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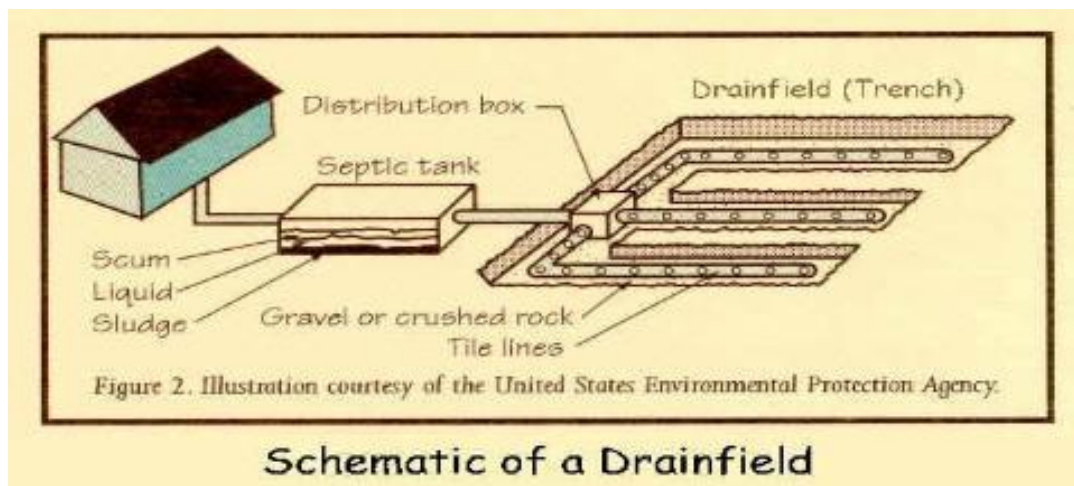
SPOTLIGHT ON... PLANTING OVER DRAINFIELDS

Landscaping Septic System Drainfields and Mounds

If your home uses a septic system to treat your on-site sewage, maintaining your system and drainfield will save you a lot of money over the years. Most septic system owners know that there is a tank where the solids are separated and stored before the liquid is released into the drainfield, but an understanding of how the drainfield functions is an important part of long-term maintenance. The septic tank, which is typically located within 10 feet of your house, discharges the liquid wastewater, or effluent, into a network of perforated pipes, which are typically laid in gravel-filled beds or trenches. The liquid is discharged from the septic tank or a distribution box, either by gravity or pressure from a pump, into the drainfield, sometimes known as a leach field. This is where the final treatment takes place.

The wastewater trickles out of the holes in the pipes, draining through the gravel layer into the soil below, where final treatment takes place. The soil acts as a filter as the liquid flows through the pore spaces in the soil. Microbes in the soil then treat the wastewater as it passes through, purifying the water before it enters the ground water. Permeable soil with a good supply of oxygen for several feet beneath the drainfield works best.

If your system was installed after 1983, your septic system must also have a designated replacement or reserve area. This is an area that can accommodate a new drainfield should you ever need one, and should be treated the same way as your current drainfield.



One of the first steps in planning your landscaping is to know where your drainfield and reserve field are located, which involves getting a copy of the as-built for your property. This is a drawing of your septic system in relation to your property and house, and was completed by your septic system designer or installer after the system was installed. Your county or city's Public Health department keeps these drawings on file, and you can request a copy from them. Older systems may not have an as-built, or may have a drawing that is not as complete or detailed as more recent as-builts. If you were present when you last had your septic tank inspected or pumped, or you have inspection risers on top of the septic tank, you should know the location of the tank. If you do not have risers, you might consider having them installed, as this will make it easier to inspect and pump your tank in the future. Using the information that is available to you, you can hopefully determine where your septic tank, drainfield, and reserve area are located, and use this in planning your landscaping.

