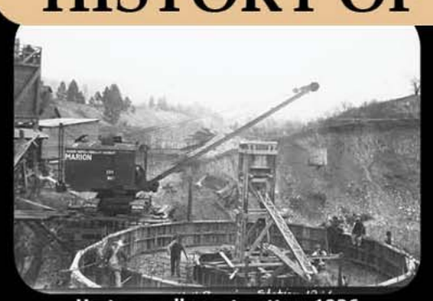
HISTORY OF WATER USE

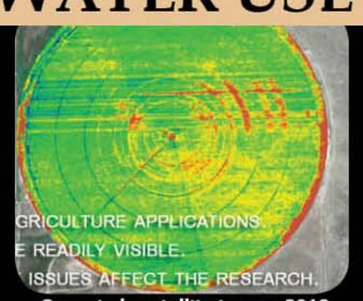

Corbin Ditch, ca 1900


Irrigation ditches, 1908


Field with wooden flume


Laying irrigation pipes,1908


Upriver well construction, 1926



Crop circle satellite image, 2012

Before wells with pumps were drilled into the Spokane Valley – Rathdrum Prairie (SVRP) aquifer, people used lakes, rivers, and springs for all of their water needs. Gravity was the only force that moved the water to its destination. This greatly limited the distance people could live from a water body.

1900s

Canals and flumes carried water from lakes, rivers, or hand-dug wells to the first irrigated crops over the SVRP aquifer. Canals needed the correct slope to get water to the fields, so they were difficult and costly to build. Large quantities of water leaked out of the bottom of the canals, so much of it was lost on the way to the fields. Water flow was manually controlled by "ditch walkers" who opened and closed gates.

In 1967, the last big irrigation canal shut down and SVRP aquifer water from drilled wells pumped into water towers finally supplied all the water used for agriculture and most other uses throughout the system. Underground pipes did not lose as much water as canals, partly because the water was not exposed to the air and lost to evaporation. Water flow in pipes was, and still is, controlled by valves in the pipe.

The first agricultural sprinklers used aboveground pipes to get water to crops. The pipes could be moved easily, and the slope was not as important. The sprinklers shot water up into the air before falling on the crop.

More recently, large agricultural sprinklers were changed to spray water down to reduce the evaporative losses before reaching the ground/crop.

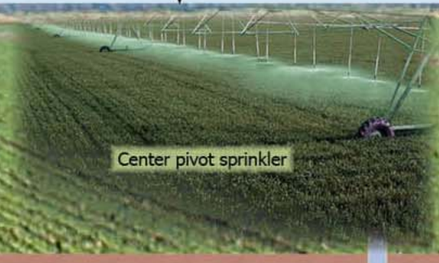
Today, new technology can help us use our water more efficiently. Indoors we can use WaterSense applicances and fixtures. Outdoors, many new computer-based innovations help put water on our landscape and crops evenly and at the right time.

2015

One new technology uses visible and infrared images, captured from satellites and aircraft to help farmers identify where fields are stressed, need more water, or are receiving too much water. With this information, farmers (and other land managers) can adjust their irrigation practices to maximize the crop yield obtained from a field while reducing water waste.


Modern Electric Water Company water tower


Movable pipe sprinklers


Center pivot sprinkler


Rathdrum Prairie AGRIMET station


Lake or river

Hand-dug well with brick lining

Drilled well

Aquifer surface

Another new technology is AGRIMET, a large network of automated weather stations placed near agricultural fields, that allows for field-specific irrigation scheduling. This makes it possible to use just the right amount of water needed for a crop, as local soil conditions can vary greatly over small distances. These weather stations are now becoming useful in helping homeowners more efficiently irrigate their yards by transmitting evapotranspiration (ET) data wirelessly to controllers. The data inform the controller whether it has rained recently and changes the scheduled watering period up or down, depending on how much water is present in the soil. The result is healthier grass, less water waste, and cheaper utility bills!

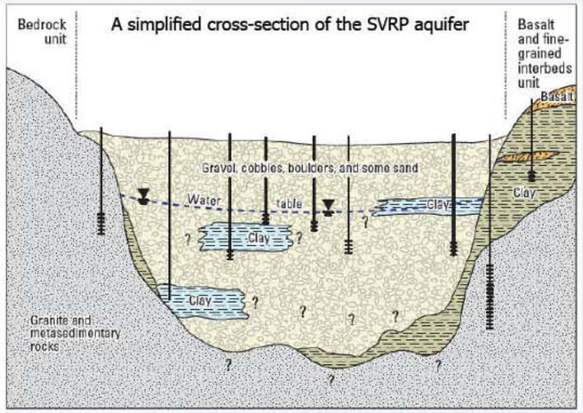
DRAFT
3/31/2015

The Spokane Valley – Rathdrum Prairie (SVRP) Aquifer

The SVRP aquifer covers about 370 square miles in northern Idaho and eastern Washington. It is composed of Ice Age flood deposited gravels, cobbles, and boulders and is filled with water. No continuous clay or silt layers exist across the SVRP aquifer to keep contaminants from the surface moving down into the SVRP aquifer.

The valley walls are composed of massive rocks and clay that continue below the ground surface to form the impervious basin that holds the SVRP aquifer gravels. Relatively flat basalt plateaus such as Five Mile Prairie and the Columbia Plateau rise hundreds of feet above the valley.

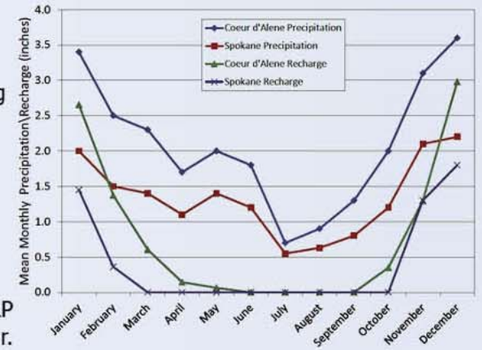
The Bitterroot Mountains east of Rathdrum Prairie and the Selkirk Mountains along the Washington – Idaho border also form the aquifer edges (or "basin"). These mountains are more than 2,000 feet higher than the basalt plateau to the southwest.



