

# **Irrigation in Montana A Program Overview and Economic Analysis**

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Water Policy Committee  
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## **Our Task**

- » Describe the current status of irrigated agriculture in Montana.
- » Describe the relationship between irrigation and the economy in Montana.
- » Provide decision-makers with information about the potential economic consequences of investing in new and existing irrigation projects.

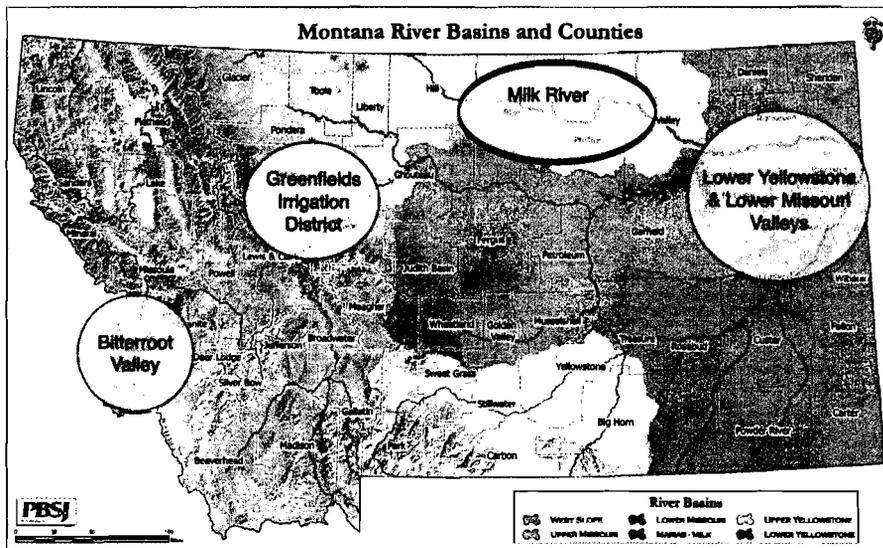
## Our Process

- » Reviewed existing studies.
- » Collected data.
- » Interviewed almost 50 individuals across the state.
- » Prepared 10 Technical Memoranda.
- » Responded to comments from staff of Montana DNRC and Department of Agriculture in three separate rounds of review.

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## Basins and Case Studies



## **Current Status of Irrigated Agriculture**

- » 9 categories of system ownership.
- » Availability of land and water varies across the state affected by basin closures and water reservations for irrigation use.
- » Alfalfa, hay, and pasture dominate irrigated crops in all basins.
- » 13 state and federal financial and technical assistance programs for irrigators.

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## **Irrigation-Economy Relationship**

- » Irrigation is important to farmers, counties, and the state economy.
- » Differences, similarities across the state.
- » Externalities are increasing in importance.
- » Strong forces and trends are affecting the irrigation-economy relationship.

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## Net Benefit of Irrigation to Irrigators

- » Increase in net farm earnings
  - » Studies in and near Montana show \$5 to \$32 per acre-foot
- » Increase in property value of irrigated land
  - » Studies in and near Montana show \$108 to \$800 per irrigated acre
- » Enhanced quality of life for irrigators and their families

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## Montana's Water-Related Goods and Services

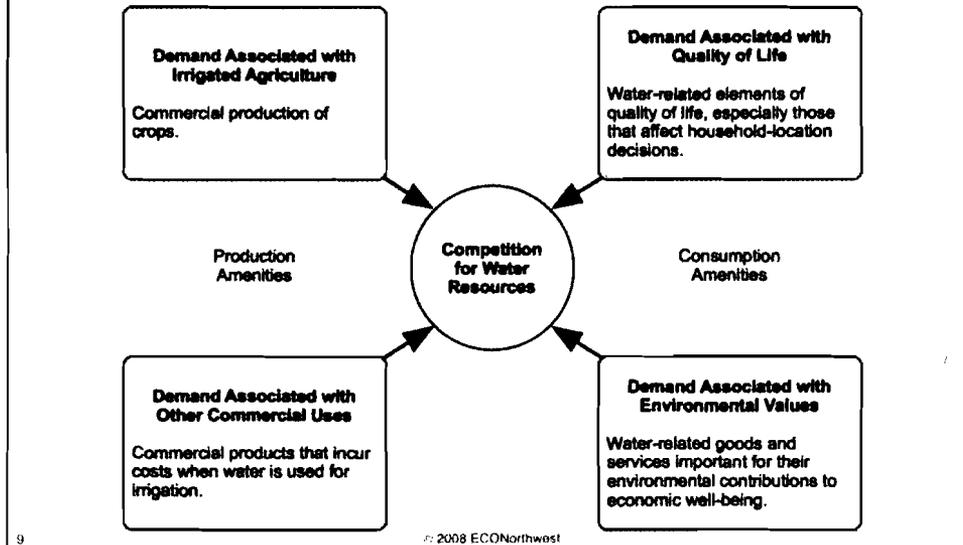
**Table 5. Summary of Goods and Services Produced by Montana's Water-Related Ecosystems**

Examples of Goods and Services Produced					
1	Production and regulation of water	7	Production of food for humans	12	Production of ornamental resources
2	Formation & retention of soil	8	Production of raw materials for industry	13	Production of aesthetic resources
3	Regulation of atmosphere & climate	9	Pollination of wild plants and agricultural crops	14	Production of recreational resources
4	Regulation of floods and other disturbances	10	Biological control of pests & diseases	15	Production of spiritual, historic, & cultural resources
5	Regulation of nutrients and pollution	11	Production of genetic & medicinal resources	16	Production of scientific & educational resources
6	Provision of fish and wildlife habitat				

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## Competing Demands for Montana's Water Resources



## Powerful Forces and Trends Influence Irrigation

- » **Changes in Economic Factors**
  - » Agricultural market fluctuations
  - » Amenity-driven growth
  - » Economic diversity
- » **Changes in Ecosystem Factors**
  - » Drought
  - » Climate Change
  - » Scarcities

## **Opportunities for Sustaining or Expanding Irrigation**

- » **Improve irrigation efficiency.**
  - » Montana withdraws 5.3 acre-feet per acre of irrigated land, twice the national average.
- » **Establish water markets and price incentives.**
  - » Montana FWP, Montana Water Trust, and Trout Unlimited have water-right purchase or lease programs.
- » **Explore new revenue opportunities.**
  - » Payments for ecosystem services

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## **Our Recommendations Before Making an Investment:**

- » Consider the full suite of positive and negative consequences of investments in irrigation.
- » Consider the trends likely to affect the future relationship between irrigation and the economy.
- » Consider the distribution of positive and negative economic consequences among different groups.

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## **Our Recommendations Before Making an Investment:**

- » Consider investments in improving efficiency as a complement or alternative to new infrastructure.
- » Investigate and pursue opportunities to develop new revenue sources (markets).
- » Sponsor research to develop better understanding of the economic consequences of potential investments.

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## **For More Information**

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