RECHARGE FOR THE RIVER
Incentivizing Groundwater Recharge in Teton Valley, Idaho

BACKGROUND

Teton Valley is a historically-agricultural community characterized by its iconic open spaces and mountain views. The Teton River is a dynamic system fed by snowmelt from the Teton and Big Hole Mountains that surround the Valley. Teton Valley is part of the Greater Yellowstone Ecosystem and is home to a number of ecologically-significant fish and wetland species. The Teton River runs through the heart of the Valley and drives the local economy by sustaining agriculture as well as supporting vibrant tourism and recreation industries.

PROBLEM STATEMENT

Increases in snowpack variability and more efficient irrigation practices have decreased late-summer streamflow in the Teton River, adversely impacting farmers who rely on surface water for irrigation as well as aquatic and wetland species that need adequate flows for critical habitat.

OBJECTIVES

Our goal was to implement an incidental groundwater recharge program to augment late-season flows in the Teton River and buffer against annual hydrologic variability. To do so we needed to:

1. Model hydrologic conditions and the potential impact of recharge on streamflow in the Teton River

2. Quantify economic and environmental benefits of augmented flows

ACKNOWLEDGEMENTS

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WHY OUR PROJECT MATTERS

Farms, the local economy, wildlife species, and habitat all stand to benefit from the implementation of a incidental groundwater recharge program in Teton Valley. This innovative solution allows us to work with the natural system to make water available when it is needed most without having to increase water supply through more expensive, means. This model demonstrates great promise in meeting economic and environmental needs simultaneously and could be replicated elsewhere in the arid West to increase late-summer streamflow.

OUR SOLUTION

Stage 1

• Two-year pilot project with two irrigation companies
• Participating farmers reimbursed for the direct costs of conducting incidental groundwater recharge in their canals.

Stage 2

• Partnerships with environmental non-governmental organizations (NGOs) whose missions align with the goal of increasing Teton River streamflow
• NGO funding will be used to continue covering farmers’ costs of recharge and expand recharge areas to include flooding of marginal lands and fields

Stage 3

• NGOs and farmers who benefit from recharge pay into the program managed by TWUA

Farmers conduct one month of incidental recharge before planting season

Farmers begin to benefit from recharge efforts; they will be encouraged to engage in the program as paying participants.

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BENEFITS

Environment

7.9% of the time from 1999-2000, water temperatures exceeded the salmonid spawning threshold. Augmented flows from incidental recharge could reduce these exceedances by 1%.

Value of an Improved Fishery from a 5% Increase in Angler Days

= $34,400

Wetland ecosystem services can be beneficial for the local hydrology, water quality, and local community.

Value of Wetland Ecosystem Services

= $1,800 per acre

FARMERS

When surface water flows are low, farmers pay for storage water to irrigate their crops. The cost to farmers of conducting incidental recharge is significantly less than the cost of having to rent storage water from a nearby reservoir.

Cost of Rented Water

Average Price

$6.00/acre-foot

Cost of Recharge Water

To Cover Farmers’ Costs

$1.02/acre-foot

To Cover Farmers’ Costs and Program Administration

$3.07/acre-foot

Minium Additional Streamflow Needed for Farmers to Benefit

= 58.8 cfs

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