Not to scale

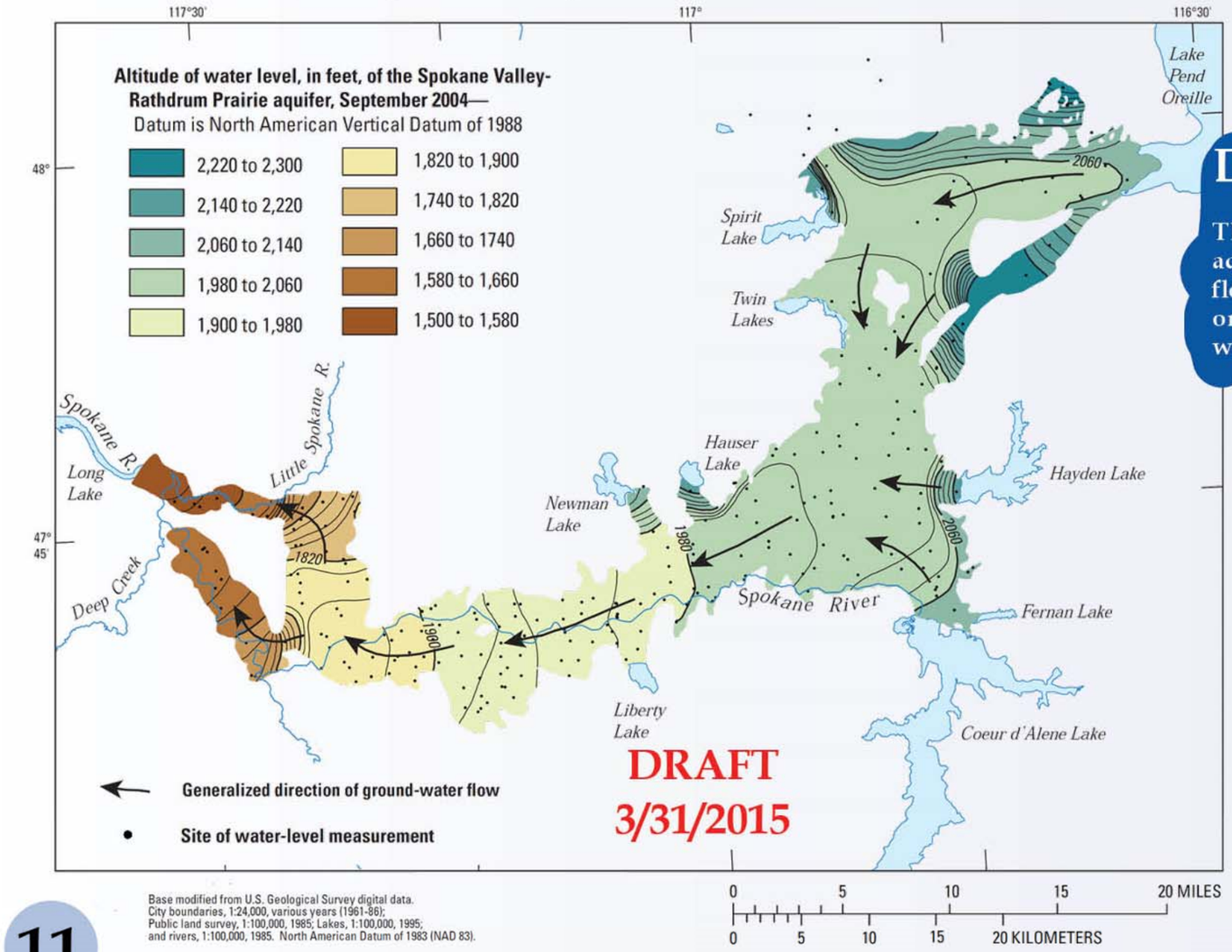
SVRP Aquifer Recharge

Water enters the SVRP aquifer from several sources including
1) Precipitation
2) Inflow from upland bedrock watersheds
3) Seepage from lakes
4) Seepage from the Spokane River
5) Water from irrigation
6) Effluent from septic systems



Precipitation that falls onto the land surface above the SVRP aquifer eventually infiltrates and recharges the aquifer. Precipitation that falls onto the bedrock upland areas infiltrates very little because the bedrock is not very permeable. The water moves more laterally eventually combining with other water in the watershed and forming small streams. These streams flow downhill and discharge onto the permeable soils above the aquifer and quickly infiltrate downward to the water table. Some of the watersheds have lakes at the bottom that collect all the water. The lakes contribute water to the aquifer either through seepage from the bottom or overflow to streams that discharges onto the land surface above the aquifer. The Water Budget on page 14 shows the average amount of water that enters the SVRP aquifer from each of these sources in a year.

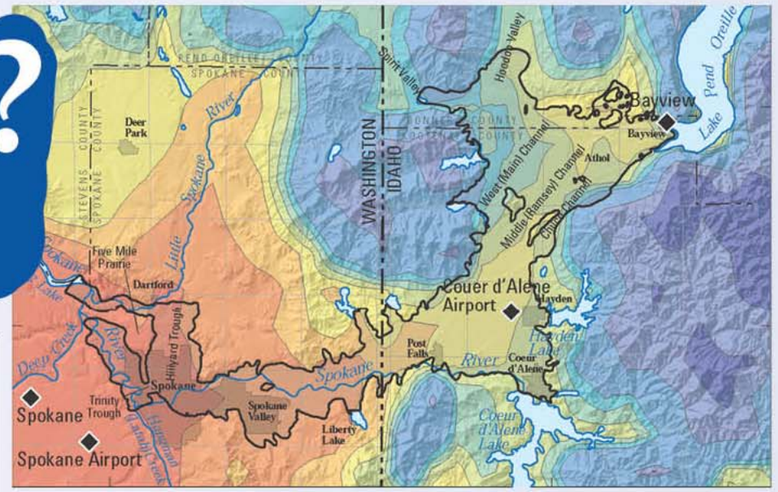
The amount of water that recharges the SVRP aquifer is lowest in the summer and highest in the spring when the snow melts.



Base modified from U.S. Geological Survey digital data.
City boundaries, 1:24,000, various years (1961-86);
Public land survey, 1:100,000, 1985; Lakes, 1:100,000, 1995;
and rivers, 1:100,000, 1985. North American Datum of 1983 (NAD 83).

Did you know?

The surface of the SVRP aquifer is so porous creeks flow only a short distance on top of it before all the water soaks into the ground.



Average Annual Precipitation
in inches

16.0 - 18.0	26.1 - 28.0
18.1 - 20.0	28.1 - 30.0
20.1 - 22.0	30.1 - 40.0
22.1 - 24.0	40.1 - 50.0
24.1 - 26.0	50.1 - 67.0

Groundwater Flow

The elevation of groundwater in the northern Rathdrum Prairie is about 2,110 feet while the elevation is about 1,550 feet near Lake Spokane. Groundwater in the SVRP aquifer flows from the northern Rathdrum Prairie area southward to Coeur d'Alene–Post Falls, then toward the west into Washington. The water flows through Spokane–Spokane Valley areas and separates to flow around the Five Mile Prairie. All the water eventually empties into the Spokane and Little Spokane Rivers that flow into Lake Spokane. Because of the very permeable nature of the aquifer, groundwater flow velocities can reach approximately 50 feet per day.

In some places, water seeps out of the bottom of the Spokane River and supplies a lot of recharge to the SVRP aquifer. Water is pumped from the SVRP aquifer for people to use. Some of this water is returned to the SVRP aquifer through irrigation or septic discharge. Generally people use more water than is returned to the SVRP aquifer, so there is a net loss.

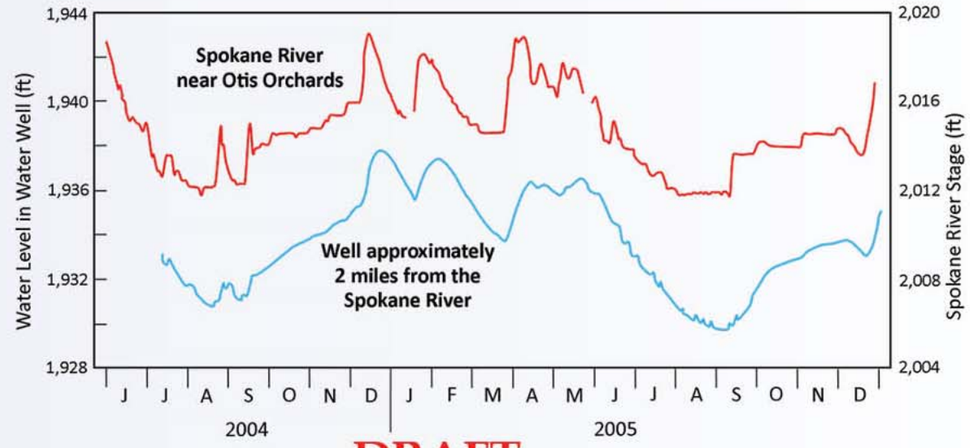
Spokane Valley – Rathdrum Prairie (SVRP) Aquifer - Spokane River Interconnection

The large spaces between the rocks in the SVRP aquifer allow relatively large interchanges of water with the river. The losing reaches of the Spokane River are the largest recharge source to the SVRP aquifer. The gaining reaches of the river get a significant amount of water from the SVRP aquifer.

