DEPARTMENT OF ECOLOGY
State of Washington

100 YEARS Washington's Water Law

100 Years of Washington Water Law Infographic Set

In 1917, the Washingon State Legislature passed the state's first comprehensive water law. One hundred years later, the Department of Ecology commemorates this historic milestone with an educational outreach program including videos, an interactive story map, and this series of infographics.

You'll find all materials at: http://www.ecy.wa.gov/programs/wr/hq/waterlaw-100.html

Select any title to go directly to the infographic:

- Wine from Washington Water - 1825
- The father of Washingon irrigation - 1860
- Seattle's first municipal water system - 1889
- "It's the water" - Washington breweries - 1869
- Salmon and the Endangered Species Act - 1991
- The new normal - more rain, less snow - 2015
- Climate change and groundwater levels - 2015
- Water banks - market makers for water supplies
- Aquifer storage, recovery and recharge
- Rainwater collection in Washington
- Water use varies widely across the U.S.
- How much water does it take to make...

For more information, contact Barbara Brooks at (360) 407-6624.

October 2017

Wine from Washington water

In 1825, the first wine grapes were planted in Washington, in Vancouver.

German and Italian immigrants are credited with producing the first wine in the 1860s & 1870s.

Washington's modern wine industry can be traced to the 1960s and the home winemaking operations of several UW professors.

The merlot craze of the 1990s sparked a boom in the state's wine industry.

Today, it brings in more than $2.4 billion.

With more than 43,000 acres of vineyards, Washington ranks second in the U.S. in production.

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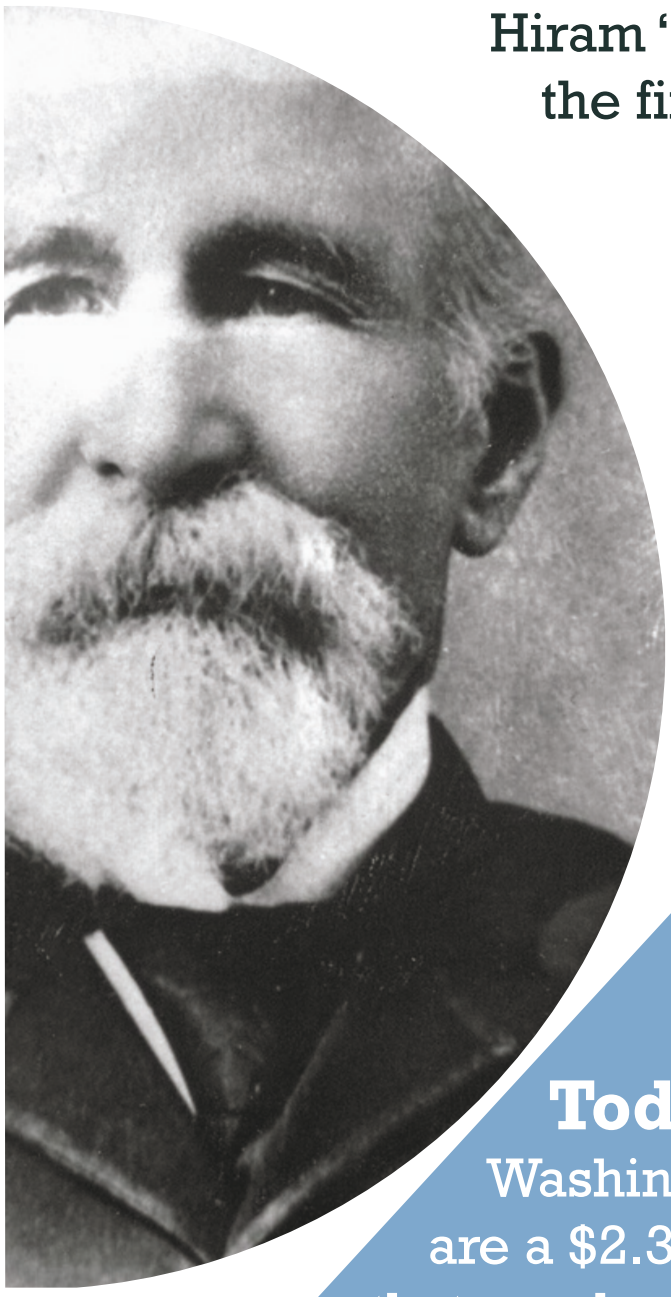
In 1860, the "father of Washington irrigation," Hiram "Okanogan" Smith, planted the first large apple orchard.



