

Attitudes and Behaviors Concerning Water in the Palouse Basin: Results of a Representative Survey

Water of the West --
**UI's Interdisciplinary
Water Resources Program**

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People & the Water Balance

WoW Goals for the Palouse Basin

- To improve our understanding of the current water situation in the Palouse – in terms of both supply & demand.
- To provide a general framework:
A systems modeling for “what if” scenarios, based on the best data available.
- To begin forecasting trends and potential future conditions & situations.



TO BEGIN WITH -- An understanding is needed of the current water situation in the Palouse in terms of human demands, uses, and the beliefs & values they are based on...



Survey Purpose & Objectives

- *Assess the knowledge, beliefs, attitudes and behaviors of residents living in the Palouse Basin in 2007.*
- *Compare these to the attitudes of citizens attending the Water Summit in 2006 – collected with the Palouse Basin Water Scorecard.*
- *Provide accurate, representative data for modeling the demand side of the water-balance model for the Basin.*

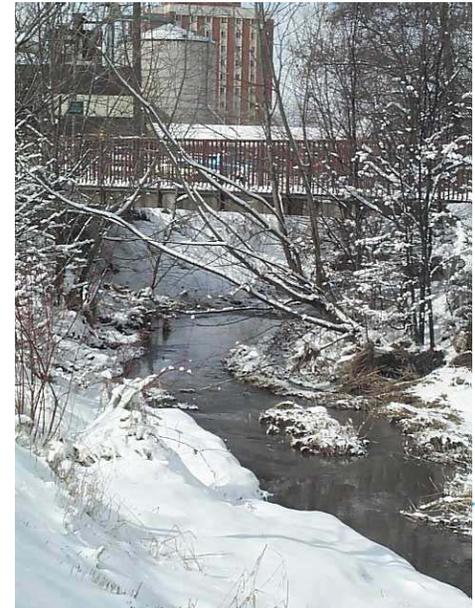


Palouse Water Summit Scorecard

- *The knowledge & attitudes of participants in the Palouse Water Summit are being assessed on an annual basis with a Summit “Scorecard.”*
- *A total of 85 attendees of the Summit provided responses to a “scorecard” last year (Oct. 2006).*
- *The idea is to survey Summit participants annually at the beginning of each Summit.*

(NOTE: The idea for this scorecard came from Steve Robischon, Exec. Manager of PBAC, and he was central in developing the questions asked.

Help also was provided by members of the UI Water Resources Program. We also appreciate the cooperation of the Palouse Water Summit Planning Committee.)



Palouse Water Summit Scorecard Results

- **How much do Summit participants perceive they know about water resources in the Basin?**

Highest average **scores** for **knowledge** --

- Between “**Somewhat**” and “**A Lot**” for:
 - **Water conservation measures**
 - **Water quantity/supply situation**



Palouse Water Summit Scorecard Results

- Extent to which participants' **understanding of water resources issues** in the Palouse Basin **increased between 2005 and 2006:**
 - 72% responded that they **understand “somewhat” to “a great deal more”**...
- **Primary sources of information:** Top two listed were ***public meetings (24%)*** and ***newspaper (19%)***; room for improvement exists (only 6%, for example, responded *Internet*).
- These results suggest that interested publics perceive they are becoming better informed -- and that local meetings and news accounts are making a difference.



Palouse Water Summit Scorecard Results

- Issues for which attendees **perceived the greatest problems in 2006** for:

***Water quantity/supply situation* – 62% rated a major or somewhat major problem.**

***Water conservation measures* – 52%.**

- Attendees **perceived the least problems** for:

***Water quality situation* – 29%**



Palouse Water Summit

Scorecard Results

- **Overall satisfaction** with the **progress** being made **on water issues** in the **Palouse Basin**:

A Excellent B Good C Satisfactory D Poor F No progress

1% responded “A”

23% “B”

49% “C”

27% “D” & NO “F”s

- **Top groups attending Summit in 2006:**

Water-related professionals (Researcher, consultant) – 22%

Interested public – 21%

Citizens group (CAG, PWCN, etc.) – 18%

Agency representatives – 14%

Elected officials – 11%

Business – 1%



Attitudes & Behaviors Concerning the Basin's Water Resources

A Representative Survey of Residents in the Palouse Basin

Preliminary Results



Survey Methods

- *In May – June 2007, a mail questionnaire was sent to a sample of 1484 households randomly selected from a complete list of addresses located within the Palouse Basin.*
- *To ensure randomness in response, residents were asked to have the household member complete the questionnaire whose birthday was closest to the day it was received.*
- *Following the Dillman Total Design Method, the first mailing of the questionnaire was followed by a post-card reminder to addresses not returning it, followed by a second mailing of the questionnaire to increase response rate.*



Survey Methods

- *To assess any non-response bias, 10 percent of sampled households that did not return the questionnaire were randomly selected and called by telephone.*
- *The household member answering was asked if they would answer a few brief questions, and the results were compared with responses from the returned mail questionnaires.*
- *For the data analysis, cases in the total sample were weighted to adjust for differences in population sizes of various communities – including year-round WSU/UI students.*



Survey Mailing and Follow-up Results

- *Survey Response Rates:*

- Of the total 1484 households receiving a *mailed questionnaire*, 480 returned usable questionnaires.