Things to Consider Before Planning Your Landscaping

It is important to recognize that the soil in these areas should not be compacted, as this could decrease the amount of bacteria in the soil, and lessen the ability of the water to percolate through the soil. Also, the components in your system may be within 6" – 12" of the surface, so care should be taken to avoid crushing or damaging these components. You should not build a structure on top of these areas, including tool or garden sheds, decks, sport courts, patios, swing sets, sand boxes, or compost bins. The area should be clear of paved or dirt driveways, as well as parked vehicles. When having construction done on your property, make sure the contractors keep their machinery and vehicles off of these areas. Over time, livestock can compact the soil and cause damage to the system, so you should keep off of these areas.

Other considerations when planning your system's landscaping include avoiding the use of a rototiller, which could damage the system parts that are close to the surface. Do not install underground sprinkler lines within 10 feet of the system, or have ongoing watering during the dry months, as this could saturate the soil and decrease the ability of the system to function properly. You should also avoid directing water from your downspouts and surface water runoff onto your drainfield. Also avoid burning piles of leaves or branches over these areas, as the heat could damage the plastic pipes below. You do not want to use landscaping fabric, bark, or plastic sheeting over these areas in an attempt to block weed growth, and you should limit addition of topsoil or compost to no more than one to two inches.

How to landscape a drain field and around mounds is a question often asked by septic system owners. The drainfield size and shape varies based on the type of system you have. Regardless of the type, a good rule of thumb for landscaping over drain fields is to use shallow rooted, drought tolerant plants with non-dense roots. Examples of which plants work best will be given later. Here are some other recommendations to consider.

Vegetables: One of the most common questions about landscaping drainfields is "Can I plant a vegetable garden over the drainfield?" The answer is, "It is not recommended." Vegetables often need daily watering and excess water in the soil reduces the drainfield's ability to filter and treat wastewater. Roots of some vegetables may grow deep enough to damage or clog drain pipes. And if the tank is not functioning properly, the effluent in the drain field could contaminate the vegetables and make them unsafe to eat.



Conventional / Gravity Fed System Drainfield

Tree and shrub set backs: Large trees and shrubs should be avoided over the entire area and setbacks for these larger plants should be followed. Trees and large shrubs should be at least 30 feet away from the drainfield. One reason is to prevent tree roots from getting into and breaking the pipes in the drainfield, or even getting into the septic tank.

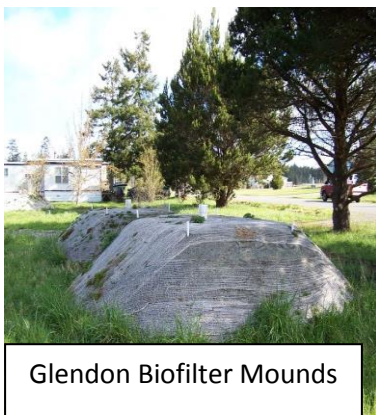
Lawns: Grasses with their shallow root systems are the simplest and most frequently recommended plantings over the drainfield. Choose a traditional lawn (remember to fertilize only in the spring and fall, if at all), or choose an un-mowed meadow. You may include permeable pathways, garden ornaments, bird baths, sundials, tables and benches. If a mowed lawn is your priority, use grass seed mixes suitable for our Northwest climate, and mixed specifically for sun or shade depending on the site of the drainfield.

Meadows: Wildflower meadows are frequently suggested for drainfields, but in reality they are difficult to maintain. Perennial seeds in the meadow mixes, such as lupines, tend to take over and the annual seeds included in with the mixes do not always sustain themselves for more than a year. If you wish to try a wildflower meadow mix make sure the plants are selected for the Northwest and that the mix does not contain seeds or plants on the Washington State Noxious Weed list. The use of small bulbs with the wildflowers, such as small daffodil and crocus bulbs, are easy to naturalize and will return year after year. You may also want to try one of the various "eco" lawn mixes available through Northwest nurseries and catalogs. These typically are a blend of grasses and wildflowers that require a minimum of water, fertilizer and mowing.

Perennial Gardens: In sunnier locations, perennial gardens can be created with mixes of ornamental grasses of different heights and can be inter-planted with ground covers, small bulbs, and sun loving perennials as well as smaller, shallow rooted shrubs. .

