North and South Rivers Watershed Association
What is a watershed?
73,000 acres, 114 square miles
Founded 1970
Non-profit
50 years of protecting our waters for now and the future

Watershed plus program area
Top Three Issues

- Dams that prevent fish passage
- Water withdrawals drying up streams
- Stormwater pollution
Climate Change Paradox

Floods

Housatonic River

Droughts

Westfield River
Problem: Water withdrawals impact streamflows

Scituate Reservoir on the First Herring Brook

Third Herring Brook
Summer Withdrawals Almost Double

<table>
<thead>
<tr>
<th>Town</th>
<th>Winter mgd</th>
<th>Summer mgd</th>
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</thead>
<tbody>
<tr>
<td>Hanover</td>
<td>1.3</td>
<td>2.2</td>
</tr>
<tr>
<td>Norwell</td>
<td>1.0</td>
<td>2.0</td>
</tr>
<tr>
<td>Marshfield</td>
<td>2.3</td>
<td>5.0</td>
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<tr>
<td>Pembroke</td>
<td>1.1</td>
<td>2.1</td>
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<tr>
<td>Scituate</td>
<td>1.8</td>
<td>2.7</td>
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Stormwater Runoff
Rain or snow, not absorbed by plants and soil that travels across land to the nearest waterbody.
- Once only 10%, now 60-90%

- Stormwater runoff is a major concern in our watershed
- Runoff from residential areas often contains excess fertilizers, pesticides, trash, oil, animal and yard waste
- Flows across impervious surfaces
- Lawns can generate up to 90% as much runoff as pavement.
- Where does this runoff go?
Healthy surface waters = healthy water supply
Building a rain garden can help with these issues.
Why Rain Gardens?

- Help prevent polluted stormwater from entering our waterways.
- Help replenish our aquifers
- Easy and inexpensive to install and maintain
- Help control flooding
- Wildlife habitat
- Improve water quality
- Customizable and beautiful
- Fun outdoor family project!
Rain Gardens Reduce *RUNOFF* and *RECHARGES* groundwater

- Layer of mulch
- 2 parts sand, 1 part topsoil, 1 part compost
- Optional gravel layer
  - Graded gravel and coarse sand
  - ~2 ft.
  - ~6 in.
How to build a Rain Garden!

• Pick a location. At least 10ft away from building foundations, underground utilities, and septic system drainfields. Or an area were water pools during storms, but not a wetland!

• Calculate drainage area and divide by the depth of the garden. Many variables – guidelines not rules!

Example: For Roof that is 20 ft x 20 ft / 10” depth of garden = 40 sq ft

Or use this handy calculator
http://raingardenalliance.org/right/calculator
• Call Dig Safe at 811 or (888) 344-7233 72 Hrs before digging if using an excavator.

• Any shape you want, about 6 inches lower in center than edges. Avoid damaging tree roots.

• Check drainage. Dig a 6 in hole, fill with water, if there’s still water after 24hrs choose new location. It is important that it drains. Add gravel to bottom if needed.

• Ideal soil mixture: 2 parts sand, 1 part topsoil, 1 part compost. 2ft depth but can vary.

• Plants: Choose native plants that can tolerate wet and dry roots and are adapted to the conditions you are putting them. More on this from Wild Ones!

• Add 2-3 inch layer of mulch to help retain moisture and prevent weeds.
Rain Garden Care
Water......Weed......Mulch

- Water every other day for first 2-3 weeks until growing well.

- The first year or two may need additional water if seasonally dry.

- Well established roots will no longer need additional watering.

- Maintain a 2-3 inch layer of mulch. (1 cubic yard of mulch will cover 100 sq ft with 2-3 inch layer).

- Water should drain and not pool for more than 24 hours.
Creating a Hydrologically Functional Lot

- Conservation
- Reduced Imperviousness
- Porous Pavement
- Open Drainage
- Amended Soils
- Rain Gardens
- Rain Barrel
- Rain Barrel
Additional “Green” Gardening Tips

- Water only at dawn
- Water only when lawn is thirsty – Water to a depth 6”/once per week.
- Mow with a sharp blade
- Leave grass clippings on the lawn
- Keep your grass at least 3 inches tall (credit card). Tall grass shade weeds. Less mowing = Less weeding = Less Work
- Use permeable pavers and porous asphalt
- Rake up a brush pile and leave it for winter
- Create a mini-meadow, let grass grow tall for winter
- Native trees and shrubs
- Don’t deadhead or cut everything down at the end of the season
- Compost, create your own soil

watersmartsouthshore.org
Clean and plentiful water is just too important to pollute and waste!
Additional resources can be found at
WaterSmartSouthShore.org
Download our Greenscapes Guidebook