- In addition, a *non-response survey* of another 112 households was conducted by *telephone*:

- *25 phone numbers were disconnected (22%); 39 did not answer.*

- *48 households were contacted by telephone:*

- *Of those, 9 declined to be surveyed (23%), and 39 completed the survey.*

- Adjusted sample size of 1153 receiving *mailed questionnaires* (based on estimated households in residence), for a response rate of 42%.



Survey Results – Who Did Not Respond?

- Results of the *Non-Response Survey* conducted by telephone:
 - Extent to which residents perceived a **problem** with the ***water quantity/supply situation*** in the Basin:
 - **56%** rated this a **major or somewhat major problem...**
 - ... As opposed to **64%** of 480 **questionnaire respondents.**
 - No difference in responses on:
 - ***engaging in water-saving behaviors...***
 - ***favoring community-wide actions to advance water conservation, e.g., restrictions on lawn watering, etc.***



Survey Results – Who Did Respond?

CHARACTERISTICS OF THE 480 QUESTIONNAIRE RESPONDENTS

- Socio-economic & Cultural Characteristics
 - **Split** among *males & females* (similar to general population).
 - *Age*: Adults ranging up to 95 years old, with **median age of 54** (older than general population).
 - *Education*: **Average of 16 years (college)**, with 46% attending some graduate school (similar to general population).
 - *Years living on Palouse*
 - **22%** reported being **born on the Palouse** (v. 18% of respondents to telephone non-response survey).
 - *Average no. years as Basin residents*: **29 years** (v. 27 years for non-response sample).



Survey Results – Who Responded?

QUESTIONNAIRE RESPONDENT CHARACTERISTICS

- Socio-economic & Cultural Characteristics

- *Occupation:*

- **51%** reported being **employed full-time**, v. 36% of respondents to telephone non-response survey.
- **28%** reported being **retired** – v. 52% of non-response sample.

- *Median income:* Approximately **\$60,000 (higher than general population).**



Survey Results – Who Responded?

QUESTIONNAIRE RESPONDENT CHARACTERISTICS

- General Values & Attitudes: E.g.,

Percentages agreeing/disagreeing with the following statements:

*“The public should provide significant input on decisions about water use” –
81% Strongly Agree/Agree*

*“We should act now to conserve water for future generations” – 81% Strongly
Agree/Agree*

*“Further commercial and retail development would be a positive addition to
the region” – 51% Strongly Agree/Agree; 20% Strongly Disagree/Disagree*

*“Water issues are being used as an excuse to stop growth” – 27% Strongly
Agree/Agree; 41% Strongly Disagree/Disagree*



Survey Results – Who Responded?

QUESTIONNAIRE RESPONDENT CHARACTERISTICS

- Top Groups:

Interested public – 53% (v. 21% Summit attendees)

Citizens group (CAG, PWCN, etc.) – 5%

Business – 5%

Elected officials – 3%

Agency representatives & Water-related professionals – 2%

None of above – 22%



Questionnaire Survey Results

RESPONDENT KNOWLEDGE & BELIEFS

- How much do Basin residents perceive they know about its water resources?
 - Know “some” about *water conservation measures*;
 - Know a “slight amount” about the *water quantity/supply situation*.
- These average scores indicate they know less than Summit attendees.



Questionnaire Survey Results

RESPONDENT KNOWLEDGE & BELIEFS

- **How much** have Basin residents' understanding of water resources issues in the Palouse Basin increased over the past year (2006-2007):
 - Only **33%** responded that they understand “somewhat” to “a great deal more” ...
... suggesting that, unlike attendees, residents did not perceive they are becoming much more informed.
- **Residents' primary sources of information:** Top two listed were *newspaper* (62%) and *word of mouth* (26%) – also important, *media* and *water departments*.
- But -- **75%** were interested in learning more.



Questionnaire Survey Results

RESPONDENT CONCERNS

- Issues for which residents **perceived the greatest problems:**

Water demand/human uses – 67% rated this to be a major or somewhat major problem; (v. 59% for Summit attendees).

