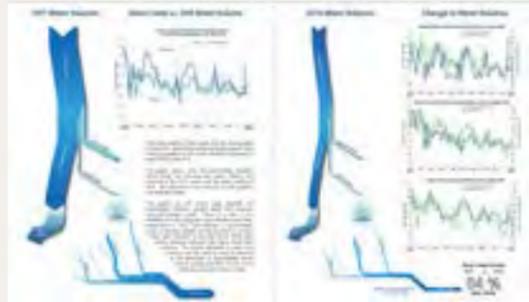


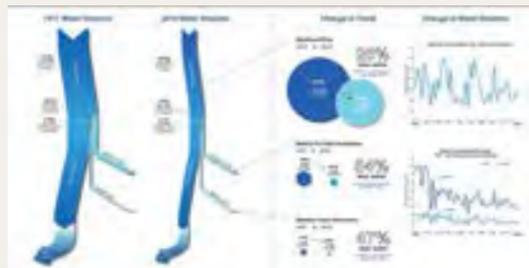
Baseline Characteristics:

WATER AVAILABILITY

Blaine County sits atop two principal aquifers.⁸⁴ One being an unconfined aquifer that follows the valley floor, roughly mimicking the path of the Big Wood River from north to south. Water flows down the valley and either stays shallow or goes down into a deeper, confined aquifer south of Baseline Road in the Bellevue Triangle. The two aquifers reconnect near the community of Gannett, where the pressure of the confined aquifer pushes the water up above the ground, forming the springs and tributaries that feed Silver Creek. Whereas precipitation and snowmelt channeled through supporting tributaries feed the Big Wood, Silver Creek depends on this groundwater upwelling to maintain flows. In turn, the aquifers are recharged by stream seepage and precipitation filtering downward.⁸⁵



Correlated Change in Surface and Ground Water Volumes¹²²



Change in Surface Water Flows¹²³

As recently the early 1970s, when Idaho established an permitting system for surface water rights,⁸⁶ there was a general view that development and land uses did not impact the County's water supply.⁸⁷ Now, there's evidence that environmental changes, regional growth and overallocation have severely impacted groundwater levels over time.⁸⁸

A 2007 report prepared in collaboration with local entities and published by the US Geological Survey showed "significant declining trends" at three wells that the Survey identified as representative of the valley's groundwater system.⁸⁹ Ground water monitoring since 1975 backs those findings with a clear downward trend.^{90,91} Population and

water level trends over the 50-year period are addressed in the 2007 USGS report, speculating a relationship between consumptive uses and groundwater levels.⁹² The 2022 Order Establishing Moratorium on most new appropriations declares the "surface and ground waters of the Big Wood River drainage [to be] connected."⁹³

An analysis of the annual streamflow volumes of the Big Wood found that it was 26% lower in 2016 than it was in 1970.⁹⁴ Water available to the area's two principal diversion canals, which deliver a majority of the surface water used for agricultural irrigation in the south valley, was cut in half.⁹⁵ Silver Creek, the bellwether for the south county's aquifer, saw flows fall by 54% from 1975 to 2016.⁹⁶ Both measures indicate an overall decline throughout the water system. Decreases in surface water flows and groundwater levels are interconnected, and susceptible to the pressures of climate change.

Climate change is exacerbating drought and triggering snowmelt earlier in the year. Average

temperatures are steadily increasing year round,⁹⁷ compromising the capacity of the region's snowpack to store water through spring and into summer.⁹⁸ Spring runoff has and will continue to begin earlier each year, significantly reducing streamflows during the hottest months of the summer.⁹⁹ More frequent and intense drought and wet periods further stress the ecology of the Big Wood River basin.¹⁰⁰ Meanwhile, more efficient irrigation methods and water delivery methods offer less aquifer recharge. Lower ground water levels throughout the aquifer have reverberated system wide.

varies widely year to year. In May 2023, it was upward of 98% full; two years earlier, it was just 4% full, leading to a 26 day irrigation season for its shareholders.¹¹⁹

Little Wood Reservoir is a smaller body, holding about 30,000 acre-feet. Managed by the Little Wood Irrigation District, the reservoir's water is important to agricultural users around Carey.¹²⁰ Residential development in Carey depends on ground water from wells, which the county considers "reasonably shallow."¹²¹