Today,
Washington apples are a $2.3 billion crop that employs 60,000.

Each apple is harvested by hand. Lined side-by-side, they would circle the globe 29 times.

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After the Great Fire of **1889**,

Seattle citizens voted to fund a municipally-owned water system built of hand-bored wooden pipes.

The city purchased water from private suppliers who drew primarily on Lake Washington & ground water sources.

By the 1950s,
Seattle was drawing water from its Cedar and Tolt river watersheds

&
wooden mains were being replaced with concrete.

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“It’s the water!”

In 1896, Leopold Schmidt made artesian well water famous brewing beer at his Olympia Brewery.

The “Old Brewhouse” along the Deschutes River closed in 2003. In 2016, the property was donated to the City of Tumwater.

In 2018, nearby South Puget Sound Community College will offer students degrees in brewing and distilling.

It will be the first program of its kind in the nation.

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In 1991, Snake River sockeye were the first salmonid listed as endangered under the Endangered Species Act.

In the following few years, 16 more species of salmon were listed as either threatened or endangered. Many things have contributed to the decline, including:

- Loss, damage, and fragmenting of salmon habitat
- Water quality degradation (point and non-point source pollution, temperature)
- Dams, faulty culverts, and other fish passage barriers
- Over fishing and increased predation
- Hatchery fish competing with wild salmon for limited resources
- Climate change and fluctuating marine conditions

After more than 18 years of regional salmon recovery efforts, what progress have we made?

- **Puget Sound:** Summer chum abundance in Hood canal and the Strait of Juan de Fuca is nearing recovery goals.
- **Snake River:** Regional collaboration has successfully removed many fish passage barriers. Fall Chinook are near recovery goals.
- **Columbia River:** Eight of the 74 populations of wild salmon, steelhead, and bull trout are meeting their recovery goals. Populations of steelhead in the Yakima River basin are ten or more times what they were in the 1980s. Populations of middle Columbia River steelhead are moving towards meeting delisting criteria.
- **Northeast Washington:** Through collaboration among state, federal, and local government, citizens, and the Kalispel Tribe of Indians progress has been made in habitat improvements and removal of fish passage barriers.

We still have a long way to go, and many salmonid populations are continuing to lose ground.