Ornamental Grasses: The larger grasses are known to harm septic fields. Avoid Miscanthus, Pampas grass and any Bamboo. Make your selections from the many smaller varieties, evergreen or deciduous.

Glendon Biofilter Mound Systems



Glendon Biofilter Mounds

Glendon Biofilter septic systems consist of a septic tank, pump tank and above ground mounds over the basins used to filter the effluent from the tanks. These mounds could be called "conspicuous" and perhaps "challenging" to landscape.

Many homeowners block off the view of the mound area with hedge plantings or decorative fencing. Care should be taken that the plants chosen for a hedge should be kept about 4 feet away from the mounds to allow for maintenance of both the mounds and the hedge. The plants chosen should not have aggressive runners or roots. Avoid hedges of any of the native evergreen trees such as Western Red Cedar and Hemlock. Laurels should also be avoided. Use more "friendly" plants such as California Wax myrtle (*Myrica californica*) or smaller, slower growing boxwoods. The wax myrtle will grow tall and may need to be pruned.

It is desirable to plant the mounds with a ground cover type of plant to prevent erosion of the sand and to help them blend into the landscaping. There are many ground cover plants available in the nurseries and their tags

will tell which are suitable for sun or shade. Examples of suitable plants for ground cover on the mounds are Coastal strawberry (*Fragaria chiloensis*); Kinnikinnick (*Arctostaphylos uva-ursi*); Wintergreen (*Gaultheria procumbens*); Creeping rubus (*Rubus pentalobus*); Sweet Woodruff (*Galium odoratum*) and Dwarf periwinkle (*Vinca minor*).

WSU Master Gardeners Test Drainfields

WSU Master Gardeners in Island County have engaged in a plan to study and identify which plants are appropriate for planting on drainfields. According to their website, “Over a three year period, various plants suitable to the Whidbey Island climate, soil, and moisture conditions will be tested on mock drainfields that represent the most common types used on the island. At the end of the test period, the plants will be partially dug out in order to measure the depth of the roots. This will determine which plants have infiltrated the distribution system and should not be used, and which ones are suitable for planting on a drainfield. Plants to be tested will be selected by Master Gardeners with the advice of Dr. Carol Miles, WSU Northwest Washington Research and Extension Center (NWREC), from a list of plants already being used by Island County Master Gardeners on their drain fields.” For information on the drainfield test, and about Greenbank Farm where it is located, see: <http://greenbankfarm.biz/drain-field-garden/>



Photos of WSU Master Gardeners Mock Test Drainfields at Greenbank Farm, April 2014, by Scott Chase

Plants to Consider When Landscaping Your Drainfield

The best plants to choose for planting over your drainfield are low maintenance, shallow rooted, and require little irrigation. Herbaceous vegetation and grass that can be disturbed is preferred, so you don't need to be concerned about damaging the plants when walking over the drainfield. Avoid plants that need to be divided on a frequent basis, as digging the plants can possibly damage the drainfield. The plants described below are often suggested for planting over drainfields in our area, and are listed according to amount of sun received during the day.

Deep Shade Plants (no direct sun)

- Japanese Spurge (*Pachysandra terminalis*) is an aggressive evergreen groundcover, which forms a thick cover that minimizes weeds.
- Carpet Bugle (*Ajuga reptans*) is an aggressive groundcover that produces blue flowers in spring.
- Irish Moss (*Sagina*) is not a true moss, but a look-alike that is much easier to grow. This does best when mixed with ferns and other plants.
- Periwinkle (*Vinca minor*) is an evergreen groundcover that has periwinkle blue flowers in the spring. In shady areas, it is moderately drought tolerant.
- Wintergreen (*Gaultheria procumbens*) is an evergreen groundcover that grows ankle high, with spicy scarlet berries all winter long, and pinkish white flowers in summer

NOTE: You should not mix Japanese spurge, carpet bugle, and periwinkle. Select just one.



