

Project Specifications

The bioswales at the Learning Garden were designed, dug and planted in fall 2006. They are designed to collect storm water runoff from the roof of the OSU Extension office building and allow it to percolate into the ground slowly, rather than flow over the surface of the ground, where it could pick up sediment and other contaminants.

The bioswales were designed to handle a peak rainfall event of 1 inch an hour for four hours and collect rain falling on a roof size of 1,300 square feet.



Acknowledgements

The bioswales built by the Central Gorge Master Gardener Association at the Learning Garden were made possible by a grant from the Oregon Watershed Enhancement Board (OWEB).

Funding for these grants is made available through OWEB thanks to Ballot Measure 66, approved by voters in 1998. Measure 66 specified that 15 percent of lottery proceeds be used for watershed enhancement and maintenance of state parks. OWEB uses this funding to support voluntary efforts to improve water quality, water quantity and the recovery of listed fish species. For more information on OWEB or any of its programs, visit www.oweb.state.or.us.

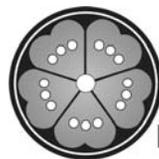
Technical assistance for bioswale design was provided by the Hood River Soil & Water Conservation District.

The Learning Garden is being developed and maintained by the Oregon State University Extension Service Master Gardener™ Program—Central Gorge Chapter. The garden features several demonstration areas that are used to teach gardening techniques to members of the public.

Many local businesses and individuals have contributed to the success of this project, providing cash, materials and in-kind services.

If you or your business would like to partner with CGMGA with maintenance of the Learning Garden, please contact Project Leaders Mary Parrott at 541 352-7418 or Nancy Slagle at 541 352-4156 or email to njslugle@gmail.com.

Take a self guided tour of the Learning Garden at the OSU Extension Office at 2990 Experiment Station Dr. in Hood River. The garden is open during daylight hours.



Oregon State University Extension Service
Master Gardener™ Program

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Bioswales



Bioswales & Rain Gardens

Making runoff a resource!

Building a Bioswale or Rain Garden



How do I build one?

1. **Choose a location.** Your bioswale or rain garden should be located at least 10 feet from the house. A natural site is a low spot in your yard that often collects water after a heavy rain. There should be a natural slope (at least 1% grade) leading from the water collection area (your roof or driveway) down to the rain garden or bioswale.
2. **Calculate capacity.** A typical residential rain garden is 100 to 300 square feet and the average bioswale is 40-60 cubic feet, but any size is fine. Most people just size the swale to suit their available space. You can calculate the ideal size based on the surface area of your roof, soil type and the garden or swale's distance from your house (see <http://clean-water.uwex.edu/pubs/pdf/home.rgmanual.pdf>).
3. **Design your layout.** Use a rope or string to delineate the boundary of your future bioswale or rain garden based on the calculations you made in step 2.
4. **Remove the sod & dig.** Remove the sod and dig a depression. A typical rain garden is 4 to 8 inches deep while a typical bioswale is 6 to 12 inches deep. Slope the sides gradually from the outside edge to the deepest area. Use the soil that you remove to build up a slightly raised area on the lowest side of the garden. This berm will help contain the stormwater and allow it to percolate slowly. Regardless of depth, keep the garden level to allow for maximum infiltration of water.
5. **Connect your drainage area.** Your downspout should be directed toward your swale. This can be accomplished by a natural slope, by digging a shallow ditch, or by piping the runoff directly to the garden through a buried plastic drain tile.
6. **Time to plant!** Native plants are the best choice for bioswales and rain gardens. They withstand difficult growing conditions and require little care. Be sure to mix native grasses and sedges in to ensure the garden has a strong root mass that will resist erosion and inhibit weed growth. Once they are well established, your garden should thrive without additional watering.

What are bioswales and rain gardens?

Bioswales and rain gardens are landscaping features designed to collect stormwater runoff from a roof, driveway or other impervious surfaces. Rather than rushing off into a storm sewer or a local waterway, the rainwater collects in a swale or garden where it is naturally filtered by plants and soil. Bioswales are not vegetated on the bottom and tend to be deeper basins where soil and rock filter the water, while rain gardens tend to be shallow and completely vegetated.

Why build one?

Bioswales and rain gardens can have a significant impact on the water quality in our communities. Studies have shown that as much as 70% of the pollution in streams, rivers and lakes has been carried there by stormwater.

By taking responsibility for the rainwater that falls on your own roof and driveway, you'll be helping to protect our rivers, streams and lakes from stormwater pollution.

Adding a bioswale or rain garden to your yard will also provide food and shelter for wildlife, and give you a whole new garden that's hardy, low maintenance and naturally beautiful!

Bioswale

Project Leaders

Jordan Kim
Scott Fitch



Calculations

The size of the bioswale or rain garden will depend on:

- average rainfall (35 inches a year in the Hood River area)
- soil type (infiltration rate)
- area of roof and/or lawn draining to the swale.

Resources

OSU Extension Office, OSU Master Gardener™ Program—Central Gorge Chapter: 541-386-3343

Hood River Soil & Water
Conservation District: 541-386-4588

Websites

<http://clean-water.uwex.edu> ~ Publications

www.cleanwatercampaign.com

www.raingardennetwork.com

www.raingardens.org