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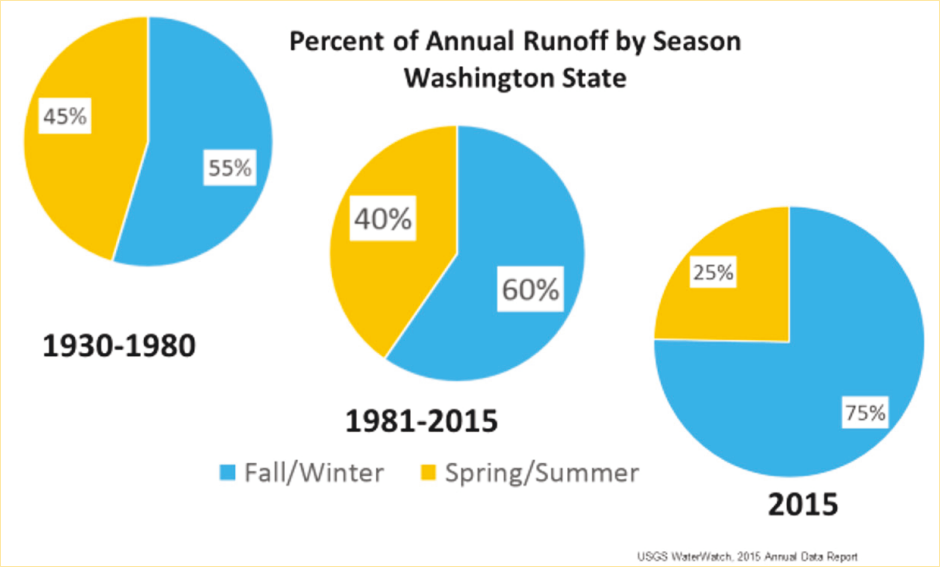
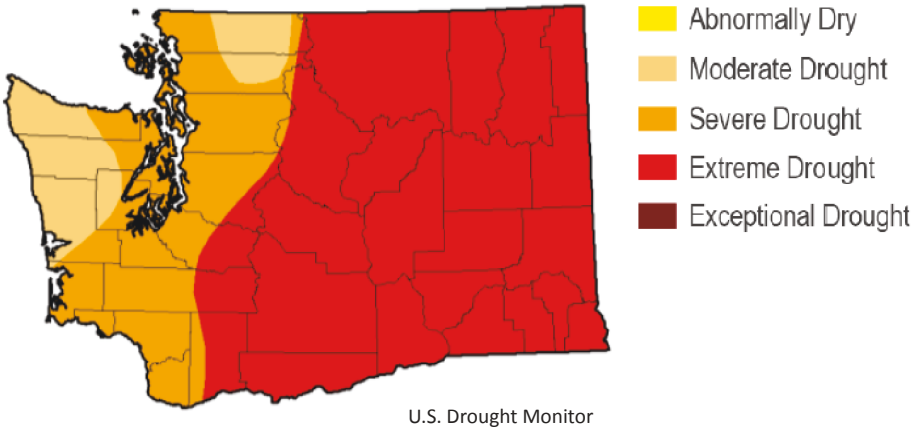
The new normal



More rain. Less snow.

In 2015, 75% of the annual runoff occurred during fall and winter months, when higher temperatures reduced snowpack.



U.S. Drought Monitor

In 2015,
Washington state experienced record warm temperatures.

Spring snowmelt,which typically peaks in May and June, peaked early in March & April.

The result: 80% of the state's rivers showed below normal stream flow readings. That meant less water in rivers and streams in the summer and fall when needed the most for farms and fish.

By October, 68% of Washington was experiencing extreme drought, the fourth statewide drought since 1977.

Scientists say climate change will cause temperatures such as those experienced in 2015 to be the new normal.

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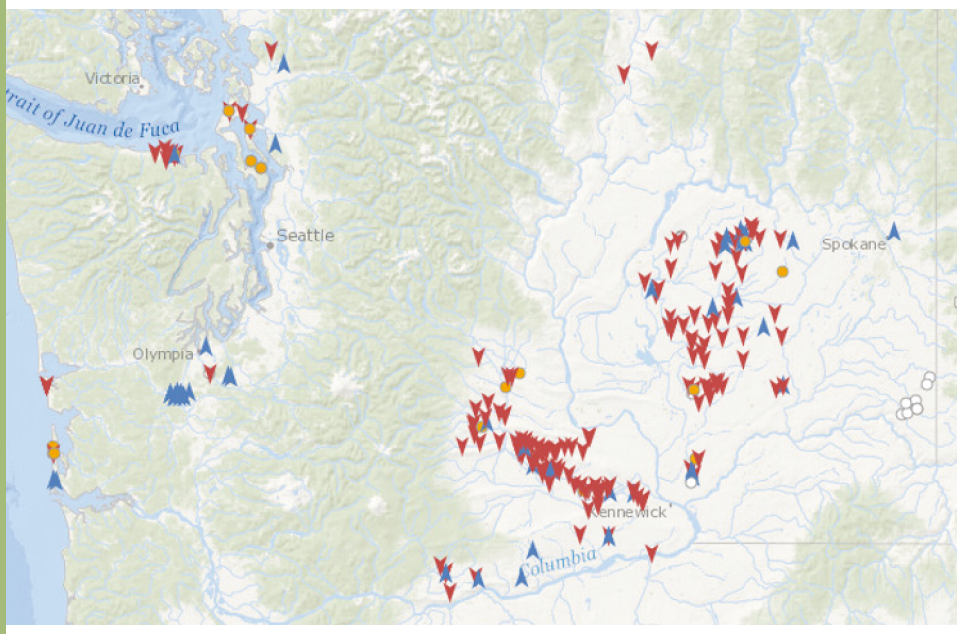
Climate change will affect groundwater levels in Washington.

