



The flyer features the Lincoln County Master Gardener Association logo on the top left, the Oregon State University Extension Service Master Gardener logo on the top right, and a photograph of rain falling on a roof. The central text reads "Rainwater Harvesting for Landscape Use". Below this, there is a QR code and the website "orcoastmga.org/forhandouts".

Master Gardener™

- Volunteers who are trained in science-based, sustainable gardening practices.
- We are connected to Oregon State University and use both science and local knowledge to inform our educational outreach.
- We strive to make the resources of Oregon State University accessible to all members of our community.
- These resources include horticultural research findings, and publications.

What are we talking about?

- Rainwater harvesting — the collection and storage of rain to use as a primary water supply — it is one of the simplest and oldest methods of managing water supply
- We will also discuss some methods for distributing the water to garden locations
- For landscaping purposes

Our starting point

- Roof
- Gutter
- Downspout
- Water distribution



Add water storage

- Roof
- Gutter
- Downspout
- Water distribution

Rain barrel or tank →



Let's talk tanks

- Classic rain barrel from city water depts
- 50-55 gallons
- May come with fittings
- Can find used barrels on Craigslist
- Good size for a typical city lot or starter experience



Typical installation

- One barrel



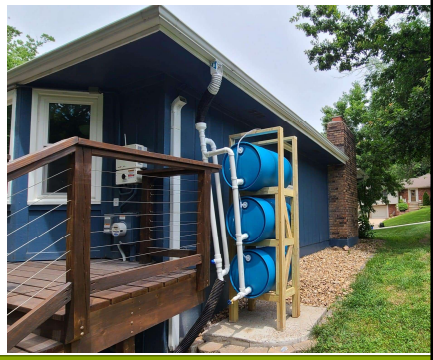
Blue rain barrel

- Horizontal grouping



Blue rain barrel

- Vertical grouping



Painted



Culturally appropriate





50 to 50,000 gallon tanks

Even go modern



What makes a good rain barrel?

- Food grade plastic
- Only ever used for liquid food—syrups, sugar solutions
- Never cooking oils or petroleum products, insecticides or pesticides
- Clean thoroughly
- Flat bottom for proper installation
- Larger rather than smaller
- DIY or Kits
- Enclosed top or screens
- Overflow fitting
- Outflow fitting—garden hose or other piping



\$5-\$30



\$50-\$100

Main Components

- Downspout diversion
- Inflow
- Overflow
- Outflow



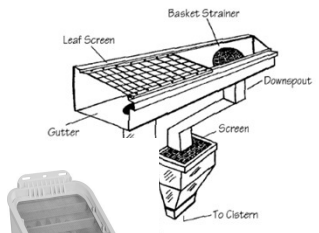
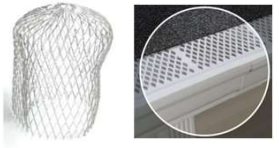
Roof Materials

- Good Materials
 - Standing seam metal
 - Corrugated metal
- Workable, but less efficient
 - Asphalt/composition shingles
 - Concrete tile or clay tile
 - Solar panels
- Bottom line: most materials will work but avoid the ones listed on the right



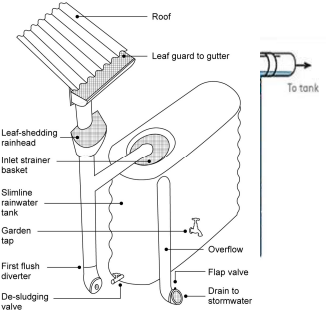
Keeping debris out

- Clean roof
- Basket strainers
- Gutter guards
- Leaf collectors



First Flush

- Diverts the first gush of water in each rainfall
 - Keeps the sediment, leaves, pollen, washed from the roof out of the tank
- Some controversy about their use
 - Sizing issues
 - Requires significant maintenance
 - Proper screening works as well
 - Plants like the organic matter that is diverted
- Often only the first seasonal rain is dirty enough to warrant diversion