SVRP Aquifer And Spokane River Water Levels

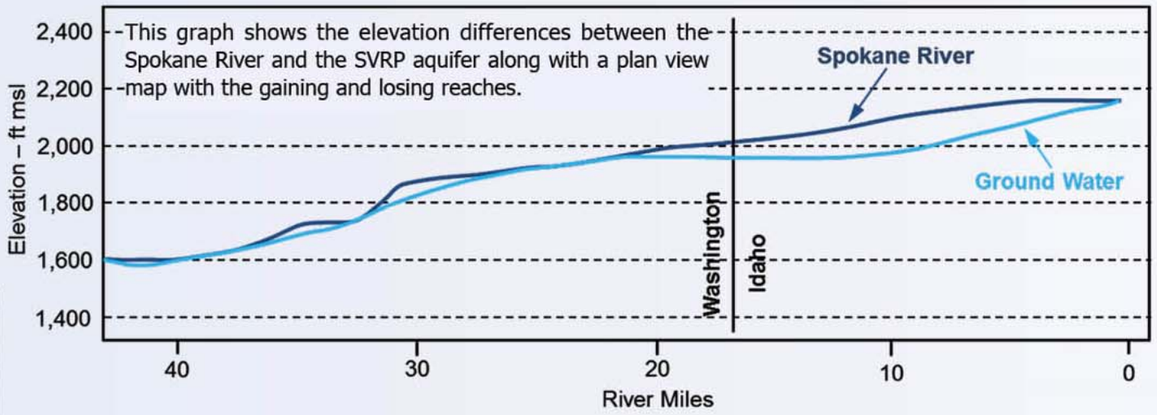
The aquifer surface levels in the SVRP aquifer downstream of Post Falls depend on the flow in the Spokane River. The Spokane Valley well on the graph is located 2 miles from the Spokane River. The many peaks and valleys of the aquifer surface levels seen in the Spokane Valley well correspond to peaks and valleys of Spokane River water levels, which show their interconnection.

Pumping from the SVRP aquifer can lower the amount of groundwater that seeps into the Spokane River in the gaining reaches, which reduces the river flow. The closer a well is located to the gaining reach, or the greater the pumping rate, the larger the reduction will be. Keeping enough water in the Spokane River is important to maintain a healthy environment for fish and other aquatic life.



Did you know ?

The Spokane River is the largest source of water to the SVRP aquifer and most water leaving the SVRP aquifer goes to the Spokane River.



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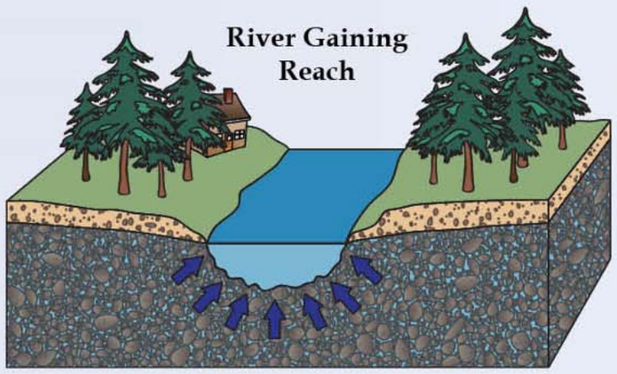
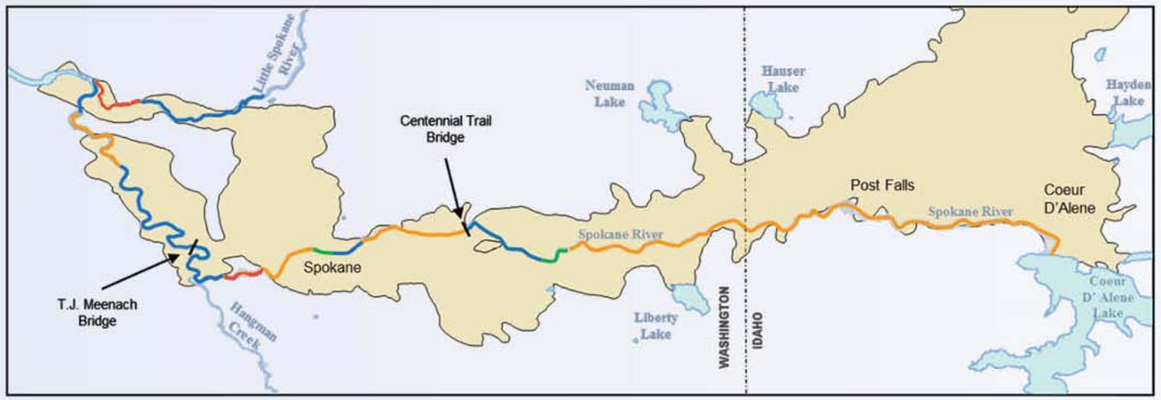


The surface elevation of the SVRP aquifer is a little higher than the bottom of the river in parts of Washington. Water flows into the river through the bottom or through springs on the banks of the river. These are called "gaining reaches".

The Spokane River flows from Coeur d'Alene Lake in Idaho westward into Washington and into Lake Spokane. The river bottom is higher than the SVRP aquifer in Idaho and parts of Washington. In these areas the water seeps out of the bottom of the river and recharges the Spokane Valley - Rathdrum Prairie (SVRP) aquifer. These are called "losing reaches" of the river.

This is a gaining reach of the Spokane River near Sullivan Road. The ripples on the water at the bottom left corner of the picture shows water flowing out of the SVRP aquifer and into the river on August 20, 2003



Losing Reach: the river loses water to the aquifer

Gaining Reach: the river gains water to the aquifer

Transitional Reach: changing condition between gain/lose

Minimal Interaction: the river neither gains nor loses

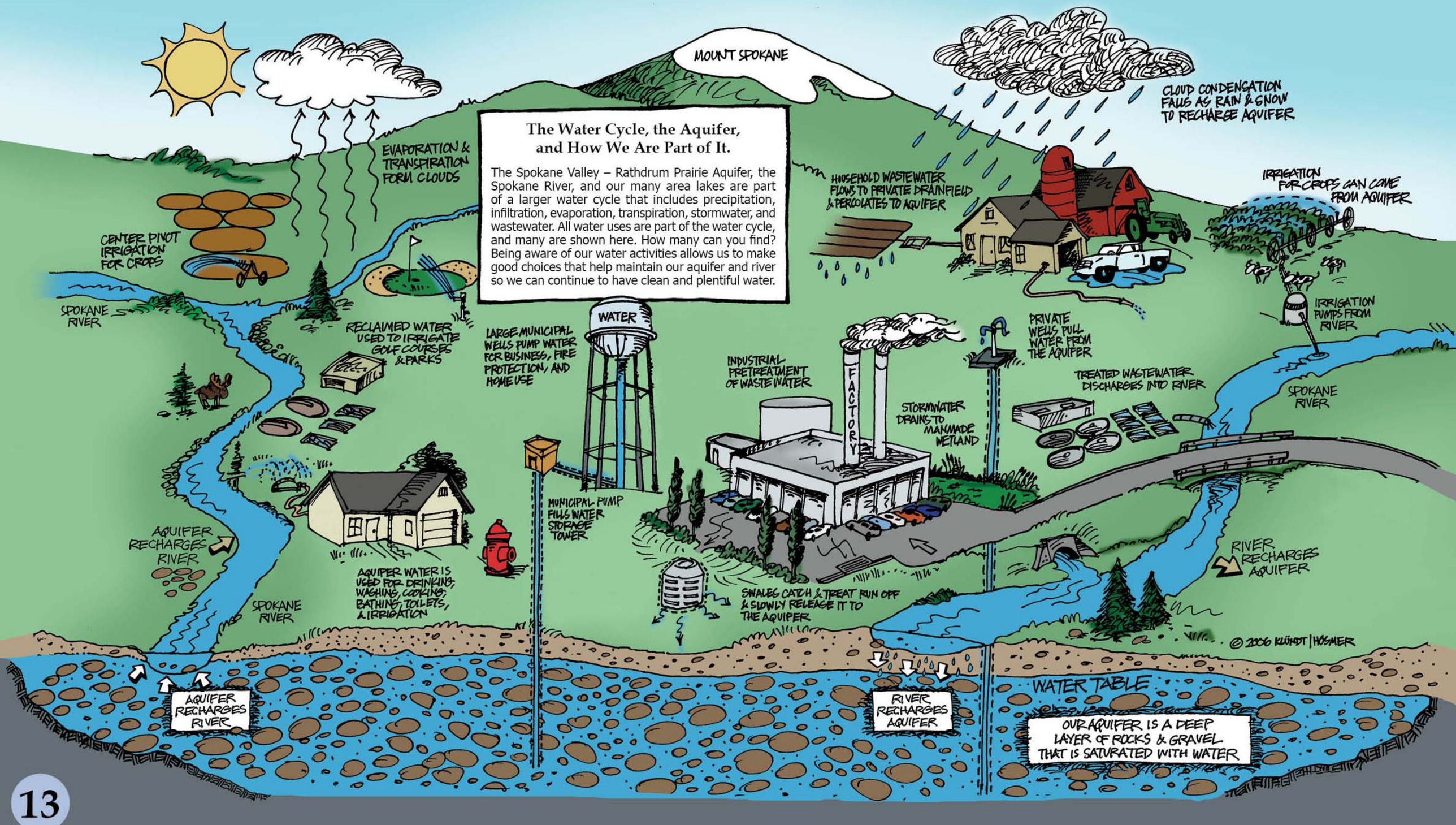
This losing reach of the Spokane River near Greenacres had very little flow on August 1, 2003.

