

FOREST SOILS—THE FOUNDATION OF THE FOREST

Your woodlot is home to dozens of bird, mammal, reptile, amphibian and insect species. It is part of a large natural system that purifies waters, lowers local temperature during extreme temperatures and provides us with the brilliant foliage we enjoy every autumn. The foundation of your forestland and everything your land provides is soil. Soils affect which trees and plants grow and how fast they grow.

Not all soils are created equally. Soil is influenced by levels of mineral nutrients made available from weathering and breakdown of rocks and bedrock. The composition of the rocks and bedrock directly impacts the soil's fertility. Soil originating from granite-based rock tends to be more acidic while limestone-based soils tend to be less acidic and have a higher pH. Higher pH soils have the ability to have more nutrients available for plants and tend to be more fertile than lower pH soils.

The soil's ability to hold both air and water also contributes to productivity. Roots need air and water to function. When a soil's ability to hold either water or air is reduced, so is the productivity of the soil.

Because it is difficult to improve soil pH and productivity, it is important not to degrade existing productivity, lower soil pH or lose existing soil nutrients.

Soil productivity can be lost a number of ways.

- Nutrients can leach out of the soil.
- Acid deposition can reduce soil nutrients like calcium.
- Heavy equipment or heavy traffic can compact soil.
- Soil erosion can physically carry soil off-site.

Since recovering lost soil productivity is difficult, prevent or reduce soil erosion and compaction using recommended practices.

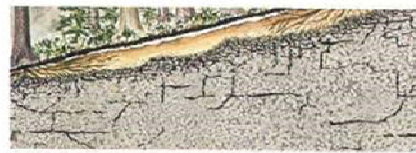
Recommended Practices

- Contact the Natural Resources Conservation Service (NRCS) for soil maps and advice on which soils may be low fertility or susceptible to erosion or compaction.
- Use <http://websoilsurvey.nrcs.usda.gov/app/> for soils mapping, interpretations, and descriptions.
- Incorporate soils information into forest management plans and activities.
- Lay out trails and roads to avoid sensitive sites and soils.
- Harvest during dry, snow-covered, or frozen ground to reduce the chances of soil compaction and alteration of terrain that may impact how water flows through the soil profile.
- Use equipment suited to the site and properly sized for the project.
- Apply best management practices (BMPs) according to guidelines in *Best Management Practices for Erosion Control on Timber Harvesting Operations in New*





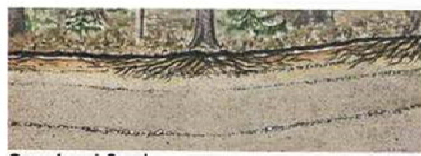
Dry



Rock or Rocks



Moist



Gravel and Sand



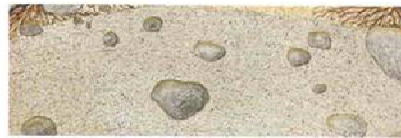
Wet



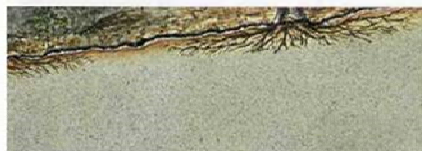
Silt and Clay



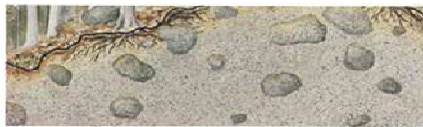
Enriched



Compacted



Nonenriched



Noncompacted

Where can I learn more?

- Bennett, Karen P. editor. 2010. *Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire* (second edition). University of New Hampshire Cooperative Extension, Durham, N.H.
www.goodforestry.org
- N.H. Dept. of Resources and Economic Development, Division of Forests and Lands. 2004. *Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire*. N.H. Dept. of Resources and Economic Development, Division of Forests and Lands.

For a woodlot visit to discuss any of the topics included in this fact sheet, contact your local UNH Cooperative Extension office:

- Steve Roberge, Cheshire County Extension Forester, (603) 352-4550
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- Jon Nute, Hillsborough County Extension Forester, (603) 641-6060
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Or your local Natural Resources Conservation Service (NRCS) office:

- Hillsborough County, (603) 673-2409
- Cheshire/Sullivan County, (603) 756-2988

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