We evaluated 264 wells to determine effects from the 2015 drought on groundwater levels. It was difficult to isolate drought impacts from widespread, longer-term declines in Eastern Washington.



But not the way you think.

Climate change will likely mean more groundwater pumping as declining streamflows reduce available water supplies and population growth increases demand.

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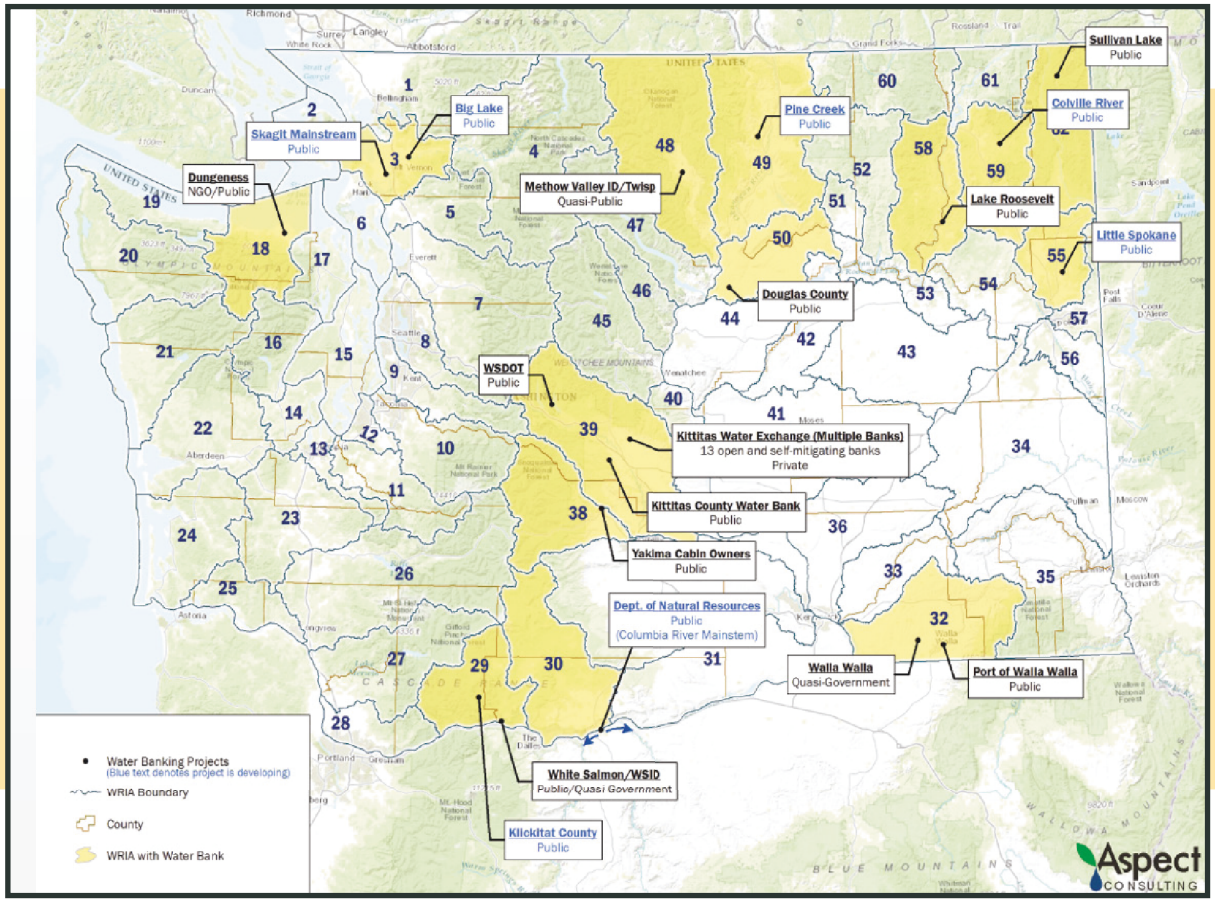
Water banks

