

Sustainable Agriculture/Aquatics Resources

Blue Ribbon Commission on Land Conservation (2010 Report to the Governors)
http://efc.muskie.usm.maine.edu/docs/2010_clc_report.pdf – *Read pages 16 to 22.*

Grow Biointensive (one example of sustainable farming practices)
http://www.growbiointensive.org/grow_main.html.

Connecticut River Joint Commissions “Buffers for Agriculture”
<http://crjc.org/buffers/Buffers%20for%20Agriculture.pdf>

General Aquatics Information Websites

Surface Water and Groundwater

Water on the Web “Understanding Lake Ecology” <http://waterontheweb.org/under/lakeecology/index.html> - Basics of lake ecology. *Review the following pages:*

- Watersheds
- General Lake Chemistry
- Dissolved Oxygen
- Nutrients
- Chlorophyll

The Groundwater Foundation <http://www.groundwater.org/gi/docs/GWBASICS2.pdf> - Basics of groundwater.

EPA New England “World in Our Backyard” www.epa.gov/region01/students/teacher/world.html - Wetland science and function. *Read Chapters 1 through 4.*

Water Quality and Pollution Prevention

NHDES Volunteer River Assessment Program “Interpreting VRAP Water Quality Parameters”
www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/vrap_parameters.pdf - Basic water quality parameter descriptions.

NHDES “Best Management Practices to Control Non-point Source Pollution: A Guide for Citizens and Town Officials” www.des.nh.gov/organization/commissioner/pip/publications/wd/documents/wd-03-42.pdf - *Read Section 3—“Best Management Practices By Land Use/Activity.”*

Connecticut River Joint Commissions “Introduction to Riparian Buffers” www.crjc.org/buffers/Introduction.pdf.

Plants and Animals

NY Department of Conservation “Freshwater Macroinvertebrates of NY” www.dec.ny.gov/animals/35772.html - Pictorial guide to macroinvertebrates. 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.

Things to think about as you read through the aquatics materials

1. **Water quality parameters** – What do they measure? What do they indicate?
 - Focus on nitrogen enrichment, dissolved oxygen, chlorophyll *a*, phosphorus, temperature, chloride, conductivity, turbidity, and macroinvertebrate pollution tolerance, salinity, brackish water, etc.
2. **Hydrologic cycle components** – connections between groundwater, rivers, estuaries, lakes, wetlands, etc.
3. **Watershed changes** – How does water quality change from upstream of an urbanized area to downstream? How will the aquatic organisms be impacted by changes? Which types of organisms prefer brackish water? Economic impacts from coastal pollution (i.e., vertebrate and invertebrate larvae species nurseries, etc.)
4. **Best management practices** – How can pollutants from non-point source pollution be kept from entering water bodies in urban or rural settings?
5. **Non-native, invasive species** – How do they impact a water body? How can they be reduced, controlled or eliminated?
6. **Topographic maps** – How are watershed boundaries found by looking at a topographic map? Which way does the water flow on the map?
7. **Shoreline buffers** – How can plants prevent pollutants from entering a water body? What barriers to pollution exist along the shorelines of estuaries?
8. **Wetlands** – What are the characteristics of a wetland? What are the characteristics of a vernal pool? A saltmarsh? A marine beach? What are the functions and values of wetlands?
9. **Groundwater** – What is an aquifer? How does groundwater “recharge”? What is saltwater intrusion?

The Aquatics Committee

Should you have any questions, please feel free to contact one of us. We will respond to you as soon as we can.

| Name and Agency | Phone # (603) | E-mail Address |
|---|---------------|--|
| Alicia Carlson NH Dept. of Env. Services | 271-4071 | alicia.carlson@des.nh.gov |
| Bob Craycraft UNH Cooperative Ext. | 862-3696 | bob.craycraft@unh.edu |
| Tim Drew NH Dept. of Env. Services | 271-3306 | timothy.drew@des.nh.gov |
| Nancy McGrath NH Dept. of Env. Services | 271-3971 | nancy.mcgrath@des.nh.gov |
| Judy Tumosa NH Fish and Game Department | 271-0456 | judy.l.tumosa@wildlife.nh.gov |