WATER CYCLE

DRAFT
4/6/2015

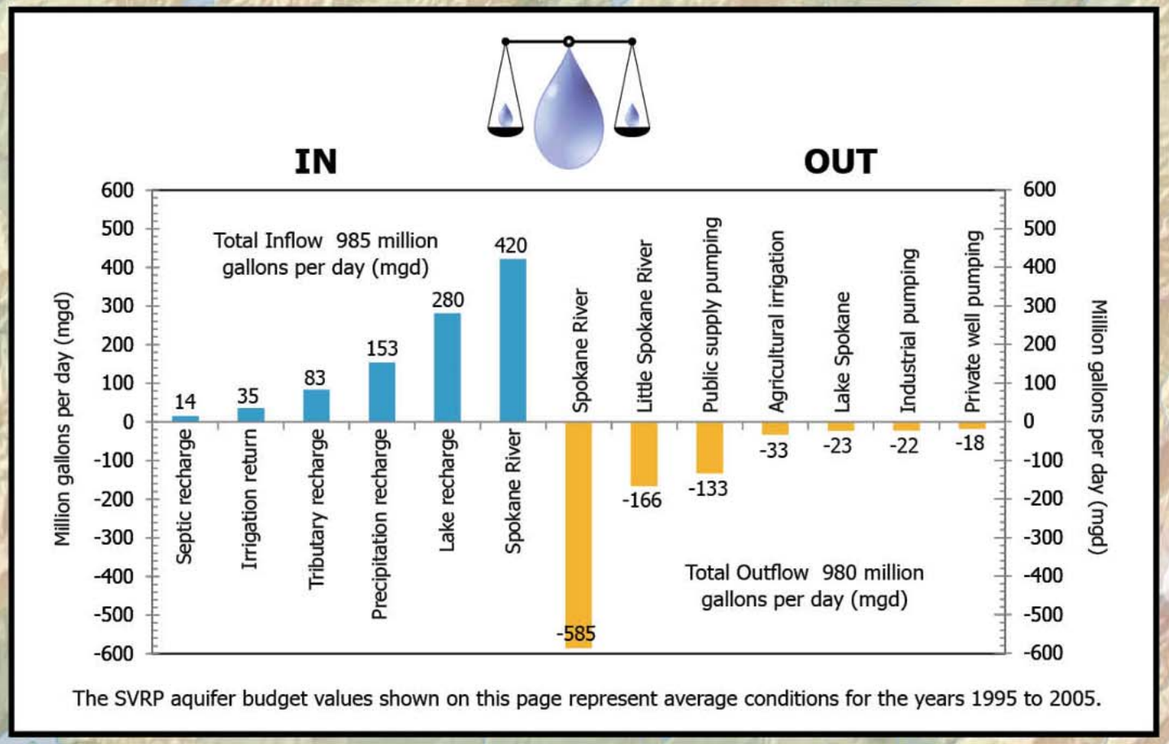
The Water Cycle, the Aquifer, and How We Are Part of It.

The Spokane Valley – Rathdrum Prairie Aquifer, the Spokane River, and our many area lakes are part of a larger water cycle that includes precipitation, infiltration, evaporation, transpiration, stormwater, and wastewater. All water uses are part of the water cycle, and many are shown here. How many can you find? Being aware of our water activities allows us to make good choices that help maintain our aquifer and river so we can continue to have clean and plentiful water.



WATER BUDGET

The Spokane Valley – Rathdrum Prairie (SVRP) aquifer is dynamic with water flowing into and out of the system. Like a household budget, a water budget is an accounting of the amount and source of water recharging the SVRP aquifer, and the amount and destination of water discharging from the SVRP aquifer. This water budget is organized into two categories: inflow (water that recharges or flows IN to the SVRP aquifer) and outflow (water that discharges or flows OUT of the SVRP aquifer). As in any successful budget, the IN and OUT numbers should match!



The SVRP aquifer budget values shown on this page represent average conditions for the years 1995 to 2005.

153 mgd enter the aquifer from precipitation that lands on the ground above the aquifer.

Lake Pend Oreille adds 43 mgd

Spirit Lake adds 36 mgd

Twin Lakes add 26 mgd

Tributary basins add 83 mgd

Agricultural and golf course irrigation returns 35 mgd

The Spokane River plays a key role in the aquifer water budget: the river provides about 49% of the SVRP aquifer inflow, and it receives almost 59% of the SVRP aquifer outflow. The lakes near the SVRP aquifer contribute about 20% of the inflow.

Human uses are only about 21% of the SVRP aquifer outflow. Look on page 15 to find out how much SVRP aquifer water people in Idaho and Washington use.

This is Waikiki Spring discharging to the Little Spokane River.

DRAFT 3/31/2015

Subsurface flow to Lake Spokane takes 23 mgd

166 mgd discharge to the Little Spokane River

Irrigation only wells pump 33 mgd

Newman Lake adds 15 mgd

Hauser Lake adds 13 mgd

Hayden Lake adds 45 mgd

Hayden Lake recharge

Public water systems pump, store, and deliver SVRP aquifer water.

585 mgd discharge to the Spokane River

Public supply wells pump 133 mgd

Industrial wells pump 22 mgd

The Spokane River adds 420 mgd

Domestic wells pump 18 mgd

Fernan Lake adds 10 mgd

Coeur d'Alene Lake adds 89 mgd

Septic systems add 14 mgd

Liberty Lake adds 4 mgd

Water that goes down a storm drain is included with the precipitation that lands on the ground.

Water flowing into the SVRP aquifer

Water flowing out of the SVRP aquifer

Did you know ?

Close to 1 billion gallons of water flows into and out of the SVRP aquifer each day.

The information on this page are adapted from USGS Scientific Investigations Report 2007-5044.

WATER USE

Everyone who lives in the Spokane Valley – Rathdrum Prairie (SVRP) area uses the aquifer as their water supply. We use water from the SVRP aquifer to drink, flush our toilets, water our yards, and irrigate crops. Being good stewards of our aquifer means knowing how much water we use and how much is available.

