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Yellowstone Basin Watershed Planning

The work of the Yellowstone Basin Advisory Council

2013-2014



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Who was involved?



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YBAC meeting in Billings

YBAC Chair, Mack Cole addresses
council, agency staff, and the public



YBAC members and interests

- ▶ John Beaudry
- ▶ Mack Cole
- ▶ Cal Cumin
- ▶ David Galt
- ▶ Paul Gatzemeier
- ▶ Lynn Haidle
- ▶ Greg Lackman
- ▶ Dan Lowe
- ▶ John Moorhouse
- ▶ Roger Muggli
- ▶ David Mumford
- ▶ Jerry O'Hair
- ▶ Tom Osborne
- ▶ Mike Penfold
- ▶ Kay Petermann
- ▶ John Pulasky
- ▶ Steve Pust
- ▶ Dan Rostad
- ▶ Brad Sauer
- ▶ Shanny Spang Gion
- ▶ Industry--Stillwater Mine
- ▶ Agriculture
- ▶ Parks, Wilderness, Instream flow
- ▶ Industry—oil and gas
- ▶ Industry—coal, oil and gas
- ▶ Agriculture—Prairie Co CD
- ▶ Agriculture—Treasure Co CD
- ▶ Agriculture—Big Horn Co CD
- ▶ Yellowstone Co CD, Instream flow
- ▶ TY Irrigation Canal
- ▶ City of Billings, Municipal use
- ▶ Agriculture, Park Co CD, Outfitter
- ▶ Industry—hydrogeology consulting
- ▶ Instream, Our Montana
- ▶ Agriculture—Wibaux Co CD
- ▶ Agriculture and economic development
- ▶ Agriculture—Richland Co CD
- ▶ Boulder River Watershed, Sweet Grass Co CD
- ▶ Instream, Northern Plains Resource Council
- ▶ Crow Nation

YBAC Geographic Representation

- ▶ Big Horn County
- ▶ Custer County
- ▶ Park County
- ▶ Prairie County
- ▶ Richland County
- ▶ Rosebud County
- ▶ Stillwater County
- ▶ Sweet Grass County
- ▶ Treasure County
- ▶ Wibaux County
- ▶ Yellowstone County
- ▶ Basin-wide

YBAC staff support

Jim Robinson, DNRC water planner

Chuck Dalby, Hydrologist

Dr. Susan Gilbertz, MSU-Billings

Dr. Luke Ward, Rocky Mountain College

Barb Beck, Beck Consulting

Various agency staff subject matter experts from
DNRC,FWP,USGS,etc. as needed and requested

Chuck, Roger, and Art





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What was the process?



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What was the process?

18-month process involving the public, YBAC members, and technical subject matter experts

- ❖ Public scoping—[summer 2013](#)
- ❖ Ranking of issues by the YBAC
- ❖ Presentations to YBAC by technical subject matter experts on top ranked issues—[fall 2013](#)
- ❖ YBAC developed preliminary recommendations for the state water plan—[through spring 2014](#)
- ❖ Three-week public comment period with three public meetings (Big Timber, Billings, Miles City) [May 2014](#)
- ❖ YBAC finalized recommendations on nine issues—[May 2014](#)



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Three-phase planning process

Phase 1: Public scoping (organized as roundtables for discussion)

- Spring/summer 2013: meetings held in Glendive, Forsyth, Billings, Big Timber
- Analysis of results (28 primary concerns identified—prioritized by the YBAC down to 8 issues)

Five Views emerged (via Q-Sort)

1. Pro-development
 2. Pro-ecosystem
 3. Pro-irrigation/anti-markets
 4. Pro-irrigation/pro-markets, and
 5. Pro-storage and conservation
- Distillation and ranking of issues raised by the public



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Phase 2: Tech Transfer

- **Musselshell Water Distribution Project**
- Water Management and Candidate Conservation Species
- **Blackfoot Drought Response Plan**
- Instream Flow and Leasing
- **Climate Science and Policy**
- Montana Water Information System
- **Streamflow Statistics**
- Water Information Systems for Irrigation Districts
- **Water Quality (and TMDLs)**
- Water Planning and Reservoir Operations (Big Horn Basin)
- **Economics of Water Resources**
- Aquifers, Wells, and Ground Water Use
- **Depletions Model for the Missouri River**