Brokers, clearinghouses, and market-makers for water supplies

We facilitate water banking to help:

- **Create** a reliable water supply during dry years
- **Ensure** a future water supply for people, farms and fish
- **Promote** water conservation by encouraging water right holders to conserve and deposit rights into banks.



Water banking's win-win benefits:

- **Permits** new uses without harming instream resources
- **Protects** unused portions of senior water rights from relinquishment
- **Improves** instream flows for fish and wildlife

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Aquifer recharge

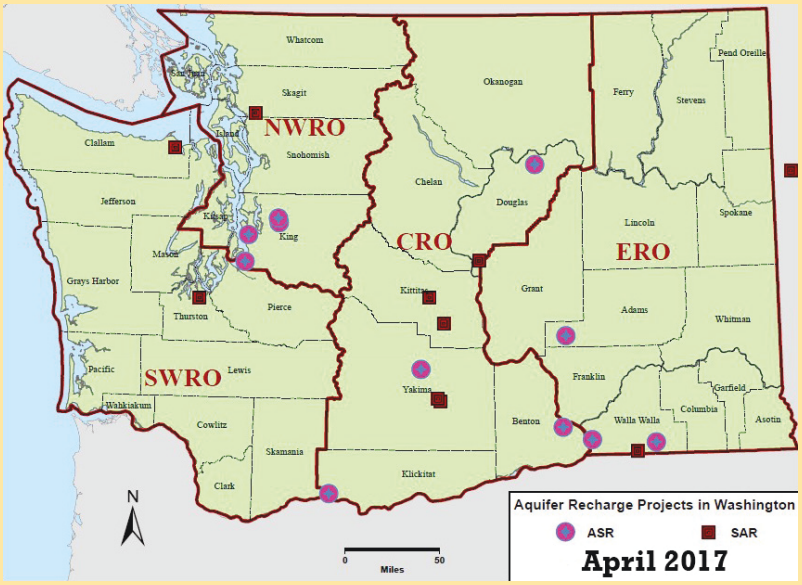
Aquifer Storage and Recovery (ASR):

The process of injecting water into an aquifer, where it is stored for use at a later time.

Groundwater storage can serve the same purposes as a surface water reservoir, without many of the issues and costs related to constructing dams. It may be used in places where surface storage is not practical or economically possible, including urban, industrial, and residential areas.

ASR's benefits

- Stores large quantities of water
- Avoids expensive surface reservoirs and their high environmental impacts
- Offers more protection from tampering than surface storage
- May stabilize or reverse declining water levels in an aquifer



Shallow Aquifer Recharge (SAR):

Similar to ASR in that water is injected into an aquifer, but the water is used to supplement streamflow rather than held for future withdrawls.

SAR supplements natural groundwater recharging. SAR projects divert waters to infiltrate sites such as fields, gravel pits, ponds, ditches, or shallow wells. Because surface water and groundwater are connected, SAR can add to streamflows and rejuvenate wetlands and springs. It can be an important tool for stabilizing or reversing declining groundwater levels and can mitigate for other water withdrawals.