Water quantity/supply situation – 64% rated a major or somewhat major problem (v. 62% for Summit attendees).

Water planning/decision-making – 52% (v. 57% for Summit attendees).

Water quality situation – 43% (v. 29% for Summit attendees).



Questionnaire Survey Results

RESPONDENT CONCERNS

- **So – Does the public perceive there is a “water problem” in the Basin ???**
 - *When asked their **level of concern** about the reported **decline in the Basin’s groundwater,***

2% of all respondents reported that they did **not believe** that **groundwater levels are declining.**

A total of 78% reported **being somewhat (31%) or very concerned (47%)** about this situation.



Questionnaire Survey Results

RESPONDENT CONCERNS

- **However...**

- *When asked their **level of concern** about **water resource issues** in general across the Basin,*

- *The public is even more concerned, with...*

12% of all respondents reporting that they are **not concerned**;

A total of 86% reporting being **somewhat concerned (36%)** or **very concerned (50%)**.



Questionnaire Survey Results

- **Overall satisfaction with the progress being made on water issues in their community:**

A Excellent B Good C Satisfactory D Poor F No progress

5% responded "A"

25% "B"

41% "C"

29% "D" & 2% "F"

25% who did not respond to this question are not included here.

- **Overall satisfaction with the Palouse Basin Aquifer Committee:**

62% did not respond; of those that did:

2% responded "A"

11% "B"

41% "C"

41% "D" & 5% "F"

- 79% reported being **somewhat or very concerned** that their **community develop a water conservation plan** – v. 63% of nonrespondents.



Questionnaire Survey Results

RESPONDENT BEHAVIORS

- **Water conservation activities:** 92% reported **engaging in water-saving behaviors...**
- **Top citizen actions now being taken:** *Repairing plumbing (75%), restricting times for lawn watering (74%), and running full washer loads (72%).*
- In contrast, the **lowest percentages** of respondents reported *reducing turf area (33%) and water-wise landscaping (35%)...*
- And the vast majority of respondents would **support:**
 - **Community-wide actions to advance water conservation, e.g., restrictions on lawn watering, etc. – 77%**
 - **Financial incentives to reduce turf: 65%**



Questionnaire Survey Results

RESPONDENT VALUES & PREFERENCES

- *Economic measures:*
 - Would you be **willing to pay more** on your monthly **water bill** if it promoted less water use & more conservation?
 - *Only 30% responded “Yes” -- with a mean increase of \$19 per month per household.*
 - If a **water district was established** on the Palouse for reservoir development, would you be **willing to pay more** each month for your water?
 - *The percentage responding “Yes” increased to 54%, with a mean increase of \$9 per month per household.*



Questionnaire Survey Results

RESPONDENT VALUES & PREFERENCES

- Preferences for Water Management Actions

Relative Ranking of Potential Public/Government Responses:

	Relative Desirability Score	Citizen/Government Action
Most Desirable	High	Conservation behaviors
	High	Conservation devices
Least Desirable	Low	Reservoir construction
	Low	Water pricing
Somewhat Desirable	Moderate	Leak maintenance & repair
	Moderate	Tax breaks for conserving
	Moderate	Water-wise landscaping
	Moderate	Lawn-watering prohibitions



Survey Conclusions

- The characteristics of questionnaire respondents differ from those of the non-response sample – and...
 - *Major differences or influences on survey results were found for some characteristics and responses, & not for others.*
 - *Further analysis is needed.*



Survey Conclusions

- The questionnaire respondents indicated that citizens in the Palouse Basin could learn more about water resources issues – and
...They would like to learn more.
- Moderate to sizeable majorities do believe that water supplies and uses are major issues -- particularly declines in groundwater -- and
...Insufficient progress is being made in addressing these concerns.



Some Implications

A FINAL QUESTION:

- *How can governmental arrangements best achieve basin-wide goals & cost-effective actions?*
 - By providing incentives (“using a carrot”) to conserve...
(which many residents are already doing, to some extent),
 - NOT by building reservoirs or raising water prices that mean more taxes (“*not* using a stick”).
 - Also – by the development of community water conservation plans.

A REMINDER!

These are just preliminary results!!!



People & the Water Balance

WoW Objectives for the Palouse Basin

- **THE BOTTOM LINE:**
 - *To help ensure an informed citizenry and stakeholders, including government decision-makers and planners, and*



- *To promote optimum choices – feasible, realistic, & cost-effective -- for the future of the Palouse Basin.*



Sound Decisions Require Accurate Information...

WoW Objectives for the Palouse Basin

- The WoW survey of Palouse residents will be further validated and analyzed...
 - *To provide useful, valid information for future decision-making; and*
 - *To ensure a sound basis for continued resident input.*



Thank You!



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