

How to calculate your water rights, and stay within them

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(with help from Farmers Irrigation District and Bryant Pipe & Supply)

In the Hood River valley, by a court ruling made in 1921, each acre of irrigable land (with a water right) is entitled to one-half (1/2) of a miner's inch (1/80th of a cubic foot per second). This is called the "duty of water" and varies from place to place throughout the state.

The court decision in 1921 put two other restrictions on the use of water for irrigation. One is the length of the irrigation season. In Hood River, the maximum time water can be diverted for irrigation is from April 15 to September 30 of each year. This is the length of the irrigation season.

The other restriction is that no more than three acre-feet of water (977,550 gallons) may be applied to each acre for irrigation purposes during the irrigation season. (Note that the amount of water delivered to a landowner is usually less than the amount of the water right. If your water is delivered by an irrigation district, they are allowed to divert 5.6 gallon per minute (gpm) per acre. Water is lost in the conveyance system through evaporation, seepage, etc. and the amount delivered may be closer to 70-80% of the 5.6 gpm/acre).

What this means is that a person irrigating one acre is allotted 5.6 gpm, based on the one-half (1/2) miner's inch ruling. This person may irrigate from April 15 through September 30, or until he/she has reached his/her maximum allotment of three acre-feet (977,550 gallons), whichever comes first. If he watered at the 5.6 gpm rate 24 hours every day, he would reach his allotment in 121 days.

While many large landowners are gauged, many small landowners are not. Conflicts with neighboring landowners are common where a number of small acreage landowners pull from the same irrigation district line. It is important to know how much your water right entitles you to withdraw, so you can supply your irrigation needs without shorting your neighbor.

Ways to Conserve Water

Be Knowledgeable. Each irrigator should know his water allotment. To figure this, multiply your water right acres times 5.6 gpm (e.g. 0.30 acres x 5.6 = 1.68 gpm allotment).

Each irrigator should also know how much water he/she is using. You can measure what your sprinklers are putting out by using a five gallon bucket, holding your sprinkler so that it empties into the bucket, and timing how long it takes to fill the bucket (e.g. two minutes to fill the five gallon bucket means your sprinkler head is putting out 2.5 gpm).

Multiply the gpm value for one sprinkler times the number of sprinklers you are running, and you will know your usage per time period.

Don't Overuse. Using the example listed directly above, the irrigator has 0.30 water right acres. The sprinklers are putting out 2.5 gpm, and let's say the irrigator is running three sprinklers at a time for a total of 7.5 gpm. He is obviously using over the 1.68 gpm allotment. This means that other water users on the same line are not able to receive their allotment of water.

Make sure you stay within your miner's inch allotment. If this is a problem due to small acreage, we suggest that you purchase high-efficiency, low-flow sprinklers called a "micro-sprinklers." Micro-head sprinklers come in a variety of styles and have a range of water outputs. You can find styles that will rotate and others that spray out in a 90 degree or 180 degree pattern. Micro-head sprinklers put out between 9 and 25 gallons per HOUR and generally reach 9 to 12 feet. To figure out the gallon per minute (gpm) rate, divide the output by 60 (e.g. a micro-sprinkler with a 12 gallon per hour output would discharge 0.20 gpm).

Form a cooperative group of neighborhood irrigation users. Some cooperatives share pumping costs, some have put in more efficient lines, and all have worked out watering schedules where they share their total allotment in a controlled and efficient manner. Using our example, the irrigator, if part of a cooperative with water rights to 20 acres and an overall allotment of 112 gpm (20 x 5.6 gpm) could install an in-ground lawn sprinkler system using up to 37 pop-up sprinklers with 3 gpm output each, as long as his usage was coordinated with his neighbors so the group didn't use more than 112 gpm at one time (while 37 of the 3 gpm sprinklers were on, no one else could use the system).

Water conservation is an important strategy to improve water quality in our local waterways. There are important environmental benefits for humans as well as fish and wildlife. But the bottom line is this: know your water rights so you can comply with state law (and be a good neighbor). For guidance on calculating your water rights and water conservation techniques please contact the Hood River Soil & Water Conservation District at 541-386-4588 or hrrswcd@gorge.net.