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Issues the YBAC selected to make recommendations on for the state water plan

- ▶ Drought readiness
- ▶ Water information
- ▶ Integrated water quality and quantity management
- ▶ Water administration and beneficial use
- ▶ Watershed planning
- ▶ Ground water/surface water nexus
- ▶ Instream flow maintenance
- ▶ Water storage
- ▶ Funding



Guiding themes for recommendations

- Recommendations should not threaten prior appropriation doctrine.
- Recommendations should be stated in simple, non-technical terms.
- There should not be redundancy of recommendations when issues overlap.
- YBAC did consider water issues within their charge regardless of which state agency has the lead.
- YBAC believes state agencies should work closely together to benefit water users and Montanans.
- The YBAC was conscious of the financial implications of recommending new or adding a level of effort to on-going work.



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Phase 3 Recommendation Development

Process to develop preliminary recommendations

- Develop issue statement (clarify issue)
- Develop goal under each issue
- Edit, add, and delete ideas from staff papers
- Consider recommendations against criteria
 1. Is it technically feasible?
 2. Is it politically feasible?
 3. Is it financially feasible?
 4. Is it socially acceptable?

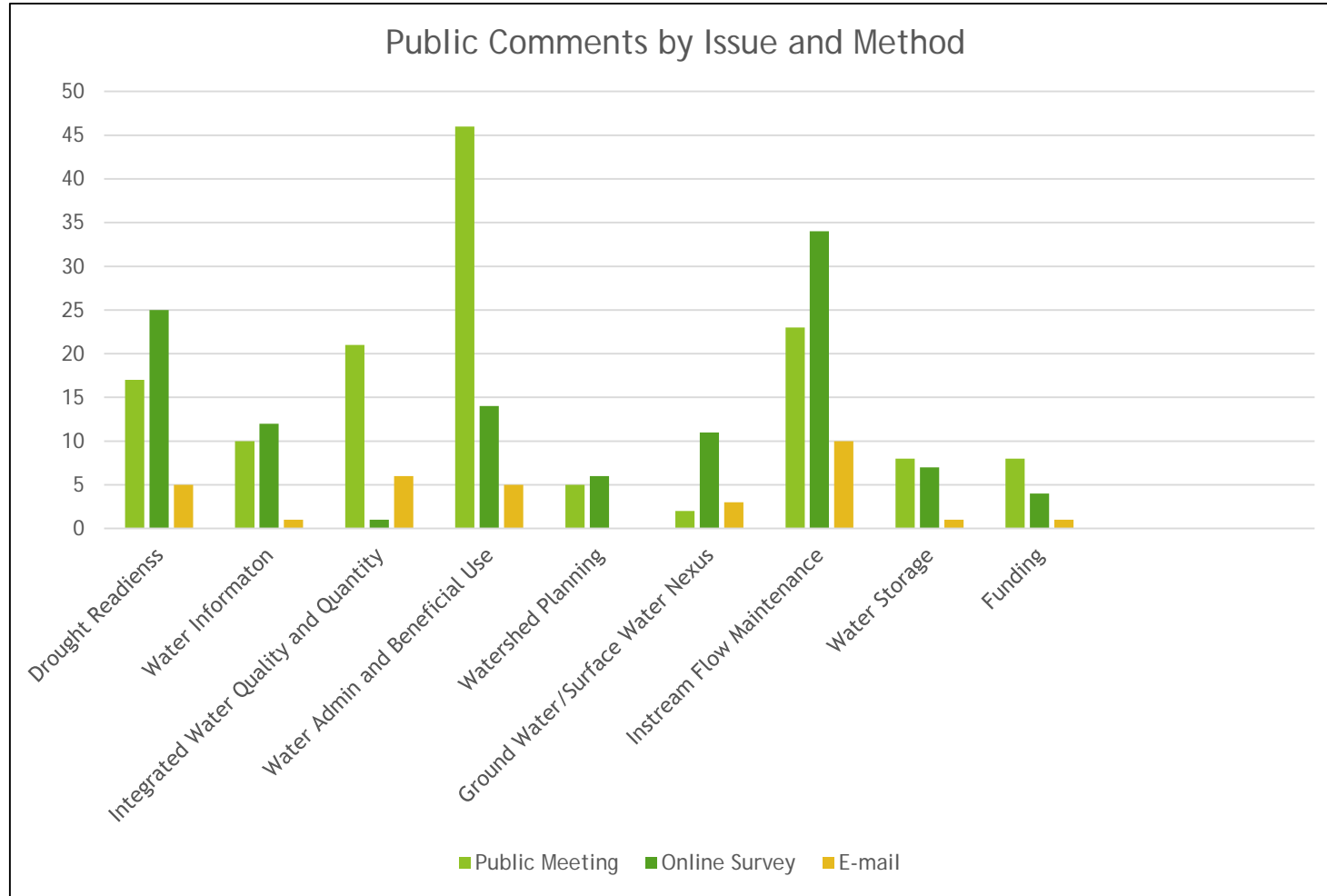


Public meetings to present recommendations

- ▶ Meetings held in Glendive, Forsyth, Billings, and Big Timber
- ▶ At least 5 YBAC members attended each meeting, public comments were captured on flip charts during the discussions
- ▶ 96 public attendees
- ▶ 298 comments received (verbal at meetings-140, via e-mail- 34, on-line survey- 124)
- ▶ Instream Flow Maintenance, Water Administration and Beneficial Use, and Drought Readiness issues received the majority of the public comments
- ▶ Recommendations requiring water measurement and recognizing lateral migration processes generated the most disagreement—these were two issues the YBAC struggled to reconcile. There was no public consensus on these.



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Public Meeting in Big Timber



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What were the outcomes?



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Drought Readiness

ISSUE STATEMENT: Numerous extended dry periods are documented in the Yellowstone hydrologic record. Water availability and drought preparedness are motivating factors in any water resource sustainability strategy. Many tools and policies are available, including conservation, to assist with effective water allocation that maintains economic viability and preserves resource values during drought (see Water Information, Watershed Planning, and Water Administration).

- ▶ Goal: *Provide sufficient information, and legal and administrative capacity to minimize adverse impacts during times of scarcity.*