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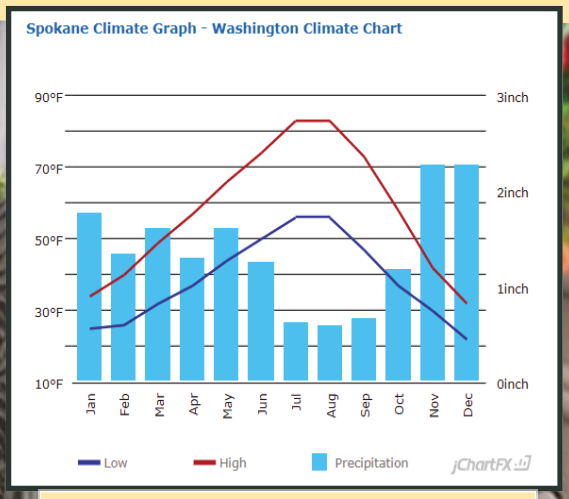
Rainwater collection in Washington? Yes, you can!

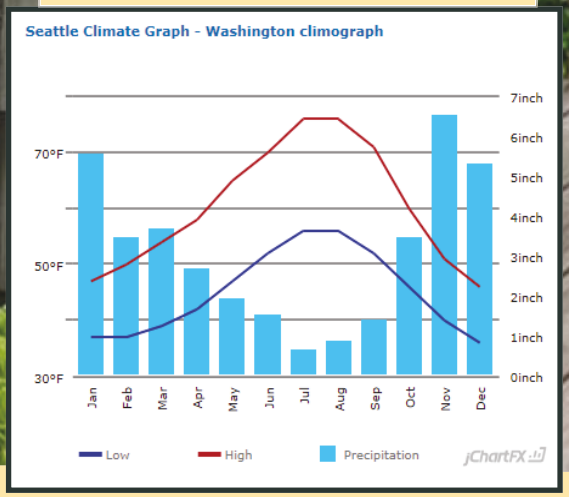
1. Rainwater must be used on the property where it is collected.
2. Rainwater must be collected from existing, non-dedicated structures.

Rainwater harvesting is a great way to:

- **Restore** the hydrologic cycle
- **Recharge** groundwater
- **Reduce** your carbon footprint
- **Maintain** healthy soils
- **Keep** your garden lush and healthy
- **Lessen** the effects of wet and dry spells



Cool & wet: collect.
Hot & dry: use it wisely!



Did you know:

The average garden hose puts out **10 gallons of water per minute** — that's 160 glasses of drinking water. Using a rain barrel, you're doing your bit to conserve.

Got rain? To maximize your collection potential, buy a large-capacity rain barrel or link multiple barrels together.

Rain collection rebate!

If you live in Seattle, the RainWise Program may cover most or all of your cost of installing a cistern or rain garden on your property.

For more information, visit www.rainwater.seattle.gov or call the Garden Hotline at 206-633-0224.

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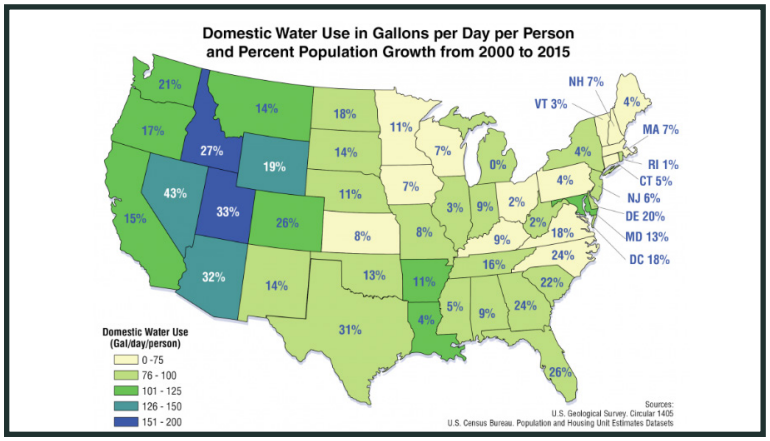
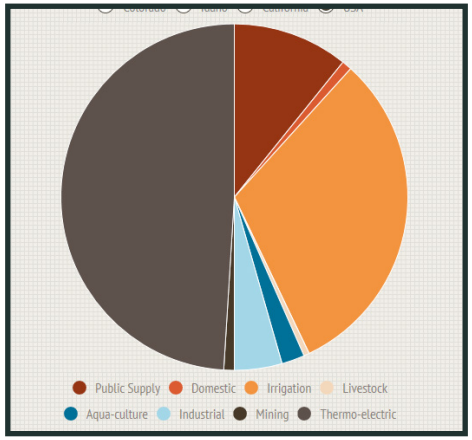
Water use varies widely across the United States

