



# Let the water flow: SPRING DITCH MAINTENANCE

Springtime always brings a flurry of activity. For those who irrigate from ditches or have a ditch running through their property, ditch maintenance should be one of the top priorities on the spring project list.

## **Ditch basics**

Ditches have been used to convey water from a source to end users for thousands of years and remain an effective means of delivering or draining water to specific areas. Compared to other water conveyance structures, such as canals and laterals, ditches fall on the small to moderate scale. They are typically constructed of dirt or dirt lined with concrete.

The first steps in ditch maintenance are understanding and communication. It is important to understand the system that the ditch is connected to (before and after your specific location) and to communicate with neighbors, ditch riders, and irrigation districts. Know your rights and responsibilities to

ensure your actions will not disrupt the flow of water for yourself or others.

If a ditch flows through your property but you do not have water rights to utilize that water, you may not be responsible for maintenance of that ditch, but you cannot damage or obstruct it. In this scenario, the irrigation company or water user has an easement to access the property to perform routine and necessary maintenance. For more information on water rights, visit <https://bit.ly/wy-irrigation>.

The size of the ditch and volume of water it handles dictates the recommended frequency of maintenance. Typically, light maintenance is conducted once a year when the ditch is dry (late fall through spring). Light maintenance involves removing debris and other obstructions to allow proper water flow. Major maintenance, like sediment removal and repair of structures, can be done once a year to every few years,

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depending on how quickly sediment accumulates.

### Debris removal

Debris is any item found in the ditch that does not belong there. The most common types of debris removed from ditches are sediment, garbage, weeds, and other plant material.

**Sediment** is naturally deposited over time and is exacerbated by obstructions that slow the water's flow, allowing the sediment to drop and build up. If that sediment is not removed, it can alter water flow, direction of flow, or both. In shallow ditches, sediment deposits or obstructions can also force water to overtop the ditch, causing damage to property and structures.

Sediment should be removed from the ditch to maintain the original ditch structure and ensure

the ditch is deep enough to handle the volume that is normally distributed in it (Figure 1).

Keep in mind that the goal is to remove excess sediment—don't dig the ditch deeper than it needs to be. In some situations, straightening the water flow can put more velocity and energy on corners or banks further down the ditch, which can cause them to wear faster or overtop.

Always remember that water flows downhill. If sediment removal is not uniform, it can affect volume and flow both upstream and downstream.

The location of the ditch influences what type of debris is deposited. Ditches constructed in natural spaces tend to collect more natural debris, such as sediment and plant material, while ditches located closer to human

development collect both natural and human-created debris, such as garbage.

Like other obstructions, **garbage** slows and diverts the flow of water, allowing sediment to deposit, backing up the water in the ditch, and potentially causing damage to the ditch banks. Keeping our communities and properties clean helps keep garbage from being deposited in ditches. Never dump any garbage, even if it is natural biomass like lawn or yard clippings, in a ditch.

**Weeds** and other plant materials are another common type of debris. The most problematic weeds tend to be tumbleweeds, including kochia, Russian thistle, and tumble mustard, because they naturally break off and move with the wind. Tumbleweeds often



Figure 1. Sediment building up on the right side pushes the water channel to the left side.



Figure 2. Tree branches blocking the ditch, collecting debris and sediment.

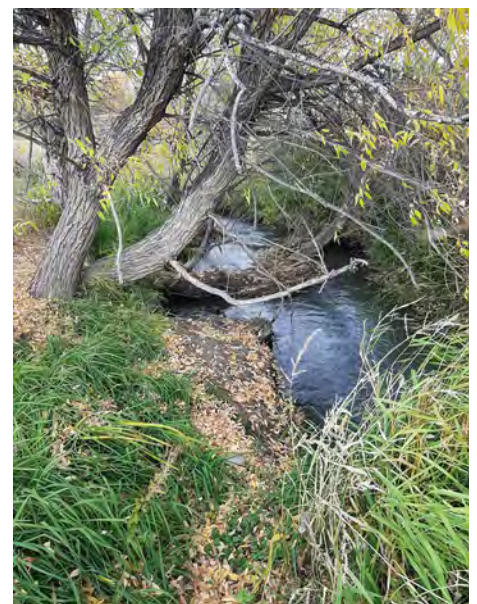


Figure 3. Tree growth impeding the ditch flow.

Photos: Jeremiah Vardiman

accumulate and plug ditches and other irrigation structures.

Tree and shrub **branches** are other common culprits due to their durability, length, and rigidity (Figure 2). To help prevent obstructions, prioritize weed management and removal of woody material adjacent to the ditch when possible.

### Ditch obstructions

**Trees** are a significant problem because their roots, trunks, or branches can grow into the ditch (Figure 3). This obstructs maintenance equipment as well as water flow, especially equipment that is pulled through the ground, like a ditcher. Tree roots can break the implement, or the tree location can impede the equipment from pulling a straight line.

It is recommended to plant trees a minimum of 100 feet away from ditches, especially water-loving trees like cottonwoods and other poplar species.

Keep in mind that even if you do not have access to the water in a ditch flowing through your property, your landscaping choices can directly impact the ditch and ditch users.

The other common outside obstruction is **overgrown vegetation**, such as grass, which can choke the ditch and obstruct flow (Figure 4). Reducing the vegetation growing in and alongside the ditch and removing old biomass from previous years is a key part of annual light maintenance. This is typically accomplished by mowing, grazing, or burning. For more information and considerations on burning

ditches, visit <https://bit.ly/Burning-Irrigation-Ditches>.

Areas prone to obstructions are structures, such as culverts, weirs, drops, and screens, or other restrictive flow points. When there is water in the ditch, these areas need to be checked regularly, if not daily, to mitigate major blockages that could cause issues or damage (Figure 5).

### Final thoughts

Spring is a great time to assess the condition of your ditches and complete necessary maintenance. Make sure to communicate with ditch riders, irrigation districts or associations, and neighbors prior to implementing any major revisions or repairs. Even if you do not have access to the ditch, your management adjacent to the ditch can significantly impact its maintenance and functionality.

Remember, the longer maintenance is delayed, the more time, effort, and money it may take to get the ditch back in shape.

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It's probably safe to assume that ditch maintenance is at the top of **Jeremiah Vardiman's** to-do list this spring. He is a UW Extension educator based in Park County and can be contacted at [jvardima@uwyo.edu](mailto:jvardima@uwyo.edu) or (307) 754-8836.



Photos: Jeremiah Vardiman

Figure 4. Overgrown vegetation on the ditch bank has slowed the water enough for duckweed to start growing.



Figure 5. Boards placed in front of culvert to prevent blockage of the structure.