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Water Information

ISSUE STATEMENT: The adequacy of existing water information, along with its availability, and ease of access to water users, water managers and the public is an issue. Sufficient water data needs to be collected and made available so that all relevant water information pertaining to a water body can be readily accessed and used to make informed decisions.

- ▶ Goal - *Provide sufficient water information to efficiently and legally administer water rights, and allow an integrated approach to water resource management.*



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INTEGRATED WATER QUALITY AND QUANTITY MANAGEMENT

ISSUE STATEMENT: Water use and water quality are linked. Every use of water affects its quality and as water consumption increases or the characteristics of the supply change, new and alternative uses can be affected. Water quality is an important issue in all areas of the Yellowstone River basin and influences beneficial uses.

- ▶ Goal: *The desired condition is one in which current and future water use and water quality are balanced in the water administrative and regulatory framework.*



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GROUND WATER/SURFACE WATER NEXUS

ISSUE STATEMENT: Ground and surface water are linked, often in complex interactions that can only be characterized through site-specific long-term measurement and monitoring projects. Although ground water usage in relation to surface water is relatively minor in the Yellowstone River basin, localized problems exist, particularly in areas impacted by land use changes or conversion from flood to sprinkler irrigation.

- ▶ Goal: *Better manage water resources (rivers, streams, lakes, aquifers, wetlands, riparian zones, etc.) in the Yellowstone River basin by obtaining information on surface water and groundwater sufficient to determine the potential effects of existing and future land use changes and drought, especially in high value aquifers and surface waters that are necessary to sustain beneficial uses.*



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Public Meeting in Miles City

Dr. Luke Ward and council member Roger Muggli discuss recommendations with members of the public



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WATER ADMINISTRATION AND BENEFICIAL USE

ISSUE STATEMENT: Enabling fairness under Montana's water law is a significant issue in the Yellowstone Basin. Uncertainty is created by the large number of unused claims in the DNRC water rights system and senior users are sometimes unable to meet their water right due to misappropriation by other users. Any strategy to meet future water demand and put water to beneficial use needs to include examination of Montana's water right system so as to identify opportunities to maximize administrative efficiency and ensure proper monitoring and enforcement of water rights.