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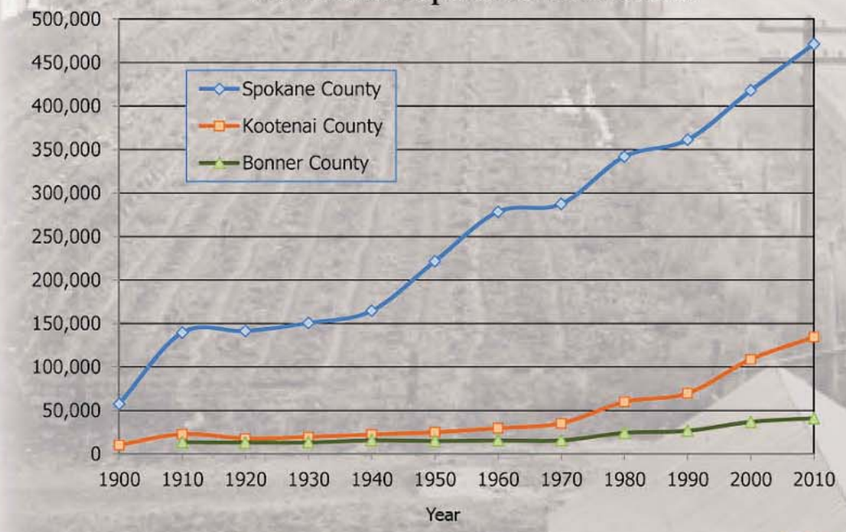
3/31/2015

US Census Population 1900 to 2010



Population and Land Use

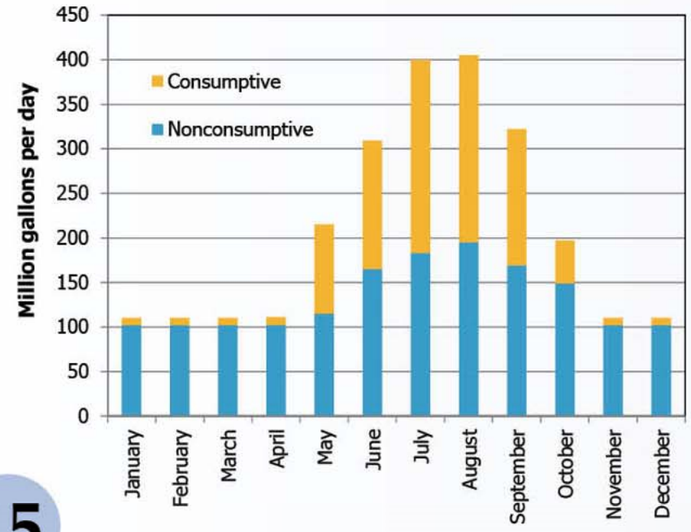
The population over the SVRP aquifer has been increasing since 1900. Most of the population growth occurred in the municipal areas. Most of the population of Spokane and Kootenai Counties use SVRP aquifer water. while very few Bonner County residents live over and use the aquifer. Water use increases as the population grows.

Land use in our area has changed over the years from a few houses and a lot of agriculture with canal irrigation to many houses with lawns and some agriculture using sprinkler irrigation. Water use changes as land use changes.

Background picture: Looking south from the Modern Electric Water Company water tower on Pines towards Broadway in 1908.

DID YOU KNOW ?

Some of the water we pump and use out of the SVRP aquifer returns to the aquifer or Spokane River.



Monthly Water Use

We use more water in the summer because we irrigate our lawns and fields. The amount of irrigation water we use depends mostly on precipitation and the amount of evaporation. The annual precipitation varies across the SVRP aquifer, increasing from west to east. The average annual precipitation in Spokane is about 16 inches, while it is over 25 inches in Coeur d'Alene.

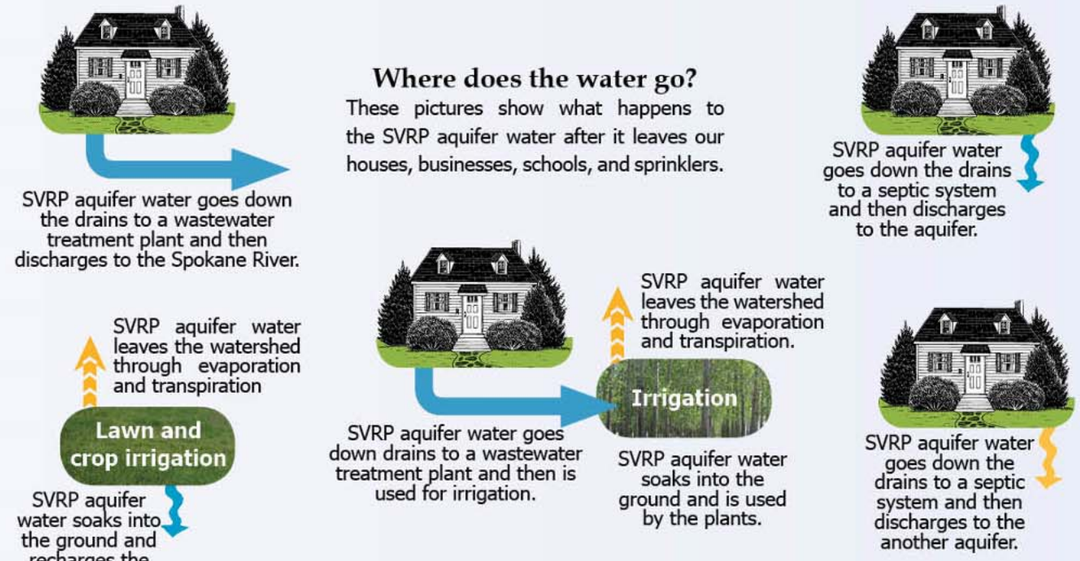
This graph shows how much more water we use in the summer. It also shows the amount of consumptive water use in each month.

Consumptive and Nonconsumptive Water Use

All the water we pump from the SVRP aquifer either returns to the watershed (the aquifer or the Spokane River) or it leaves the watershed. When it returns to the watershed it is nonconsumptive water use. Consumptive water use usually happens when the water evaporates or transpires. Transpiriation happens when water moves through plants then is released through small pores in the leaves. Consumptive water use can also happen when the water is exported to another watershed, aquifer or river.

Where does the water go?

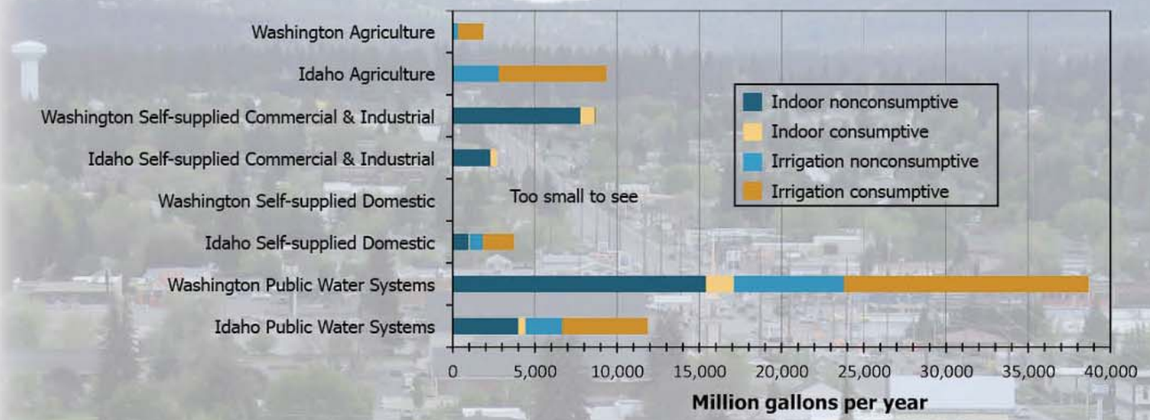
These pictures show what happens to the SVRP aquifer water after it leaves our houses, businesses, schools, and sprinklers.



SVRP Aquifer Water Use

Today, the water is used for different purposes depending on where you are on the SVRP aquifer. Public water systems supply residents, businesses, manufacturers, and irrigation for schools and parks. Private wells also supply water for residences and businesses, but significant quantities are used for agricultural irrigation.

The Idaho Comprehensive Aquifer Planning and Management Program (CAMP) process calculated average annual water uses for 2009 to 2013, and the Spokane County Water Demand Forecast process calculated water uses for 2010.



