



Water Topic April 2024

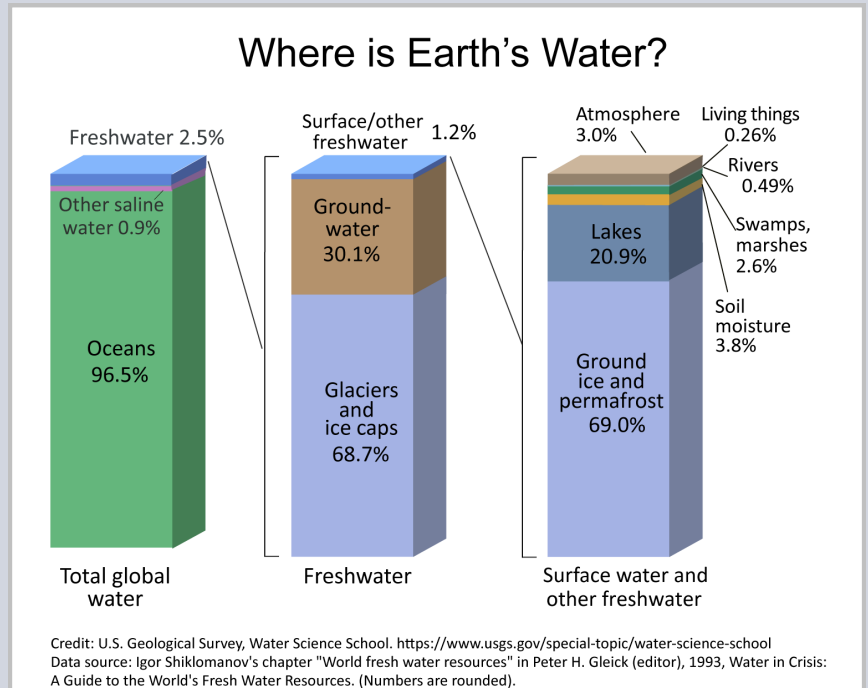
Water Resources

Happy Earth Day! What is one thing that supports the wide range of life on Earth? Water. Water is a resource that we all need and share, at local scales, but also around the world. This month we'll "dive" into the topic of water. We'll discuss its importance for life on earth.

Life as we know it wouldn't exist without water. Water provides global transportation, recreation, hydropower, habitat, and irrigation use that sustains our lives. Approximately 71% of Earth's surface is covered in water, and of that 71%, less than 1% is **available** freshwater (USGS). The freshwater resources we have on Earth are distributed as seen in the figure below. Freshwater makes up 2.5% of Earth's water, and most of that water is frozen in ice caps and glaciers. The remaining freshwater is distributed amongst waterbodies, living things (such as you), and the atmosphere (USGS).

Water is a shared resource amongst our local neighbors, counties, states, countries, and globe and disperses around Earth's surface through the hydrological cycle. Similar to the rest of the world, water is a defining characteristic of the Centennial Valley. The unique ecosystem of the Valley is in part due to its freshwater in the lakes, streams, rivers and wetlands within the valley. The Centennial Valley is home to the largest wetland complex in Montana, a unique ecosystem that provides many benefits. For example, these ecosystems are often species-rich, especially in bird species and vegetation. The Centennial Valley has had 261 bird species recorded, which is 70% of all the species found in Montana. (MNHP). These ecosystems provide habitat for the fish and wildlife, and provide the necessary resource for irrigation, recreation and the lives and livelihoods that depend on it, helping sustain the Centennial Valley as it is today.

Water is also very important to agriculture, which feeds the world's population. Irrigation provides water and nutrients to crops, and flood irrigation can replenish groundwater, promote aquifer storage, and provide late-season streamflows that support the fishery in the fall. Check out page 2 for more information about freshwater use in relation to irrigation in Montana.



