Arizona Project (CAP), the 1980 Groundwater Management Act, assured and adequate water supply regulations, and Active Management Areas.

“Without the CAP, half the Valley would have to go home.”
“People are getting used to...having limits placed on their water use.”

Common concerns included the effects of population growth, rural water supplies, current and potential water rights conflicts, financial problems, drought, and public perceptions.

“We don't look at land use and water. So we have this growth that occurs on one plane, and we have water management that occurs on another plane, and they're not related... particularly in rural AZ, outside of our AMAs.”

Interactions of Science, Politics, and Social Values

One group of managers described science as a tool used to inform, justify and legitimate decisions, with scientists considered neutral knowledge producers

“As long as you can influence the policy and politics as much as you can with sound science, then you've done your job.”

Others described the scientific, political, and social spheres as interrelated and recursive.

“Often you realize you don't want to invest a lot in developing the science because it's not politically doable.”

Causes and Management of Uncertainty

Most described dealing with political, climatic, and scientific uncertainty in decision making as a part of their job. Many questioned the accuracy of historical drought records.

“We can deal with the uncertainties year to year...but if our, for example, 100 year average is based on a wet cycle, that's uncertainty.”

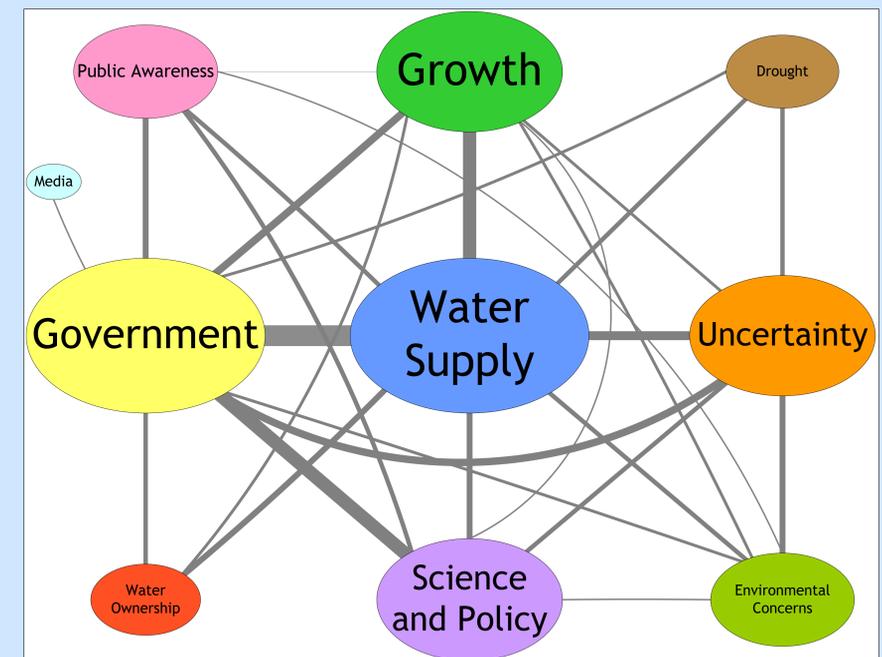
Strategies for communicating uncertainty ranged from modeling to statistical techniques to present a spectrum of future scenarios; some relied on their own level of experience.

“I've been doing this for 25 years, and, you know, I'm very good at making up numbers if I don't get data. We're good guessers.”

Managers emphasized the importance of communicating uncertainty to politicians and others, though they acknowledged that sometimes this information had to be simplified.

Common Perceptions

Our interview coding was based on **ten prominent themes** identified by our research team in the twelve interviews. The concept map below displays the average total time spent discussing each theme and the average total time spent discussing multiple themes.



Concept map of the managers' perspectives. Size of concept ellipses denote prominence of themes; weight of lines show strength of the relationships between themes.

This concept map presents the perspective of an **“average water manager.”** It is a graphical representation of both the questions we asked and how our respondents chose to answer them. It shows the complexity of major issues in the water arena and will inform further studies of other stakeholders, including scientists and citizens.

Acknowledgments

Many thanks to Dr. Margaret Nelson, Steve Swanson, and the rest of the Community of Undergraduate Research Scholars for their insights and advice. This material is based upon work supported by the National Science Foundation under Grant No. SES-0345945 Decision Center for a Desert City (DCDC). Any opinions, findings and conclusions or recommendation expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation (NSF).