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water shed (n): 1. the area draining into a particular body of water

Neponset River Watershed Association
NerRWA is a nonprofit conservation group founded in 1987 to protect and restore the Neponset River, its tributaries and their watershed lands. News from the Neponset is published six times a year. Printing by Blue Hill Press, Canton.

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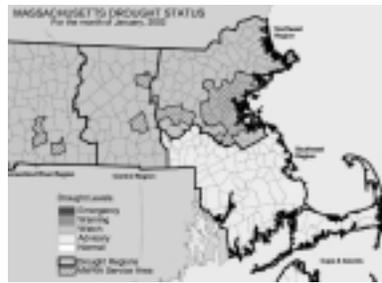
- Follow Up**
We need folks to help with the August, October, & December sampling event. 6 AM - 8 AM April, June.
- Samplers**
Help out with tasks before and after sampling events. Tasks include bottle labeling, equipment/supply prep. inventory, supplies, data entry & analysis. Would like someone available consistently once or twice/month.
- Sampling Prep Crew**
Must be a trained sampling volunteer. Milton on 3/27, Christopher Rd in for Liberty Brook
- Sampling Subs**
Must be a trained sampling volunteer. 9/25, 11/20. We need someone to cover for sites that are forgotten and help out with miscellaneous tasks that morning.
- Emergency Sampler**
6 AM - 8 AM on sampling days (3/27, 5/22, 7/24, 9/25, 11/20). We need someone to cover for sites that are forgotten and help out with miscellaneous tasks that morning.

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Address Correction Requested

News From the Neponset

A Publication of the Neponset River Watershed Association

March - April 2002



Graph courtesy of DEM Rainfall Program

Drought in February?
It has been an unusual winter to say the least. Severe lack of snowfall coupled with above normal temperatures and far below normal rainfall this past fall have brought the state to near drought conditions. The Neponset River Basin is among the most severely affected areas of the state.

In February, the Massachusetts Drought Management Task Force bumped the Neponset River Watershed up to a "drought watch" from the drought advisory warning it was given in December. The drought advisory indicates a level of dry conditions across the state that warrant closer tracking by state, federal and local agencies. The watch level indicates a more imminent threat of drought conditions, which can impact water availability for the summer months. The state's rainfall has declined steadily since the middle of August 2001, with cumulative precipitation only 65% of normal for the last six months. Streamflow and ground water levels are below normal throughout the watershed.

Though fall and winter months are not peak water use periods, they are a critical time for recharging reservoirs and groundwater. With only 4 weeks remaining in this recharge period, more serious problems could quickly develop when water use increases with the arrival of Spring. The National Weather Service has stated that there are no signs that the current weather pattern is going to change for the remainder of the winter.

The Quabbin Reservoir, which is operated by the Massachusetts Water Resources Authority and supplies drinking water to both Boston and Quincy, has dipped slightly into the below normal system status. However, due to its large storage capacity, the system can withstand extended dry periods without impacting its ability to supply water.

"Drought" continued inside

Massachusetts' Environment Needs Your Support!

What is it about Massachusetts that makes us all feel lucky to call this place home? For many of us it is the natural environment that surrounds. Therefore, we are hopeful that we can count on you to urge our state government to continue the great strides that have been made to protect your local environment for generations to come.

Legislation is now working its way through the House of Representatives that, if passed, will ensure future funding to preserve and protect Massachusetts' environment, public health, and safety. House Bill 4909, known as the Environmental Bond, is legislation that aims to set aside \$750 million in bonding authority for state environmental programs. This money is separate from the state's operating budget which has been hit hard by short term economic woes, and is essential to keep many programs managed by the state's environmental departments funded for the next several years. Without the passage of the Environmental Bond, Massachusetts will be at risk of losing many of the important initiatives designed to protect and preserve our natural environment.

Many of the programs at risk greatly benefit the Neponset River Watershed. For example, water quality testing, wetland restoration, and the protection of drinking water supplies under the Watershed Initiative, which is funded by the Environmental Bond. Other initiatives include: State forests and parks land acquisition and improvements; habitat restoration and management for the preservation of biodiversity; Metropolitan District Commission (MDC) land acquisition; community preservation; pollution prevention; and coastal area preservation.

It is critically important that this legislation pass soon so that vital environmental programs are not compromised by a lack of funding. NerRWA is encouraging you to contact your state legislators to encourage their support of House Bill 4909, the Environmental Bond.

Don't delay make a quick call today! To find phone numbers or mailing addresses for your local state rep and senator go to: www.state.ma.us/legis/citytown.htm.