Water Resource Use in Montana

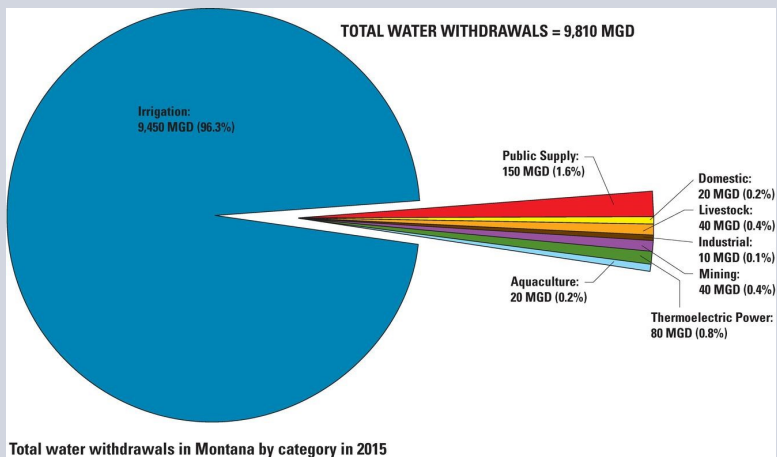


Figure 1: Percentage of total freshwater withdrawals per sector for Montana in 2015.

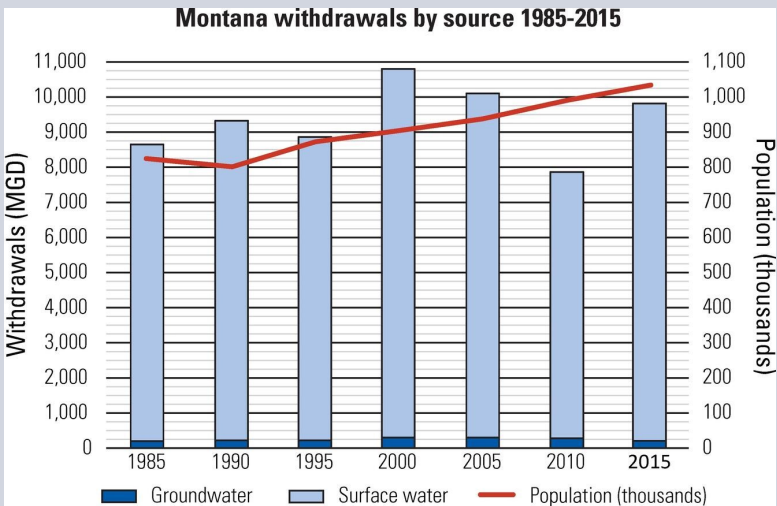


Figure 2: Montana's total freshwater withdrawals from (1985-2015 in five year increments) compared to Montana's population.

Irrigation is a necessary for feeding the world's growing population. Figure one, to the left, shows that 96.3% of Montana's water withdrawal goes towards irrigation. According to USGS, estimates vary, but around 70% of the world's freshwater withdrawals go towards irrigation use. However, Montana's freshwater withdrawals have varied instead of steadily increased, if you look at figure two. This figure shows Montana's freshwater withdrawals from 1985-2015 in comparison to the state's population. You can see in this figure that the majority of the state's water usage is from surface water, and that despite the state's growing population, the total water withdrawals still vary. (USGS).

Montana has many rivers and streams flowing across the landscape, all which benefit irrigation, fish, wildlife, and recreation. Check out [this link](#) from NRCS to learn about people working together to use this resource in a way that benefits farmers, ranchers, and recreationists, as well as the fish, and wildlife that make Montana so great!

Source: [Water Use in Montana \(USGS\)](#)

Still Curious? Check out the Links Below!

Check out these Resources:

[Going to Extremes: Heat, Water Scarcity and Food](#)

This podcast episode is from a podcast series called "What About Water?" that discusses a range of topics on water consumption and use. This episode features many individuals with diverse backgrounds in farming and research around the world. The common thread between them all is the topic of water, specifically water issues with scarcity in supply of freshwater.

[Beyond Scarcity: Can we Restore Vitality in a Drying West](#)

This article from the Western Landowners Alliance discusses drought in the West, but also talks about some techniques people are using to try and keep water on the landscape for longer periods of time.

Resources/Sources:

[What About Water?](#) (Podcast)

[How Much Water is There on Earth?](#) (USGS)

[What is Water?](#) (American Museum of Natural History)

[Water Use in Montana](#) (USGS)

[Irrigation Water Use](#) (USGS)

[The Distribution of Water on, in and above the Earth](#) (USGS)

[Centennial Valley Land Cover Information](#) (Montana Natural Heritage Program)