Background picture: Looking south from the Modern Electric Water Company water tower on Pines towards Broadway in 2008.

FORECAST OF SPOKANE VALLEY – RATHDRUM PRAIRIE (SVRP) AQUIFER WATER USE IN SPOKANE COUNTY

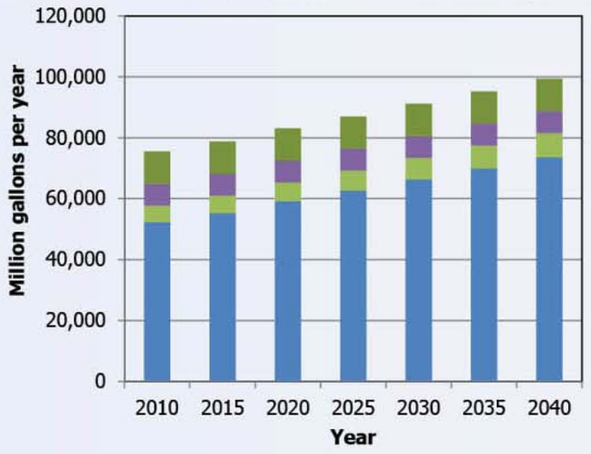
The goals for the Spokane County Water Demand study included developing a model to forecast future water use for consumptive uses in Spokane County so the local groups can generate their own forecasts.

The Forecast Model is a spreadsheet model based on water use data, population and economic data, agricultural and industrial data, and 20-year average temperatures and precipitation. It can be modified to use different inputs as new information becomes available.

SVRP aquifer water use for Spokane County is forecasted to increase 31% by 2040. The increase is approximately 37 billion gallons a year, which is significant given that the most recent USGS study shows increases in withdrawal from the SVRP aquifer decreases flow in the Spokane River.

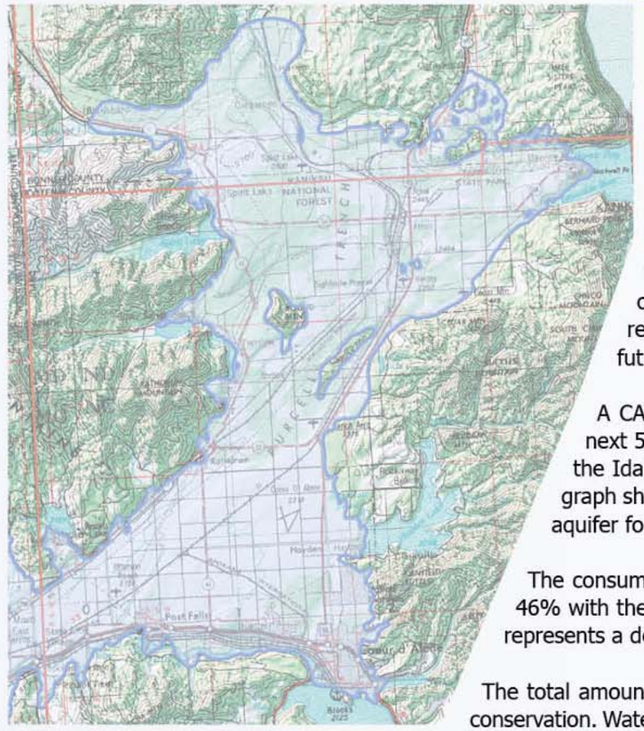
The SVRP aquifer provides 73% of the water used in Spokane County and provides a significant amount of water to the Spokane River during low flow times of the year. Analyses of consumptive and nonconsumptive water use and return flows give a better understanding of the interaction of water use and the river-aquifer system.

The water use projections are based on the 20-year average temperatures and precipitation. Using the cooler and wetter weather of 2005 decreased the modeled water use by 5%. Using the hotter and drier weather from 2006 increased the modeled water use by 5%. Conservation lowers water demand, but warmer drier weather can counteract the savings.



Spokane County water use projections by use for the SVRP aquifer for 2010 to 2040.

Spokane County Water Demand Forecast Model was developed throughout 2010 and 2011 by Spokane County Water Resources, technical consultants Tetra Tech and CDM, and an advisory committee comprised of area utility providers, local and state government, academics, and citizens. Funding for the project was provided by the Washington Department of Ecology. Spokane County collected data on water use. The main source of demographic data used in the demand model was the Spokane Regional Transportation Council 2040 Growth Forecasts for Employment, Housing, and Transportation.



Rathdrum Prairie Aquifer Area

FORECAST OF SVRP AQUIFER WATER USE IN KOOTENAI AND BONNER COUNTIES

The Idaho Comprehensive Aquifer Planning and Management Program (CAMP) was created to provide information for managing ground and surface water resources into the future. The purpose of CAMP is to avoid future conflicts over water resources, prioritize state investments in water resources, and find ways to decrease the difference between future water needs and available supply.

A CAMP report forecasts Rathdrum Prairie water use over the next 50 years for three levels of population growth based on the the Idaho Economic Forecasting Model. The water use projection graph shows the amount of water that could be withdrawn from the aquifer for low, baseline, and high population growth possibilities.

The consumptive portion of the projected water use in 2060 is about 46% with the rest returning to the SVRP aquifer or Spokane River. This represents a decrease from 53% consumptive use in 2010.

The total amount of projected water use could be reduced through water conservation. Water conservation means using less water for the same activity. Conservation could include more efficient dishwashers, low flow shower heads, better irrigation methods, and landscaping with native plants that need less water. Aggressive water conservation could reduce the projected water use up to 40%.

DRAFT
3/31/2015

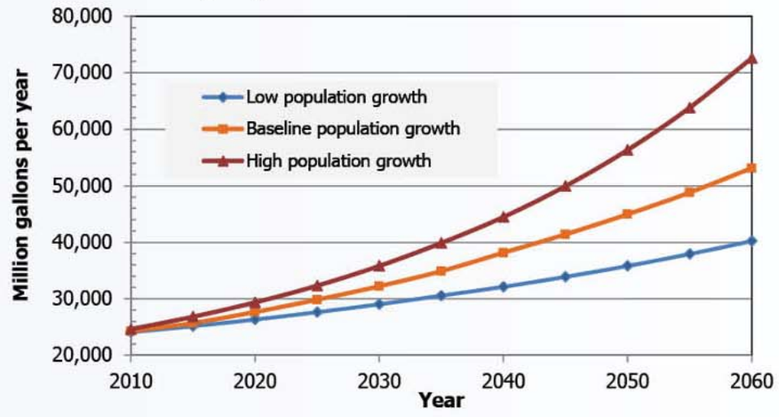
Did you know ?

The USGS SVRP aquifer model indicates that water pumped from the SVRP aquifer reduces flow in the Spokane and Little Spokane Rivers.

Climate Change

Climate change will affect future water use. The Climate Impacts Group (CIG) at the University of Washington studied the potential change in climate for the Pacific Northwest. The CIG studies indicate that the SVRP aquifer area could experience higher temperatures along with wetter fall and winter months and drier spring and summer months. These changes mean increased irrigation with additional withdrawals from the SVRP aquifer. The additional withdrawals would increase the amount of consumptive use and decrease summer flows in the Spokane River.

Idaho CAMP water use projections for 2010 to 2060



The Idaho water-demand study was conducted for (and funded by) the Idaho Water Resource Board (IWRB) as part of the Rathdrum Prairie CAMP process. The study was conducted by SPF Water Engineering, LLC, AMEC Earth and Environmental, Idaho Economics (John Church), and Taunton Consulting, with guidance from the IWRB, Idaho Department of Water Resources, and the Rathdrum Prairie CAMP Advisory Committee.

SVRP AQUIFER MONITORING

The Spokane Valley – Rathdrum Prairie (SVRP) aquifer is the primary source of water for drinking and irrigation for over 500,000 people living in the area. The SVRP aquifer has been designated as a sole source aquifer by the US Environmental Protection Agency and as a sensitive resource aquifer by the Idaho Department of Environmental Quality. The large number of people that use the SVRP aquifer and the lack of any natural barriers to prevent pollutants from reaching the aquifer mean it is important to monitor the water quality and water quantity.

