



Working toward a Sustainable Water Supply

An ongoing series on IDWR water resource investigations working toward a Sustainable Water Supply SEPTEMBER 2023

Camas Prairie water resource study

The Camas Prairie in Southern Idaho is a mountain valley nearly a mile-high, cradled by the Bennett Hills to the south and the Soldier Mountains to the north. Historically, the prairie was a popular place for Native Americans to gather food from the prolific Camas Lily blooms in the late spring.

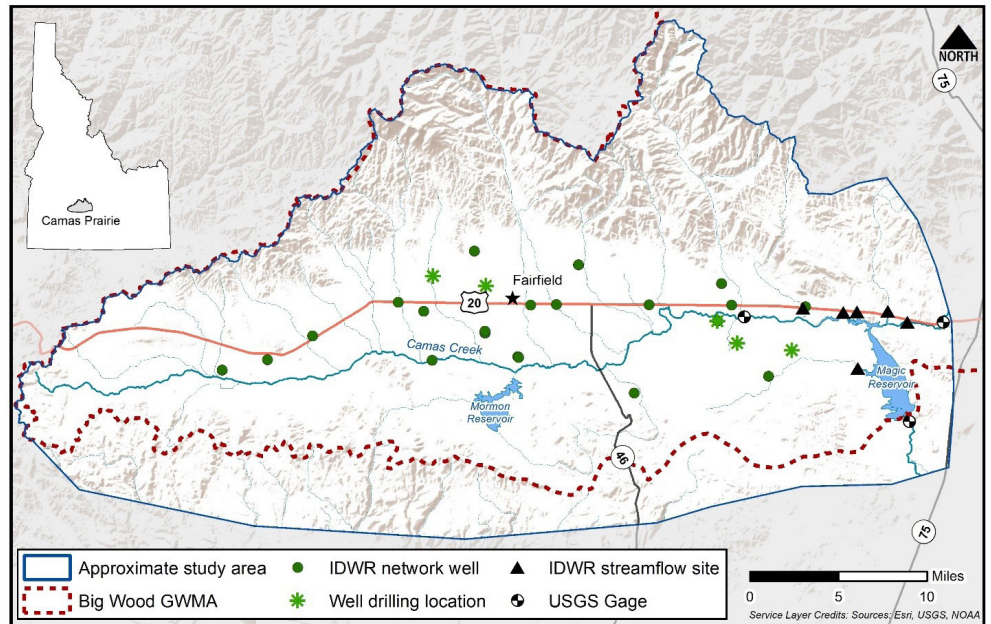
Since the late 1800s and early 1900s, the Camas Prairie has been farmed to raise agricultural crops. The main crops grown in the valley are alfalfa hay and small grains. Groundwater development for irrigating crops began in the 1920s.

Camas Creek is the primary surface water stream in the Camas Prairie, draining a geographic area of approximately 730 square miles before pouring into Magic Reservoir along with the Big Wood River. The hydrogeology of the Camas Prairie valley-fill aquifer system is complex, consisting of a shallow, unconfined aquifer and confined alluvium and basalt aquifers.

Both Camas Creek and the Big Wood River contribute water flows to Magic Reservoir, an important water supply for surface water right holders downstream of the reservoir.

The Problem: Diminishing water supplies

Surface water irrigation supplies reached a point where they were fully appropriated in 1980, according to the Idaho Department of Water Resources (IDWR). By 1991, IDWR designated the Big Wood River Ground Water Management Area (GWMA), which encom-



Map indicates the boundary of the Camas Prairie water resource study area.

- **Project:** Four-year hydrologic investigation by IDWR and USGS to learn more about Camas Creek surface water resources and the groundwater resources underlying the Camas Prairie.
- **Location:** Fairfield, Camas Prairie and Camas County
- **Total project cost:** \$1.01 million
- **Funders:** Idaho Water Resource Board (\$900,000) and USGS (\$113,000)
- **Projected completion date:** Spring/Summer 2027

passes the Big Wood River drainage upstream from Magic Dam and the Camas Creek drainage in the Camas Prairie.

The groundwater management area was designated in response to the potential depletion of groundwater resources underlying the Camas Prairie. Depletion of ground water resources may result in decreased basin underflow and reduced groundwater contributions to surface water flows. Any further ground water diversions could also directly impact the quantity of water flowing into Magic Reservoir. In 2022, IDWR implemented a moratorium on the approval of most new groundwater rights in the groundwater management area, including in the Camas Prairie area.



Working toward a Sustainable Water Supply

An ongoing series on IDWR water resource investigations working toward a Sustainable Water Supply SEPTEMBER 2023

Camas Prairie water resource study (cont.)



Camas Creek flows nearly bank-full in the springtime as it flows across the Camas Prairie to Magic Reservoir (IDWR).

Solution: A new hydrologic investigation in the Camas Prairie

IDWR is partnering with the U.S. Geological Survey (USGS) to complete a four-year water resources investigation of the Camas Prairie. The study began in March 2023 and will end in 2027.

The objective of this project is to provide an updated characterization of groundwater and surface water resources in the Camas Prairie and Magic Reservoir. Data and analysis obtained from the research activities will provide IDWR with information to help address current water resource challenges, including assessing whether groundwater pumping in the Camas Prairie affects the surface water availability in Magic Reservoir. The study also will provide baseline information for a potential future groundwater flow model.

The Camas Prairie study is supported by the Big Wood GWMA Advisory Committee, the Big Wood Technical

Working Group, local water users and the Idaho Water Resource Board.

A key question to answer is whether groundwater pumping in the Camas Prairie affects the quantity of water flowing into Magic Reservoir.

As part of the four-year study, the following action items are planned:

1. IDWR will measure streamflow on Camas Creek, Big Wood River, and tributaries. These measurements will be used to develop hydrographs to help estimate surface water inflows to Magic Reservoir.
2. The USGS and IDWR will conduct groundwater level mass measurement events in which about 200 wells will be measured during pre- and post-irrigation season conditions. The resulting data will be used to develop high-resolution water-level contour maps for the shallow and deep aquifers.
3. The USGS will develop a hydrogeologic framework, which is a conceptual

model of groundwater occurrence and flow and will also describe aquifer recharge and discharge of the basin.

4. The USGS will develop two separate water budgets for the study area – a groundwater budget for the Camas Prairie and one for Magic Reservoir. The water budgets will represent wet, dry and average water year scenarios.

5. IDWR will install five new monitoring wells to better define groundwater levels and hydrogeologic conditions in the Camas Prairie.

For more information, scan the QR code below or go to the web site listed at the bottom of this page.