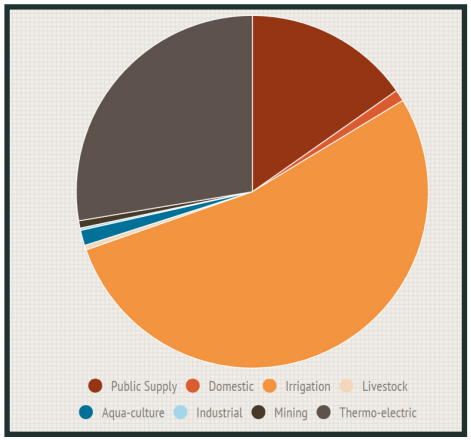
U.S. domestic water use



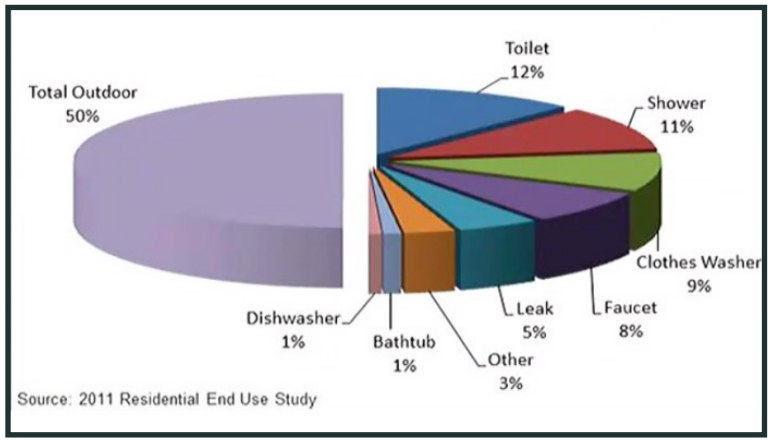
U.S water use



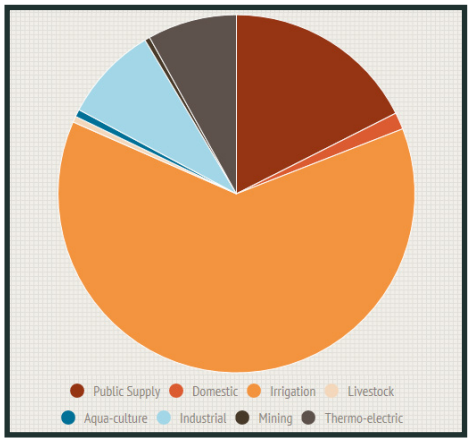
CA water use



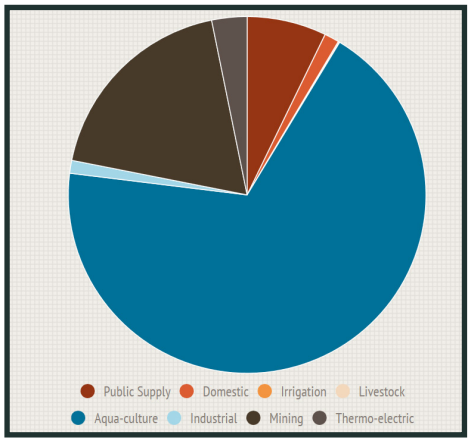
Single family water use



WA water use



AK water use



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How much water does it take to:

Make a hamburger?

460 gallons

Raise a chicken?

500 gallons

Make a cup of coffee?

35 gallons

Produce the steel for a car?

80,000 gallons
(plus 2.5 gallons per gallon of refined gasoline)

Make a shirt?

700 gallons

Make a pair of jeans?

1,800 gallons

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Sources: USGS/treehugger

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