All public water systems are required to regularly monitor water quality in their wells. The water quality information is reported in their annual Consummer Confidence Report which, you can get from the public water system's website or by calling their office.

Spokane County has been monitoring water quality conditions in the aquifer since 1977. Monitoring the aquifer shows the effects of human activities and replacing septic systems with sewers. Currently, water resources staff collect samples quarterly from up to 29 monitoring wells and 16 public supply wells. The samples are tested for nitrate, phosphorus, lead, arsenic, chloride, and other chemicals.

Washington Department of Ecology's water programs work closely with Washington communities to clean up and protect water quality in Washington. They also work to ensure the state has clean, adequate water supplies that meet current and future drinking water needs, commercial and agricultural uses, and can sustain fish and the natural environment.

The Panhandle Health District (PHD) has been monitoring the aquifer on the Rathdrum Prairie since 1975. The sampling began because of concerns about the increasing number of septic systems and the potential to impact water quality. The sampling program has changed over time. Today PHD monitors approximately 28 wells three times a year for chemicals such as nitrate, arsenic, and chloride.

Did you know?

The SVRP aquifer is unconfined meaning it has no protective layer of clay or rock above it to keep out pollutants that are spilled on or near the ground surface.

The US Geological Survey (USGS) has done sevaral studies on the water quality and water quantity of the SVRP aquifer. For the most recent study, they measured water levels in many wells. They created a computer model of the aquifer using the data. For another study, they measured both water levels and water quality to understand the interaction between the aquifer and the Spokane River.

The Idaho State Department of Agriculture (ISDA) groundwater monitoring program addresses issues that involve pesticides, fertilizers, and other potential agricultural contaminants. ISDA regional monitoring projects are located in areas where groundwater quality is susceptible to degradation from agricultural practices.

The Idaho Department of Water Resources (IDWR) began monitoring groundwater on the Rathdrum Prairie in 1990. The program objectives are to characterize the groundwater quality of the state's major aquifers, identify trends and changes in groundwater quality within the state's major aquifers, and identify potential groundwater quality problem areas.

The Idaho Department of Environmental Quality (DEQ) is the lead agency for groundwater quality issues on the Rathdrum Prairie. DEQ provides oversight for monitoring related to incidental releases and completes specific groundwater studies evaluating regional geochemistry or for specific constituents such as phosphorus.

Collecting a water sample from an SVRP aquifer monitoring well.

Legend

- IDWR monitoring wells
- ISDA monitoring wells
- Panhandle Health District monitoring wells
- Spokane County monitoring wells
- Washington Public Supply wells
- USGS monitoring wells

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3/31/2015

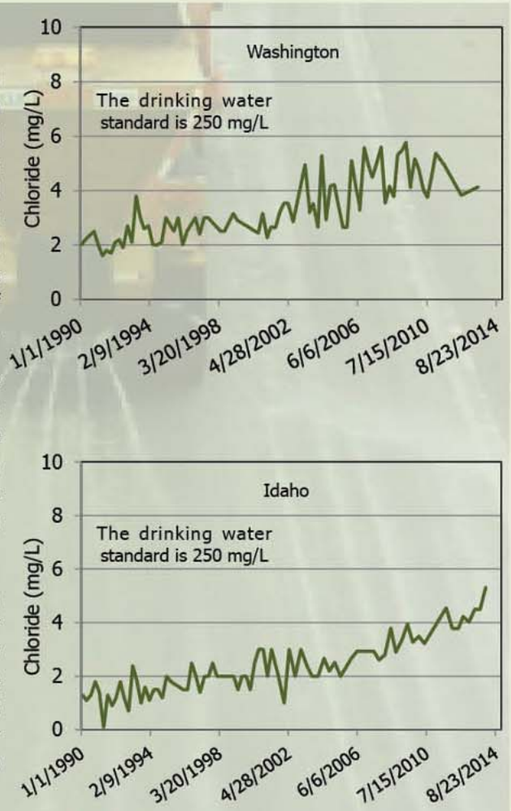
SVRP AQUIFER MONITORING

Chloride Trends

Chloride, not to be confused with chlorine added to drinking water and swimming pools, gets into groundwater naturally when it dissolves from rocks and soil. Chloride is also added to groundwater from human sources such as wastewater, leaking landfills, industrial waste, fertilizer, and deicing salt. Chloride, dissolved in water, can move very easily through sand and gravel from the ground to the water table and through the aquifer. This means that chloride is a good indicator of human activities that may be impacting aquifer quality.

The lowest chloride concentrations in the Spokane Valley – Rathdrum Prairie (SVRP) aquifer are less than 1 milligram per liter (mg/L). Since the mid-1990s, the chloride concentrations have been increasing slightly, some getting near 30 mg/L. Fortunately, the chloride concentrations are still significantly below the drinking water standard of 250 mg/L.

One large source of chloride is the salt used for deicing roads, parking lots, and sidewalks. During the winter season hundreds of pounds of salt can be used for every mile of road to make them safer for driving. Discharge from septic systems can have chloride concentrations around 50 mg/L. Thousands of septic drainfields over the SVRP aquifer can contribute to the elevated chloride concentrations.



The increasing chloride concentrations tend to be in areas with higher populations. The graphs show the chloride concentrations in the water from two wells in the SVRP aquifer with increasing chloride trends.

Phosphorus

Phosphorus is an important nutrient required for plant growth. Too much phosphorus in a lake or river can lead to excessive algae and aquatic plant growth. Excessive plant growth in lakes and rivers can make the water unsafe for swimming or reduce dissolved oxygen for fish.

Local efforts to reduce phosphorus pollution since the 1970s have led to reductions of phosphorus in household products such as laundry detergent, dishwasher detergent, and turf fertilizer. Keeping phosphorus out of these products helps protect groundwater, surface water, and the environment.

Spokane County collects groundwater phosphorus samples from the SVRP aquifer to better understand how phosphorus concentrations vary by location. SVRP aquifer water flowing into the rivers have very low phosphorus concentrations.

DRAFT
3/31/2015

Did you know ?

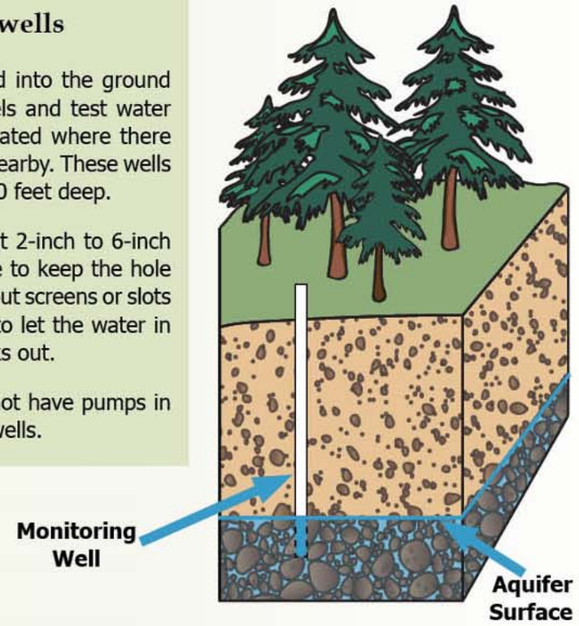
Monitoring of water quality and water levels shows how the SVRP aquifer is changing over time.

