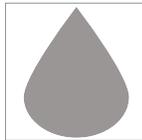


IRRIGATION Assessment

Reference TIPS brochure, pg. 4

Worksheet



The way you water your lawn, gardens, pastures and crops can have a significant impact on the quantity and quality of water in local streams and wells. In addition, excessive irrigation can be needlessly expensive and detrimental to plants. According to the U.S. Geological Survey, irrigation accounts for the largest use of fresh water in the United States, totaling 137 billion gallons of this precious resource used each day. The pumps and sprinklers powering these irrigation systems require fossil fuels and electricity to operate. In addition, when homeowners water their lawns and farmers irrigate their crops and pastures, the water not absorbed by plants eventually runs off into surface waters or seeps into groundwater supplies and can carry with it fertilizers, pesticides and a number of other pollutants. You can save water and help keep your streams and groundwater clean by adjusting the way you irrigate. Irrigation Water Management (IWM) is a term for the irrigation strategies landowners and farmers employ to help them save water, conserve energy and reduce the amount of contaminants entering water supplies. This worksheet will help you determine which irrigation water management strategies could improve conditions on your property.

Instructions: Complete the following worksheet to identify areas where you may be able to improve irrigation effectiveness and efficiency. This information will also be useful if you choose to work with a natural resource professional to develop a detailed irrigation plan.

Site

Date

1. Do you irrigate on a regular schedule or only when your plants need water?

- Only when needed** **On a regular schedule**

↳ Scheduling regular irrigation by the calendar is less effective than watering according to actual plant needs. You can make your irrigation applications more efficient by understanding the relationship between how much irrigation water is applied and how much water is actually beneficial to the plants you are growing. The weather, plant size, plant condition, rooting depth, soil type and soil moisture at a given time all affect how much and how often you need to water. Generally speaking, plants use half as much water in May, June, September and October as they do in July and August.

Over-watering can reduce plant quality by drowning roots, stressing plants, causing root diseases, reducing nutrient uptake, and leaching nutrients and pesticides away from the root zone and into water supplies where they may be harmful. Applying only the amount of water that plants need will produce healthier plants that will be more resistant to disease and pests.

↳ Below are some of the steps you can take to determine when to irrigate. More information on each of these items can be found through the contacts listed at the end of this worksheet.

- Gather information to help you time irrigation applications with:**

- **Weather monitoring equipment**
- **Historical evapotranspiration (ET)**
(the combined rate of water use by plants and evaporation from the soil surface, which can easily be found online)
- **Soil-moisture sensors**
- **Crop observations**
- **Other methods**

- Assess soil moisture by feel or by using field probes or other instruments.**

- Adjust your irrigation schedule according to seasonal changes.**

2. Does your system irrigate in a uniform manner across the entire area needing water so that there are no areas that are too dry or too wet?

No Yes

- ↳ Properly functioning irrigation equipment that applies water in a uniform manner will have a tremendous impact on irrigation efficiency and plant health. When sprinklers and nozzles deliver water to the ground evenly, you can avoid creating areas that become too wet while others remain too dry. However, when equipment delivers water unevenly, it is difficult to determine when and how much to water.
- ↳ If you do not know whether your irrigation system delivers water evenly across the entire area, you can easily conduct an irrigation system field test, as described below:

Irrigation System Field Test

1. To easily assess your irrigation uniformity, place “catch cans” in different spots within the irrigated area. Empty tuna cans or other similar vessels will work well; just be sure that the catch cans you use are all the same size. Also, be sure to conduct the test only when the wind speed is less than 8 mph to ensure accurate results.
2. Place the catch cans evenly across the irrigated area you are evaluating. The number of cans needed will depend on the size of the area you are testing. Generally, you will want to use as many as possible.
3. Run your irrigation system for the usual amount of time. As it runs, note which catch cans are in an area that receives water from more than one sprinkler or nozzle.
4. After irrigating, compare the water level in the different catch cans to identify where adjustments are needed.
5. At this time, you may also want to dig small holes in the ground in different areas to compare soil moisture below the surface. You may notice areas where the soil has absorbed more or less water than other areas. If this is the case, you might decide to adjust your irrigation system to account for the different soils.



3. Do you inspect your irrigation system (sprinklers, nozzles, pumps, hoses, etc.) to ensure it is functioning properly?

No Yes

↳ You may be able to reduce water use, chemical applications, and energy needs simply by keeping your irrigation equipment in good repair.

Some problems to look for include:

- Pressure that is too low or too high
- Nozzles that are mismatched
- Bad, broken or worn sprinkler nozzles
- Nozzles that are not adjusted properly
- Plugged nozzles
- Spray deflection or other obstruction to the flow of water

↳ A useful tool to help you conduct a more thorough evaluation of your irrigation system is the *Irrigation System Walk-through Inspection Analysis*, publication number PNW 293 developed by the Pacific Northwest Extension (Oregon, Idaho and Washington). This can be found online at:

<http://extension.oregonstate.edu/catalog/pdf/pnw/pnw293.pdf>

The Next Steps for Better Irrigation Management:

Review your answers to the questions above and identify where you can make improvements to your irrigation operations. Consider seeking professional assistance to develop a detailed Irrigation Water Management plan. If you would like additional information or assistance, contact one of the entities listed below:

- Natural Resources Conservation Service (NRCS)
- Your local Soil and Water Conservation District (SWCD)
- Oregon State University Extension Service
- Other natural resource professionals
- Irrigation equipment vendors