Tips For a Beautiful Lawn and a Healthy River During a Drought

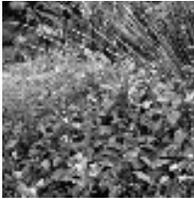
This bizarre winter and fall have left the region anticipating a major drought this summer. Water suppliers are contemplating water bans early in the spring, while homeowners question how they will maintain their outdoor landscaping. Fortunately, with planning it is possible to have a healthy lawn and colorful garden during low rainfall periods. A new movement is developing amongst professional landscapers, homeowners, on the internet, and throughout our communities around ecological and low water landscaping. We encourage everyone to jump on this bandwagon to a beautiful yard and a healthy river! For more landscaping tips and resources visit www.neponset.org.

Ecological Landscaping Tips

- Prioritize your lawn! Only irrigate the turf in high impact, visible areas, if at all. To know if your lawn needs watering, simply walk across it and if you leave footprints then it's time to water.
- Water in the early morning hours, from 4 am to 8 am, or overnight to loss from evaporation loss.
- Water slowly and deeply to a depth of 1" and only once or twice per week. To measure how long it takes your sprinkler system to deliver one inch of water to your lawn, mark several cups one inch from the bottom. Set out the cups around your lawn and time how long your sprinklers take to deliver one inch of water to the cups.
- Always turn off your irrigation system if significant rainfall has occurred.
- Use more efficient irrigation systems such as a soaker hose, or drip irrigation.
- Raise the mower blade. Cutting the grass higher encourages deep rooting, increases turf survival during drought, and reduces water demand.
- Always keep the mower blade sharp – dull blades shred leaf tips, causing the turf to use more water.
- Fertilize less and use slow-release fertilizers.
- Leave grass clippings on the turf and/or add organic material or compost to the soil to help supply recycled nutrients and reduce the need for additional fertilizer.
- Aerate regularly to relieve soil compaction and increase air and water movement into the soil – especially on slopes. This can be done using a power aerator or a garden fork for small lawns.
- Use native, drought resistant grass species and plants. They're better for wildlife too!
- Landscape designs in shady areas need less water, therefore, plant shade trees and carefully maintain those already in the yard.
- When designing your landscape plan, include alternatives to grass such as ground covers, wood chips, stones or natural features.
- Get a soil test to determine the needs of your lawn.
- The key word is LESS, less fertilizer, less water, less lawn, less work, and best of all, less waste!

Plants To Use in a Drought

Generally, plants with long roots and small flowers are more drought resistant. Once established, the following plants do well with low water amounts:



Salvias are not only indispensable landscape plants, but many are relatively drought tolerant.

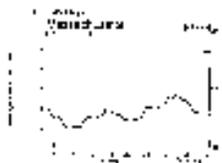
Flowers
 Clematis
 Coreopsis
 Cosmos
 Daylily
 Dianthus
 Morning glory
 Phlox
 Salvia
 Sedum
 Yarrow

Trees and Shrubs
 Blue Ring Juniper
 Bradford pear
 Crabapple
 Hawthorn
 Linden
 Maple
 Mock Orange
 Redbud
 Scotch broom
 Yew

What Grasses Should I plant?

Half of the water we consume is applied to the landscape. A significant part of this water is intended for our lawns. Consequently, the success of your conservation plan will depend on the characteristics of the grasses in your lawn and the efficiency of your irrigation. Below are some guidelines for choosing the appropriate grasses.

- Minimize the use of Kentucky bluegrass; it is shallow rooted and requires a lot of water to remain green. Use it only for areas planned to be especially beautiful or for high use areas that require this species recuperative ability. To conserve water rather than frequently watering Kentucky Bluegrass during hot, dry weather let it go brown and dormant. In this case, its water needs are comparable to those of tall fescue.
- Tall fescue is easier to keep green because it has a deep root system and will extract more water from a given site than Kentucky bluegrass. With the water it takes to keep Kentucky bluegrass brown but alive, you can keep Tall fescue green all summer!
- Buffalograss requires little additional water, resists drought, tolerates temperature extremes, and requires little mowing or fertilizing. Like all plants, however, it has limitations. For example, it greens-up late in spring, turns brown in early fall, and is relatively intolerant of shade and traffic.
- Many ornamental grasses can be incorporated into a water conserving landscape. Low growing forms such as sideolats grama, blue grama, and little bluestem provide excellent groundcover. Taller grasses such as big bluestem, Indian grass, and zebra grass can be used in border or massed plantings.
- If your lawn can handle it, allow mother nature to do her work and let your lawn go dormant. Don't worry, it will green up again in the fall.



