



Sustaining Water

WITH YVSC

Principles and Practices Workshop: Conserving Water in Gardens and Landscaping

This workshop will be focused on water conservation practices and techniques for gardens and landscapes. In this workshop, you will learn how to adapt your garden and landscape to align with the Yampa Valley climate and use water efficiently.

Workshop Agenda

5:30 (p.m.) - Welcome and Introduction

Speakers: **JC Norling**, Vice President, and Steamboat Springs Campus Dean, *Colorado Mountain College*

Madison Muxworthy, Soil Moisture Water and Snow Program Manager, *Yampa Valley Sustainability Council*

Location: Allbright Family Auditorium, Colorado Mountain College

5:35 - Irrigation Efficiency Presentation and Q&A

Speaker: **Steve Linnenberger**, Founder, *Western Water Management*

Transition from Allbright Family Auditorium to Bear Park Permaculture Center

6:15 - Panel Discussion and Q&A

Speakers: **Todd Hagenbuch**, Extension Agent and Director, *CSU Extension, Routt County*

Karen Vail, Owner, *Karen's Growing Ideas*

Marco Lam, Farm Manager, *Elkstone Farm*

Kate Brocato, Communications and Programs Manager, *Yampa Valley Sustainability Council & Assistant Site Manager, Bear Park Permaculture Center*

Location: Bear Park Permaculture Center, Colorado Mountain College

7:10 - Wrap Up and Opportunity to Walk Around Bear Park Permaculture Center



Key Points to Remember from our Presenters

Aim for efficiency

- Know your site - Calculate a water budget for the existing landscape so you know how many gallons the existing landscape requires per season.
- Compare historical and current water consumption with the estimated water budget to determine irrigation performance.
- Irrigation audit - Use to identify areas where improvements can be made to create short and long-term water savings.
- Combine the water consumption and irrigation audit data to create a roadmap of actionable steps or system corrections that will achieve the water-use goals. The estimated irrigation improvement costs are typically compared with the projected water savings to give the end-user an idea of the cost vs benefit.

Start with the soil

- Plants thrive in healthy soil. They also tend to be more drought tolerant, pest and disease resistant, and able to withstand more diverse environmental conditions than plants grown in sterile soil. Avoid the following practices:
 - using herbicides and pesticides, salt-based fertilizers, compaction, unnecessary tilling, unnecessary amendments, leaving the soil uncovered
- Healthy soils are packed with micro and macro-organisms that are vital to plant health. Your number one goal is to keep them healthy and happy.

Focus on native plants for most of your plantings

- Natives are adapted to the climate, pests and diseases, soils, etc. of our local areas.
- Pollinators benefit more from natives in a landscape
- Even with natives, make sure you use the right plant in the right place.

A little stress is good

- Researchers found plants grown with a little water stress are more pest and disease resistant, and their tissues stand up better to winds, snow, etc.
- Research has also shown that a little water stress produces more prolific blooms.

Choose plants for drought tolerance

- What a great selection we have in today's landscape trade offering drought-tolerant plants.
- Make sure you are watering them correctly.
 - Most drought-tolerant and native plants do not like water around their crown (the base of the plant). Do not use overhead watering (which is highly inefficient) but install drip lines. Water the soil, not the plant. Water longer and infrequently to get the water deep in the soil to promote deeper root growth and more drought-tolerant plants. So instead of every day for 10 minutes, water once or twice a week for 30 to 40 minutes (using drip).

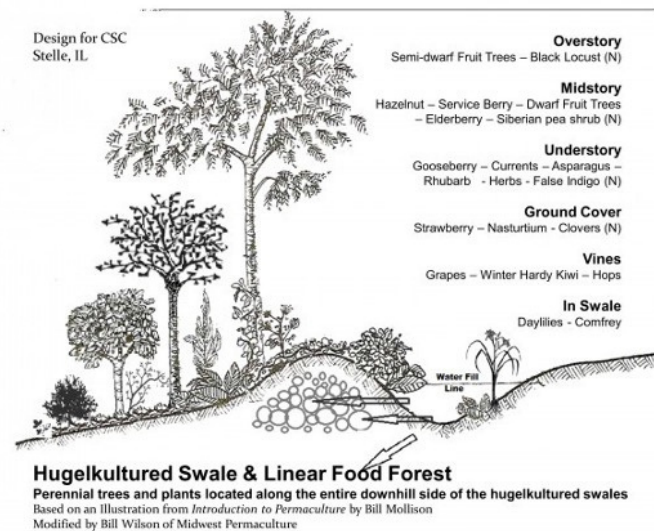
Take some tips from nature

- Design your gardens with layers. Ground covers to shade the soil, medium height for food and shelter and tall trees as higher habitat and shade.
- Plant dense. You can pack the plants in there with our dry climate and not worry about the diseases from more humid climates.
- Plant in species-rich clumps for maximum pollinator habitat.

Key Points to Remember from our Presenters

Observe

- In permaculture, we want to use the resources that our yard, garden, or property provides to their fullest potential before we bring in outside resources to accomplish something. This critical anticipatory step can help us determine which water flows through our site and how to maximize water conservation and reduce unintended consequences. Consider the following questions and observations before beginning anything:
- Where does water come from on your site? Does it drain off your roof when it rains, flow down a hill, or run down your driveway? Is this water being lost or used?
- Track how water flows through your site. What direction does it move? Where is it the wettest or dry? Consider drawing this visually if it is helpful.
- Take note of any places on your site where water activity is most obvious. These might be gutters, downspouts, areas of erosion, etc.



Slow it, spread it, sink it

- In permaculture, we use a number of different techniques to slow the flow of water through our sites. Doing so allows us to spread this water across a larger area and sink it deeper into the ground, thus reducing the amount of water that we need to use to irrigate. Some of those techniques are listed below. Following your observation period, choose the one that best suits your needs and is most accessible to you.
- Mulching – Covering bare ground is critical to reducing erosion and evaporation, while also adding to the organic matter of your soil and preventing weeds. Most people are familiar with the use of wood chips as mulch, but straw, leaves, and grass clippings can all also be used as mulch.
- Swales – Swales are best described as a system of ditches that follow the contours of your property. Although the concept sounds a bit odd, in practice they can look quite beautiful. Swales are intended to catch and trap water intentionally rather than letting it flow through your property at its own will, allowing water to be absorbed more evenly.
- Hugelkulture/berms – Hugelkulture, meaning hill culture or hill mound, is a system of mounding branches, logs, twigs, leaves, straw, cardboard, etc. to create a mound that is then covered with topsoil and plants. Over time, the contents can become a valuable source of nutrients for plants growing on the mounds. When used on downward slopes, hugel beds can be used to catch water. The materials inside act as a sponge to observe water as it flows down a slope.