Left: Periwinkle

Right: Japanese spurge

Photos courtesy Oregon State University



Partial Sun and Shade Plants (receiving about 4 hours of sun)

- Carpet Bugle (*Ajuga reptans*) is an aggressive groundcover that produces blue flowers in spring.
- Blue Star Creeper (*Pratia pedunculata*) is an attractive, fast-growing evergreen groundcover with a flat carpet of tiny green leaves, smothered with starry bright blue flowers all summer long.
- Creeping Rubus (*Rubus pentalobus*) is a species of ornamental bramble, but its small flowers and leaves are much more decorative than its thorny cousins. The rooting carpet of stems can easily grow up to four feet in a year.
- Vaccinium "Well's Delight" (*Vaccinium crassifolium*) has shiny, dark evergreen leaves with dainty pinkish flowers. A good, three inch tall groundcover for partial sun.



Left: Vaccinium "Well's Delight"

Right: Carpet Bugle

Photos courtesy WSU Clark County Extension



Full Sun Plants (receiving about 8 hours of sun or more)

- Kinnikinnick (*Arctostaphylos uvaursi*) is a native evergreen groundcover known for its drought tolerance once it is established. Needs a well-drained soil, and is not tolerant of wet areas.
- Blue-Silver Fescue (*Festuca cinerea*) is an ornamental grass with blue-silver blades. This short, clumping grass requires well drained soil, and is not drought tolerant.
- Blue Oat Grass (*Helictotrichon sempervirens*) is an ornamental grass with stiff evergreen blue blades. Requires well-drained soil.
- Fountain Grass (*Pennisetum alopecuroides*) is an attractive fountain grass with arching stems bearing soft, bottlebrush clusters of fuzzy flowers. This grass grows to about 1 ½ to 2 feet, and is tolerant of moist soils, unlike some other ornamental grasses.
- Vaccinium “Well’s Delight” and Creeping Rubus, as described above, are also suitable.



Left: Kinnikinnick

Right: Fountain Grass

*Photos courtesy WSU
Clark County Extension*



Sun/Partial Sun Near Drainfield (Not Over Drainfield)

- Sword Fern (*Polystichum munitum*) is a native evergreen that is easy to grow, and is very tolerant of our dry summer months in a full or partly shady location.
- Deer Fern (*Blechnum spicant*) is a native evergreen forest fern that grows to a height of 8” – 20” with a width of 24”. Lance shaped fronds that resemble small ladders. Does best in partial to deep shade, and is considered drought tolerant once established.
- Various dwarf rhododendrons and azaleas.



Left: Deer Fern

Right: Sword Fern

*Photos courtesy
WSU Clark County
Extension*



Resources

For more information on Septic Systems visit these websites:

1. Landscaping Your Drainfield, Island County Government (brochure):
http://www.islandcounty.net/planning/Landscapingyourdrainfield_000.pdf.pdf
2. Properly Landscape Your Septic System, Clark County Government:
<http://clark.wsu.edu/horticulture/smallAcreageProgram/landscaping-septic.pdf>
3. Landscaping Your Septic System. Washington Sea Grant Program. King, T and J. Holdcroft. 2001
<http://wsg.washington.edu/mas/pdfs/landscapesepitic.pdf>
4. Landscaping Your Drainfield, Thurston County Public Health & Social Services Department. n.d
<http://www.co.thurston.wa.us/health/ehoss/landscp.html>
5. Landscaping Your Drainfield. WSU Mason County Extension. Simmons, B. 2006.
http://www.co.mason.wa.us/oakland_bay/pdfs/landscaping_drainfield.pdf
6. Planting Over a Septic Drain Field, WSU King County Extension, Anderson, E. 2010.
<http://ext100.wsu.edu/king/wp-content/uploads/sites/17/2014/02/Planting-Over-a-Septic-Drain-Field1.pdf>
7. Drainfield Landscaping and Planting, WSU Kitsap County Extension, Linger, F. <http://ext100.wsu.edu/king/wp-content/uploads/sites/17/2014/02/Planting-Over-a-Septic-Drain-Field1.pdf>
8. Glendon BioFilter Landscaping and Plantings, WSU Kitsap County Extension, Linger, F. & Tillery, P., 2011 <http://www.glendon.com/docs/Landscape/GBT%20%20Landscape%20-%20WSU%20Compendium.pdf>

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