Graph courtesy of DEM Rainfall Program

"Drought" continued from front

It is the smaller surface water systems and ground water supply systems that are most threatened by the current dry conditions. Generally, within the

Neponset watershed, drinking water is supplied in part or in whole from local groundwater wells operated by municipalities or public water companies. Sharon, Walpole, Foxborough, Stoughton, Medfield, Dover, Dedham and Westwood supply all their own water from local aquifers. Canton supplies about half its own water. Milton, Norwood, Boston and Quincy get all their water from the Quabbin Reservoir. There are no surface water withdrawals for public water supply in the Neponset watershed.

This summer's predicted drought will put even more pressure onto the Neponset Watershed, which is already a stressed system. For years, many communities in the Neponset Watershed have drawn their water from local aquifers but disposed of "used drinking water", or waste water, via the centralized MWRA sewer system to Deer Island and ultimately Massachusetts Bay – bypassing the natural system of recycling water back into the river. Substantial amounts of water, which might otherwise have recharged streams, are transferred out of the basin.

Lawn watering is another major stress on the Neponset Watershed. When water is withdrawn in order to water a lawn, the water is used locally but either evaporates or is taken up by the grass, either way it's not available to augment the river. Further stress is added when open land is developed into houses, roads, and other impervious surfaces. Rainwater, which used to soak into the ground, now must run off. This results in higher streamflows during floods, but reduces the amount of groundwater available to naturally recharge streamflow and drinking water supplies during dry periods. The result is higher flood flows, but lower drought flows.

NepRWA has been working to study these problems, and develop recommended trigger levels for streamflow that would signal problems for fish. We also hope to work with municipalities to develop measures that will help protect aquatic life not only during dry summers but during normal summers as well.

The bottom line for this year, is to expect outdoor water bans to take effect earlier and more strictly than usual, especially in the towns that supply their own water, but potentially in the Quabbin towns as well. Water conservation efforts should be made over the winter months to guard against potential water shortages in the spring and to reduce the drought's impact on aquatic ecosystems. Homeowners may also want to plan their gardening activities around the likelihood of drought, potentially postponing any major landscaping plans that will need to be watered through the summer.

Tributary of the Month: Pine Tree Brook

Town: Milton
 Location: Outlet of Hillside Pond to the Neponset River.
 Important Attributes: cold water fishery
 Lakes/Ponds: Turner's Pond, Pope's Pond, and Hillside Pond
 Drainage area: 6.79 square miles
 Stream length: 4.54 mi.
 Land-use: Forest (47%), Residential (14%), Open Land (8%)
 CWMN Sites: Blue Hills Pkwy, Brook Rd, & Central Ave.
 Dams: Pine Tree Brook Reservoir Dam, Pine Tree Brook Dam, & Harland Street Detention.
 Problems: high nutrient concentrations, low dissolved oxygen, high fecal coliform levels, & sedimentation from Quarry Hills.
 Designated Uses Status: Non-support for both primary & secondary contact due to pathogens.



The Pine Tree Brook subwatershed begins at the outlet of Hillside Pond, gathering runoff from the protected Blue Hills.

Water quality is good here in the upper reaches and trout can be found. Moving downstream beyond the Harland Street Flood Control Project, and beyond the Max Ulin skating rink, the land surrounding the brook becomes more residential and water quality begins to deteriorate. Beginning at Blue Hill Parkway and running almost all the way to the confluence with the Neponset, Pine Tree Brook has been almost entirely channeled for flood control or to accommodate development over the years. From here down, development becomes more and more dense, and predictably water quality declines significantly with sewer problems and stormwater runoff contributing sediment, nutrients and bacteria to the Brook. With its floodplain squeezed the Brook tends to flood through these stretches.

Despite its problems, Pine Tree Brook has long stretches of vegetated buffer zone along its shores which are accessible to the public and which help enhance habitat and keep the brook cool. In fact, the lower sections of the Brook remain quite cool most of the year, and have good quality cobble-gravel fish habitats along their bottom – promising the potential for trout restoration along its entire length. The cool temperatures are likely the result of good shading and relatively few large artificial ponds in comparison to other tributaries of the Neponset. One important challenge in managing the Brook is preserving the shade, while preventing vegetation from "clogging" the Brook's artificially confined channel which might aggravate flooding.

Another issue of great concern for both fish and flooding along Pine Tree Brook is sedimentation. Sedimentation is bad for fish because sand and silt can bury those nice "gravelly" spawning habitats. It's also bad for flooding because it can clog underpasses and culverts causing flood levels to rise. NepRWA will continue to work with the Town of Milton on this and other issues facing Pine Tree Brook.