



2019 NH Envirothon Theme

Technology to Support New Hampshire Agricultural Communities

Aquatics Team Information to Review

How to Use Topographic Maps to Delineate Watersheds

- 💧 Topographic Map and Watershed Delineation presentation: <http://nhenvirothon.org/wp-content/uploads/2018/12/Topographic-Map-and-Watershed-Delineation.pdf>
- 💧 Envirothon training day topo activity questions: <http://nhenvirothon.org/wp-content/uploads/2018/12/Envirothon-Training-Day-topo-activity-questions.pdf>
- 💧 Envirothon Training Day topo map: <http://nhenvirothon.org/wp-content/uploads/2018/12/Envirothon-Training-Day-topo.pdf>
- 💧 USGS “Topographic Map Symbols”:
<http://pubs.usgs.gov/gip/TopographicMapSymbols/topomapsymbols.pdf>
- 💧 NRCS “How to Read a Topographic Map and Delineate a Watershed”
https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_014819.pdf

Dam Safety and Dam Removal

- 💧 Envirothon Dam presentation: <http://nhenvirothon.org/wp-content/uploads/2018/12/20181130-Dam-enviro.pdf>
- 💧 NH Selective Dam Removal fact sheet:
<http://des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-18.pdf>
- 💧 “Best Management Practices for the Maintenance and Operation of Dams”:
<http://des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-13.pdf>
- 💧 “The Souhegan River Flood Control Sites of New Ipswich, NH”:
<http://des.nh.gov/organization/commissioner/pip/factsheets/db/documents/db-17.pdf>
- 💧 “Dams – the Advantages and Disadvantages”:
<http://www.ehso.com/ehshome/energydams.htm>

Macroinvertebrates

- 💧 “Freshwater Macroinvertebrates of NY” pictorial guide, NY Department of Conservation: www.dec.ny.gov/animals/35772.html
 - Students should understand the difference between the major Orders of insects. Do not be concerned about knowing the different Families within each order, but at least understand that similar insects within an order can have a variety of characteristics.
- 💧 “An Image-Based Key To Stream Insects”, University of New Hampshire Center for Freshwater Biology”: <http://cfb.unh.edu/StreamKey/html/index.html>
 - A secondary image based key that provides additional images that may help you differentiate macroinvertebrate types.
- 💧 “BioSITE” curriculum, Children’s Discovery Museum of San Jose: <http://www.cdm.org/biosite/curriculum.html>
 - **Unit 8, Macroinvertebrates**, see the **Introduction to Macroinvertebrates** activity which includes brief intros to pollution tolerance, types of macros, adaptations and metamorphosis.

Storm Water Solutions:

- 💧 The NH Department of Environmental Services New Hampshire Homeowner’s Guide to Stormwater Management: Do-It-Yourself Stormwater Solutions for Your Home: <https://www.des.nh.gov/organization/divisions/water/stormwater/manual.htm>
 - An infiltration trench and/or dry well collect and infiltrate stormwater runoff – see pages 17, 19, 21.
 - Infiltration steps, vegetative swales and water bars slow down, and infiltrate or redirect runoff to help reduce erosion – see pages 25, 47, 50.
 - Appendix B of this guide explains how to Create a Project Plan.
- 💧 “Interpreting VRAP Water Quality Parameters”, from the NHDES Volunteer River Assessment Program (VRAP) describes basic water quality parameters: www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/vrap_parameters.pdf
- 💧 “Best Management Practices to Control Non-point Source Pollution: A Guide for Citizens and Town Officials (NHDES)”. Guide to BMPs and Non-Point Source pollution. Read Section 3— **Best Management Practices By Land Use/Activity**: www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-03-42.pdf

Riparian Buffer Benefits and Management:

- 💧 “Riverbank Management and Riparian Buffers” fact sheets of the Connecticut River Joint Commissions: <http://www.crjc.org/pubs/riparian-buffers/>
 - **Number I. Introduction to Riparian Buffers**
 - **Number V. Buffers for Agricultural Land**