

# What would the regional economic impacts of a Demand Management program be, if the consumptive use savings came from agriculture?

## WHAT IS DEMAND MANAGEMENT?

Demand Management is a potential program that would provide compensation for water users to voluntarily conserve water on a temporary basis in the Wyoming portion of the Colorado River Basin (CRB), see Figure 1. Such a program could be used to protect Wyoming's water users in the Colorado

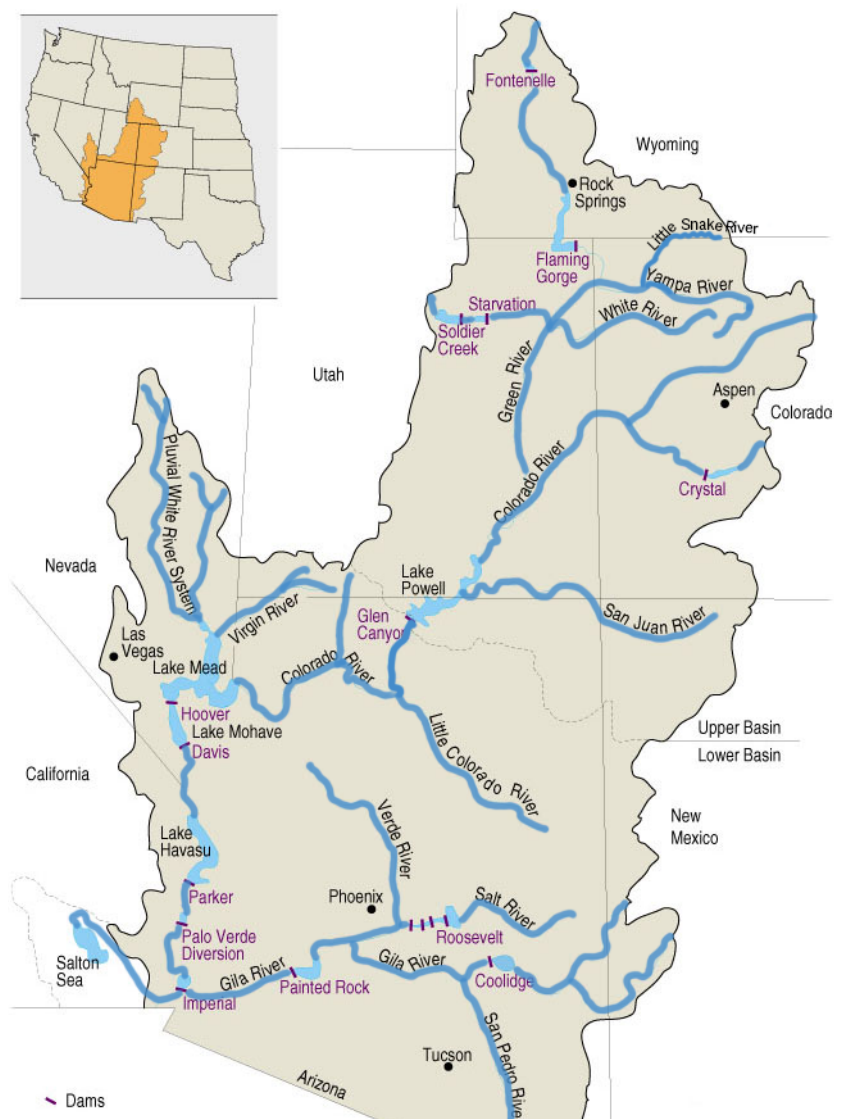
River Basin by reducing the risk of dropping water levels in Lake Powell. The impact of such low water levels include possible triggering of mandatory reduction of water use in Wyoming ("curtailment") to comply with the Colorado River Compact and loss of critical hydropower production and revenues.

## WHAT ARE THE ECONOMIC IMPACTS MEASURED IN THIS STUDY?

A potential DM program would have two types of economic impacts:

- Private enrollee impacts are the net benefits to producers of enrolling acres. Because the program would be voluntary, private enrollee impacts would generally be expected to be positive. (Participants would not enroll acres if they anticipated negative returns.)
- Regional economic impacts are impacts to the region as DM participants' decisions ripple through the economy. For example, if a producer receives compensation for

irrigating fewer acres in a DM program, they might buy a new truck and/or hire less help for harvest. These impacts are measured in terms of changes in jobs and income that would occur, directly or indirectly, as a result of implementing a DM program.



**Figure 1.** The Colorado River Basin

## HOW LARGE WOULD A POTENTIAL DM PROGRAM BE?

We examine a range of program sizes. Results presented here are for a program in which 25 thousand acre-feet (KAF) of consumptive use savings are generated.

## RANCH-LEVEL CONSIDERATIONS FOR A POTENTIAL DM PROGRAM

- Program participation may affect cattle operations (e.g., reduction in herd size) for some participants and may not affect operations for others. The study considers both possibilities.
- Acres enrolled are flooded grass hay (not alfalfa hay or grass under pivot).
- Management practice: No irrigation for the entire season.
- Assume 70% yield reduction in enrollment year and a 50% yield reduction in following year.
- Temporary and rotational: No acre is enrolled two seasons in a row.
- Different producers would find it beneficial to participate in an actual program across a range of participation payment levels, depending on their individual operations.

## KEY RESULT

The net regional economic impacts of a one-year DM program with a target volume level of 25 KAF are estimated to range from a reduction of 3.12% to 6.85% of income in the regional agricultural economy and a reduction of 0.04% to 0.10% of income in the overall regional economy, depending on how producers would

change their hay and livestock operations in response to a program.

## IMPORTANT CONSIDERATIONS

- Because a realistic baseline for an uncertain future has not yet been established, by default, the study evaluates the economic impacts of a DM program relative to “business as usual” baseline rather than to a baseline of heightened risk of curtailment (involuntary and uncompensated reductions in water use to ensure downstream Compact obligations are met), which would be a more realistic comparison.
- The results of this study are highly dependent on the inputs (especially assumptions about how yields and consumptive use reductions respond to irrigation reductions).
- All modeling done in this study assumes temporary participation, so abandonment of water rights is not at issue.
- The study does not consider the ecological impacts of changes in quantity and timing of flows that would result from implementation of a DM program. A significantly sized DM program could result in significant changes on the landscape, though it is impossible to quantify the full impact of the changes with currently available data.
- Policymakers could decide to offset some of the negative regional economic impacts through a mitigation fund.

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