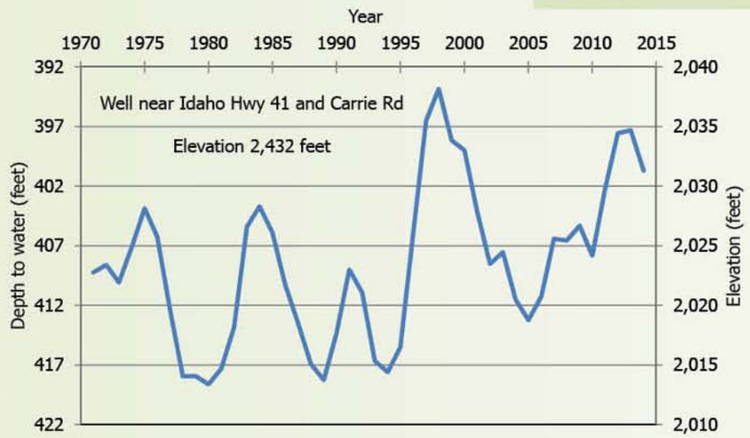
Monitoring wells

Monitoring wells are drilled into the ground to measure the water levels and test water quality. They are often located where there are no public supply wells nearby. These wells may be from 30 to over 400 feet deep.

The well drillers usually put 2-inch to 6-inch diameter pipe into the hole to keep the hole from collapsing. They also put screens or slots at the bottom of the pipe to let the water in but keep the sand and rocks out.

Most monitoring wells do not have pumps in them unlike public supply wells.

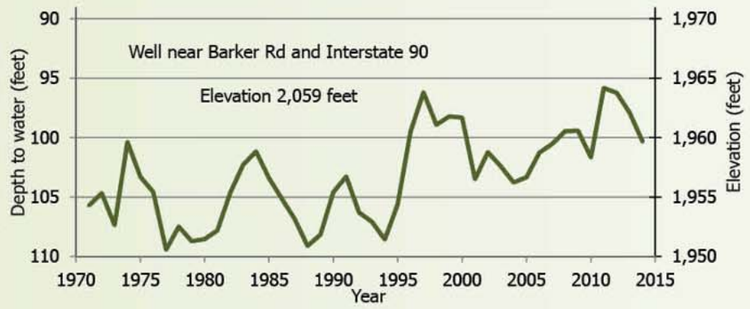




Annual average aquifer surface elevations

These wells are both measured by the USGS — one in Idaho and the other in Washington. The data on these graphs represent the average of all the measurements taken in each year.

The SVRP aquifer surface elevation in the well in Idaho is much higher than in the well in Washington, and the averages vary by more than 25 feet in the Idaho well and less than 15 feet in the Washington well. The SVRP aquifer surface levels in the Washington well are influenced by the flow in the Spokane River while the levels in the Idaho well are influenced mainly by snow melt and precipitation.

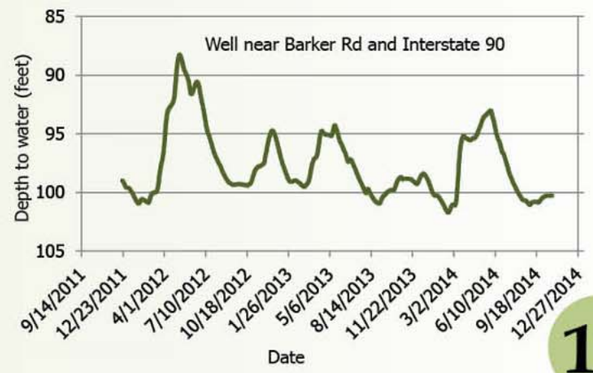


SVRP Aquifer Surface Elevations Monitoring

The USGS and others measure the depth of the SVRP aquifer surface below the ground surface. SVRP aquifer surface elevations are calculated from these data. Changes in SVRP aquifer surface elevations are caused by precipitation, water pumping, and river flow.

Daily aquifer surface elevation measurements

The water levels in this well have been measured daily by an electronic device since September 2011. The peak level was in May 2012 when the Spokane River had high flows from snow melt in Idaho mountains. The lowest levels are in the summer when we have the least precipitation and lowest flows in the Spokane River.



STORM DRAINS & THE AQUIFER


I90 Flooding

WHAT IS STORMWATER?

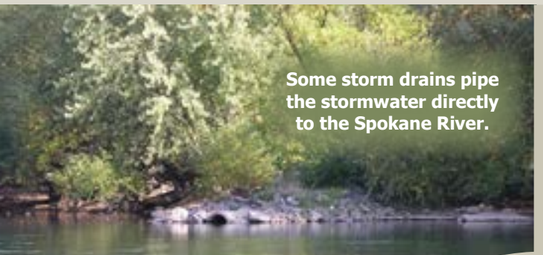
Rain and snowmelt are important for healthy wildlife habitat, recreation, and replenishing groundwater supplies in the Spokane Valley - Rathdrum Prairie (SVRP) aquifer.

However, when we replace the natural landscape with rooftops, parking lots, and streets, the water no longer soaks naturally into the ground. Instead, it flows across these hard surfaces as stormwater runoff.

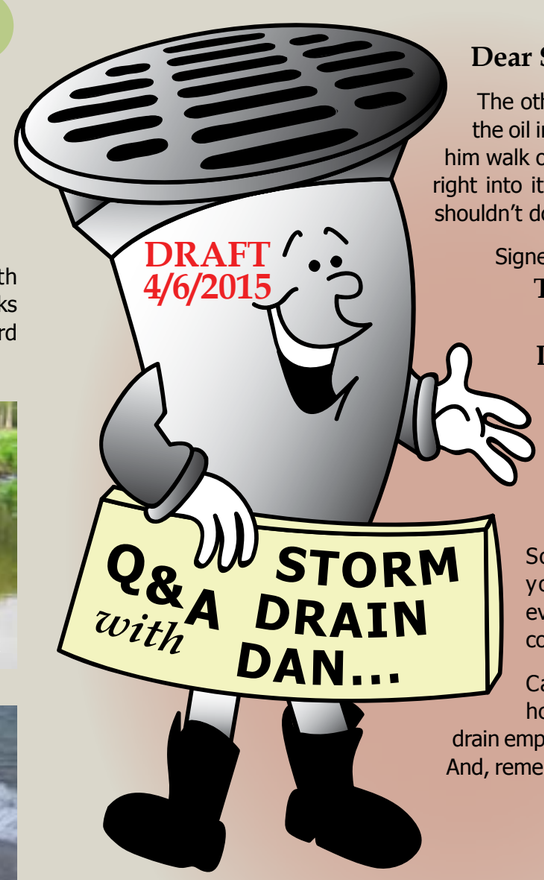
It's important for local governments and businesses to manage runoff as quickly as possible to prevent flooding, erosion, and water pollution. In our region, storm drains are the most commonly used method to handle stormwater runoff, as they can easily be placed in the curb and gutter during road and parking lot construction.

Storm drains can pipe runoff to a variety of places. Check out the photos below to learn about the many different places storm drains lead, including to the SVRP aquifer!


Eroded Streambank


Some storm drains pipe the stormwater directly to the Spokane River.


Some storm drains lead to lakes. Area lakes ultimately discharge to the Spokane River or infiltrate to the SVRP aquifer.



Dear Storm Drain Dan,

The other day I saw my neighbor changing the oil in his car on his driveway. Then, I saw him walk over to a storm drain and pour the oil right into it! I ran over to tell him he probably shouldn't do that but couldn't explain why.

Signed,
To Dump, or Not To Dump?

Dear Not To Dump,

We can't tell where the water from a storm drain goes just by looking at it, but it either empties to a nearby waterbody or directly into the ground.

So, there's a good possibility that your neighbor's motor oil could eventually reach the SVRP Aquifer, and contaminate our drinking water source.

Call your local Stormwater Utility hotline to find out where your storm drain empties, or to report any problems with it. And, remember, only rain down the storm drain!

Sincerely,
Storm Drain Dan

Pollution in Stormwater

Water will carry a bit of everything it touches. Stormwater runoff becomes a really big problem for our rivers, lakes, and aquifer when pollutants from our everyday activities like lawn care, car maintenance, and dog walking are left on the ground for stormwater to wash away.

Other things left in the street can clog storm drains and cause the flooding that the storm drain was meant to prevent.