- ▶ Goal: *Improve the existing water right administrative system to ensure water allocation according to established priority and identify unallocated water to satisfy current and future claims.*



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Water Storage

ISSUE STATEMENT: Water storage is an important part of integrated water management in the Yellowstone River Basin. However, traditional storage projects (dams and reservoirs) are expensive to plan, construct, manage, and maintain. In addition to construction of new storage, alternatives such as the prioritization of uses for water stored within existing reservoirs, maintenance of storage facilities, and modification of existing projects are important tools to mitigate effects of water supply variability. Managing stream and wetland systems to enhance natural channel and floodplain storage can augment structural measures by reconnecting streams to their floodplain, protecting wetlands, and encouraging healthy riparian vegetation.

- ▶ Goal - *Maintain existing storage projects and with the exception of the main stem Yellowstone River, develop new storage, including non-structural alternatives such as enhanced groundwater recharge, to improve seasonal and year-to-year availability of water for new and existing uses of water.*



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Tongue River Dam





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Instream Flow Maintenance

ISSUE STATEMENT: Despite the lack of on-stream main stem storage reservoirs, the natural hydrology of the Yellowstone River has been significantly altered by present-day levels of development. Instream flow maintenance pertains to maintenance of a stream's complete hydrologic regime. Maintenance of instream flows is a significant issue, not only on the main stem Yellowstone River and its larger tributaries, but also on smaller tributaries necessary for the functionality of the river system.

- ▶ Goal: *Provide sufficient protection for instream flows within the prior appropriation framework to maintain aquatic ecology and for other values, such as recreation and aesthetics.*



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WATERSHED PLANNING

ISSUE STATEMENT: Many water resource problems are watershed-specific and their solution requires a collaborative stakeholder approach within small- to medium-sized watersheds within the Yellowstone River basin, while other issues require a basin-wide approach. The need for planning and technical services, and access to information to develop and implement watershed plans, is expected to increase as demand for water increases. Existing funding mechanisms and personnel to support locally-led watershed planning are presently insufficient to meet current and projected demand.

- ▶ Goal -*Establish a collaborative problem-solving approach to watershed planning resource management.*



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Funding

Issue Statement: The legislature directed that DNRC update the MWSI. In order to implement the statewide water plan, funding is required.

- ▶ Goal: *Identify current and potential funding sources.*



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How do we move forward?



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Thoughts on moving forward

- ▶ Build on foundation of water plan
- ▶ Continue to engage stakeholders collaboratively - all of them, in a variety of forums (watershed planning groups, conferences, CD meetings, etc.)
- ▶ Use the best science and make it available to all
- ▶ Monitor conditions such as drought and water quality transparently
- ▶ Celebrate successes and good practices, learn continuously



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What were the top recommendations?

Yellowstone near Carter's Bridge





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Top recommendations

▶ Implement the Water Information Objectives

(long term, doesn't need statutory change, empowers all stakeholders)

- Education and outreach
- Water Information system

➤ Implement the Drought Readiness Objectives

(critical both short and long-term, may require changes to statute)

- Support and extend Montana's existing drought readiness efforts at the local level
- Strengthen existing policies and statutes necessary for the effective management of water resources
- Provide tools (policies and legislation) for temporary water supply management during extended droughts



Top recommendations cont'd

▶ Implement Water Use Administration and Beneficial Use objectives

(high public interest, long term, requires funding, benefits all users)

- Water right adjudication process
- Abandon (orphan) water rights
- Water right enforcement
- Measuring, monitoring and assessment

➤ Implement the Instream Flow objectives

(high public interest, long term)

- Provide specific "change in use" mechanisms that allow and incentivize users to assist in maintaining instream flows without compromising their ability

to use water or fundamental water right

- Improve recognition of the surface water/ground water nexus
- Impact of water development
- Yellowstone Water Reservation review process
- Maintain an intact hydrologic regime
- Reservoir management
- Longitudinal connectivity
- Drought planning
- Channel maintenance
- Continued study and monitoring



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Why make the effort?