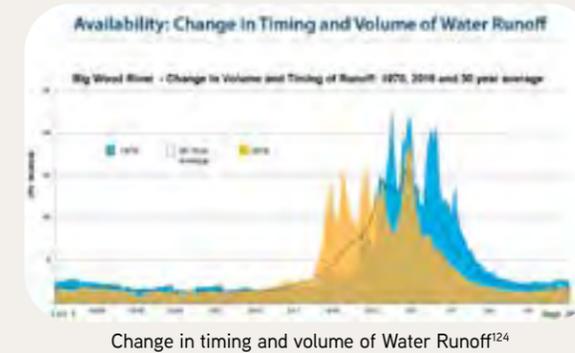
Increased water demand, locally and regionally, further stresses local water resources. Agriculture—by far the system's largest segment of water users—has felt the pressures of diminished water resources in recent years.¹⁰¹ Agricultural uses account for almost 74% of water use across the Big and Little Wood Drainage in Water District 37.¹⁰² In 2016 they accounted for 125,000 of 169,687 acre-feet in 2016, some 40.7 billion gallons.¹⁰³ Domestic wells were the second biggest user, consuming 24,907 acre-feet that same year; municipalities used 11,000; golf courses used 8,380; and snowmaking used 400.¹⁰⁴

In Idaho, like most Mountain West states, the water rights supporting this usage are based on a doctrine known as 'Prior Appropriation,' which stipulates that older water rights have priority in times of scarcity. It's commonly summed up as 'first in time, first in right'; in other words, a user can fill their allocation only after all the users who came before have filled theirs. Locally, the oldest surface water rights date back to the 1880s. More junior claims, like many of the groundwater wells in the Bellevue Triangle, commonly originated in the 1940s.¹⁰⁵ When water is scarce, senior users can 'call on' junior users to curtail use in order to fulfill senior allotments—something experts forecast will happen more and more going forward.¹⁰⁶

Much has changed since the majority of local water rights were allocated and the Doctrine of Prior Appropriation was established— therein lies the tension. Old rights are based on the hydrological and climatic conditions that predate Idaho's statehood. Today, there is less water available in the west than there was when the legal framework took shape. Furthermore, the Prior Appropriation Doctrine encourages individual users to protect their stake—not the basin as a whole. In recent years, senior surface right users have issued water calls against upstream groundwater users¹⁰⁷—something that will likely grow more common if climate and use trends continue.¹⁰⁸

To mitigate these challenges, the Idaho Department of Water Resources issued an order in 1991 designating the Big Wood River Ground Water Management Area, spanning from Magic Dam north up the Big Wood River, east to upper Silver Creek and west to the Camas Prairie.¹⁰⁹ The Management Area includes a variety of surface and groundwater users— but not all domestic users in the unincorporated County. The 1991 order also established a Management Policy, restricting new appropriations of water.¹¹⁰ The policy helped weaken the downward trend in ground water levels that steepened over the previous 50 years; however the levels have not rebounded.¹¹¹

In 2020, the Director of the Idaho Department of Water Resources convened select users to serve on an Advisory Committee for the Management Area.¹¹² Over the course of two years, the Advisory Committee drafted and adopted a Management Plan that includes a suite of programs to mitigate the impacts of groundwater pumping and to maintain streamflow targets.¹¹³ The Plan's goals include supporting the availability of ground and surface water, stream health, as well as the aquifer health.¹¹⁴ It calls for tactics, such as fallowing acres within groundwater districts, limiting groundwater pumping for irrigation seasonally, establishing a fund to finance water conservation and infrastructure projects, delivering water from the Snake River, and cloud seeding.¹¹⁵ The 2022 plan is set to expire at the end of 2024, and the Advisory Committee is currently discussing updates to the Plan.¹¹⁶



Change in timing and volume of Water Runoff¹²⁴

Regional Coordination

In addition to the Blaine County government and the five cities therein, community partners in water availability include:

Big Wood Canal Company

Big Wood River Groundwater Management Advisory Committee

Big Wood Water Collaborative

Boise State University

Conservation, Infrastructure & Efficiency Fund (CIEF) Committee

Galena Ground Water District

Idaho Conservation League

Idaho Department of Water Resources

Natural Resources and Conservation Services, USDA - Idaho Office

Silver Creek Alliance

South Valley Ground Water District

Sun Valley Water and Sewer District

The Nature Conservancy



Photo: John Finnell