

Needs & Impact Assessment Approach to Addressing Water Resource Education

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Age of Enlightenment...



- Marry hard science with social sciences
- Are we addressing needs of our audience?
- Are we having impact
 - Knowledge
 - Action
 - Env/Soc Changes

Multi-faceted Water Resource Issues

- Regional diversity
- Multiple stakeholders
- Drought
- Upstream water use and influence
- Natural resource development



Needs Assessment

Investigate who wants to know what about water resources.



Water Resource Education in MT

What

Where

How

Drinking water protection: 45%

Well & septic systems: 35%

Watershed management: 35%

Coal Bed Methane: 30%

Newspaper: 75%

TV: 65%

SI groups: 50%

Magazines: 50%

Govt.: 40%

Univ. & Ext.: 35%

Fact sheets: 68%

TV/Newspaper: 63%

Web: 28%

Videos: 18%

MSU Water Quality Extension

What

Where

How

Drinking water protection: 45%

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Are we making a difference?

- Addressing the audience needs?
- Assessing outcomes and impacts?
- Are we accountable for \$\$\$ spent on programming?



Examine programming

- Private well testing program – educational campaign
- Watershed Monitoring – technical service provider
- Coal Bed Methane – research and education



Private Well Testing Program

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Drinking water protection: 45%

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TV/Newspaper

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Univ. & Ext.

WELL EDUCATED

- 2005
 - 375 participants
 - T coliform, E. coli, TDS, Nitrate, Sodium, Arsenic
 - Fact Sheets
- Goals for 2006
 - More parameters
 - Ag use suitability
 - Mapping & database system
- 2006
 - 300 participants
 - Over 30 parameters offered
 - Fact sheets
 - Mapping system
 - Database
- Survey
 - 98% will test regularly
 - 87% better understanding of maintenance

- Bacteria
 - 273 sampled
 - 14% retested
 - 28% disinfected
 - 14% sourced contamination



Large implications for impacting private water resources in Montana

Watershed Monitoring

What	Where	How
Drinking water protection: 45%	Newspaper	<i>Fact sheets</i>
Well & septic systems: 35%	TV	TV/ <i>Newspaper</i>
<i>Watershed management: 35%</i>	SI groups	<i>Web</i>
Coal Bed Methane: 30%	Magazines	Videos
	<i>Government</i>	
	<i>Univ. & Ext.</i>	

Technical Service Providers



- Partnership with irrigation and conservation district managers, producers, Bureau of Reclamation, NRCS, DNRC, DEQ, and MSU
- Revisit projects to assess outcomes and impacts associated with TSP.

Toston Irrigation District

- Warm Springs Creek – tributary to Missouri River
- Improve water use efficiency within district

Project	Outcome Knowledge	Outcome Action	Impact Env/Soc Change
2005 & 2006	<ul style="list-style-type: none"> ✓ Small scale changes based on first years data ✓ Large scale, sustainable changes 	<ul style="list-style-type: none"> ✓ Pond installation, new data, and staff gages ✓ Installing new pump system improved water management 	<ul style="list-style-type: none"> ➤ Changing management practices lead to 25% reduction in sediment load in Warm Springs Creek ➤ Economic benefits

Producer Follow-up Survey

QUESTION	RATING				
N=5	AS	A	N	D	DS
Over the past two years, I have been able to see a difference in flow or sediment loads in Warm Springs Creek.	2	2	1		
This project changed awareness/perceptions of water use and management within the irrigation district.	1	3	1		
Decisions about management within the district may now be driven by data collected by MSU.	1	3	1		
I would be interested in attending seminars or information sessions about current irrigation management topics and learning what other districts are doing?		4		1	

CBM Documentary

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TV/Newspaper

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Univ. & Ext.

Prairies & Pipelines

Issues in
Coal Bed Methane
Development



MSU Ext. Water Quality Program
U.S. Department of Energy
MSU Media & Theatre Arts

- U.S. Department of Energy, MSU Extension Water Quality Program, and the USDA-CSREES Region 8 Water Program
- MSU Media & Theatre Arts Department
- Unbiased, scientific, and engaging look at coal bed methane development in the Powder River Basin of Wyoming and Montana
- Air on Montana PBS

Viewer Survey

- 49 undergraduate environmental science students
- Pre then Post Survey
 - ~84% gained knowledge on environmental, social, and economic issues associated with CBM

	AS	A	N	D	DS
The video was entertaining and easy to follow.	15%	80%	5%		
Overall, the video provided an unbiased, objective viewpoint to CBM development	29%	61%	7.5%	2.5%	
There was a balanced coverage of the issues surrounding CBM development.	20%	70%	7.5%	2.5%	

Implications

- Continued focus on audience specific educational needs
- Implement impact and outcome goals from beginning to end of project
- Implement extensive and thorough assessment of project – beginning to end
involve stakeholders in goal setting and assessment

A photograph of a sunset over a mountain range. The sun is low on the horizon, partially obscured by the mountains, creating a bright orange and yellow glow. The sky is filled with soft, wispy clouds. In the foreground, there are dark silhouettes of what appear to be fence posts or a building. The text "THANK YOU!" is overlaid in the center of the image in a bold, black, sans-serif font.

THANK YOU!