

Our Water Budget

Just like a bank account balance, the relationship between water withdrawals, water discharges, and streamflow can be viewed as a “water budget.”



Water withdrawal permits in Virginia require maintaining “beneficial in stream flow” for fish and other aquatic resources. Photo/RRBC



At Sugar Hollow Reservoir, the Rivanna Water and Sewer Authority (RWSA) releases water back to the Moormans River to match seasonal variations for the benefit of the downstream ecosystem. Photo/TJSWCD.

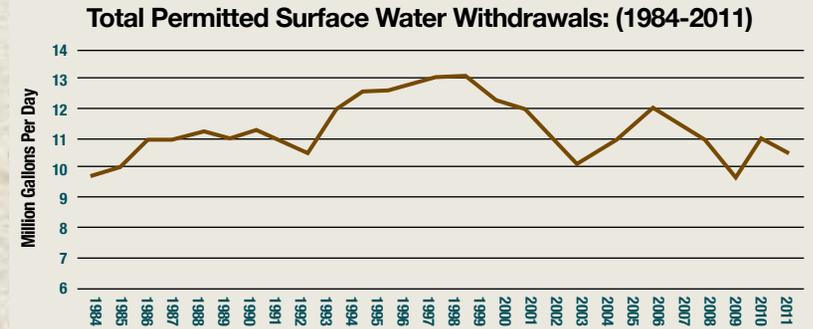
We withdraw water from the Rivanna Watershed for drinking and household needs, commercial and industrial uses, and irrigation for our crops and fields. Of all permitted water withdrawals in the Rivanna Watershed:

- 97% to 99% is for public water supplies.
- 1% to 3% is for agricultural operations and for irrigating golf courses.

We put water back into the Rivanna River primarily through discharges of treated waste from wastewater treatment plants, which are permitted by the Virginia Dept. of Environmental Quality (DEQ) and must meet water quality standards. For those of us with septic systems, our wastewater is treated before the liquid diffuses into surrounding soils. Water enters shallow and deep groundwater reserves, much of it eventually seeping back into streams.

Stormwater runoff from rain and snow also finds its way to streams. Impervious surfaces (our roofs, driveways, sidewalks, parking lots, and roads) prevent the moisture from soaking into the ground and recharging the groundwater system.

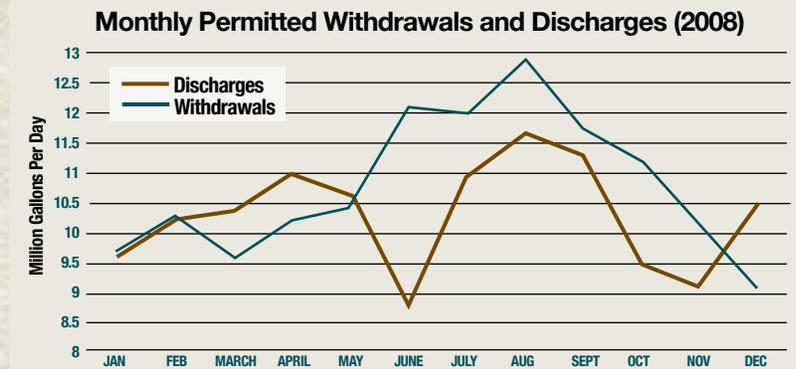
A healthy water budget balances human withdrawals and discharges and maintains streamflow levels needed to sustain aquatic life. Water conservation measures help ensure that there is the right amount of water flowing in area streams at the right time to support biological life and human needs.



Permitted water usage during this period in the Rivanna Watershed has varied from almost 10 MGD to just over 13 MGD. Source/Annual Records (2012) from Virginia DEQ

Healthy Waters, Water Consumption and Water Conservation

The relationship between human water consumption, the level of water in streams, and stream health is affected by many factors, including precipitation patterns, water conservation (especially during dry periods), pumping of groundwater, and the amount of runoff generated by impervious surfaces. Wise use of our available resources can provide for our needs and those of aquatic and terrestrial living organisms.



Monthly surface water permitted withdrawals and discharges are shown for a typical year in the Rivanna Watershed. Note how water withdrawals increase during summer months while at the same time, discharges from treatment plants tend to be less because water used for irrigation increases consumption, but the water is not returned to streams via the treatment plants. Data source: Virginia DEQ.

How Much is a

Million Gallons Per Day?

One million gallons per day (MGD) is the equivalent of using the water from 1 ½ Olympic-size swimming pools per day.