Distributing the stored water

- Gravity
- Pump

Drip irrigation

- Doesn't require any pressure
 - Gravity does the work
 - As long as the drip line stays below the water level in your rain barrel
 - And there is enough water
- Slope and distance matter
 - 1/2" main line is best-won't restrict the flow; 3/4" may work but for shorter distances
- Pressure
 - Most irrigation systems work on 12-20 psi
 - Gravity is about 0-2 psi for flat terrain
 - Can elevate barrel to get more psi
 - 1ft of elevation gives .4 psi
 - Soaker hoses have least psi reqmts



Gravity Assist

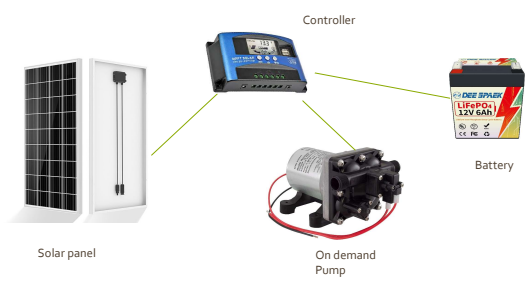


Tank pump

- A rainwater tank pump is typically positioned at ground level, next to the tank.
- The water exits the tank from the bottom of the tank and flows straight into the pump
- Install close to tank
- Prime the pump with water, plug the pump into the power and switch it on
- Enclose for protection
- Requires electricity
- Some solar models



Solar components



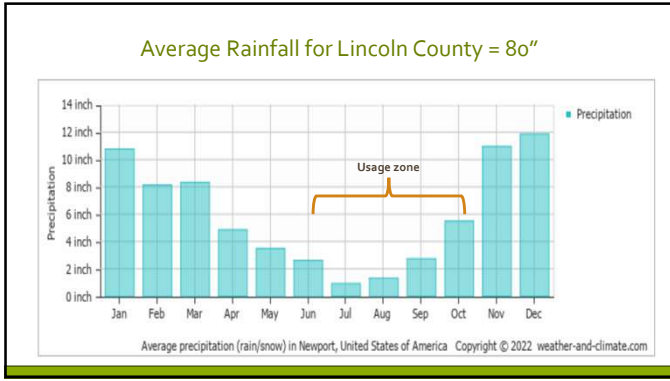
Available rainfall -- or how much water could I capture?

- Basic formula

$$\text{Size of roof (sq ft)} \times \text{Est annual rainfall (in)} \times .62 \times (75\text{-}90\%)$$
- My House

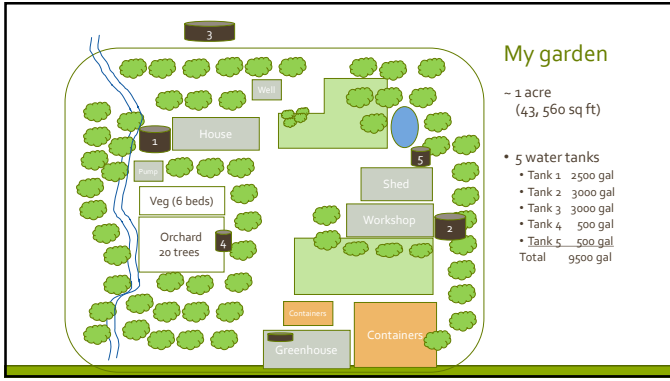
Tank 1 (2500)	500 sq ft x 80" x .62 x 80% = 20,000 gal
Tank 2 (3000)	1000 sq ft x 80" x .62 x 80% = 40,000 gal

- ❖ 80" is the estimated annual rainfall for Lincoln County
- ❖ .62 is the amount of water captured in 1" of rain per 1 sq ft
- ❖ 75-90% is the roof collection factor



How much water do I need?

- In general
 - 1"/week over your entire growing surface for the summer (3-5mth)
 - 4' x 8' bed requires 20 gallons/week x 16 weeks = 320 gallons
 - 5 beds = 1600 gallons
 - or 32 blue barrels





Thank you

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