Wetlands

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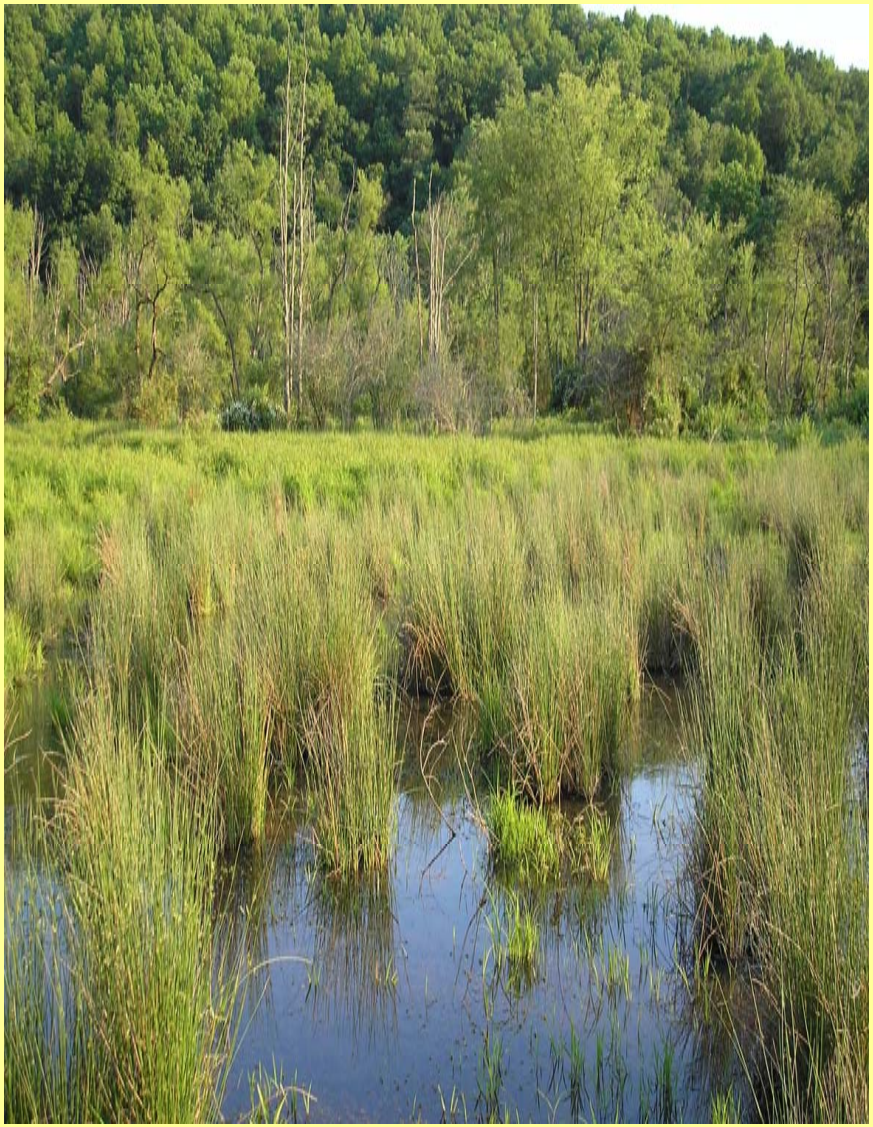
West Virginia Save Our Streams Program

Most of the photos within this slide show were taken by Michelle and Tim Craddock; others were provided by NRCS and WVDNR. This slide show has Internet hyper-links throughout, which may cause some difficulty navigating from the slide show to Internet and back again. I recommend that you copy and paste the link into your browser.

What are Wetlands?



Wetlands are transitional ecosystems between terrestrial and aquatic habitats where the water table is usually at or near the surface or the land is covered by shallow water.

For purposes of classification, wetlands must have the following attributes

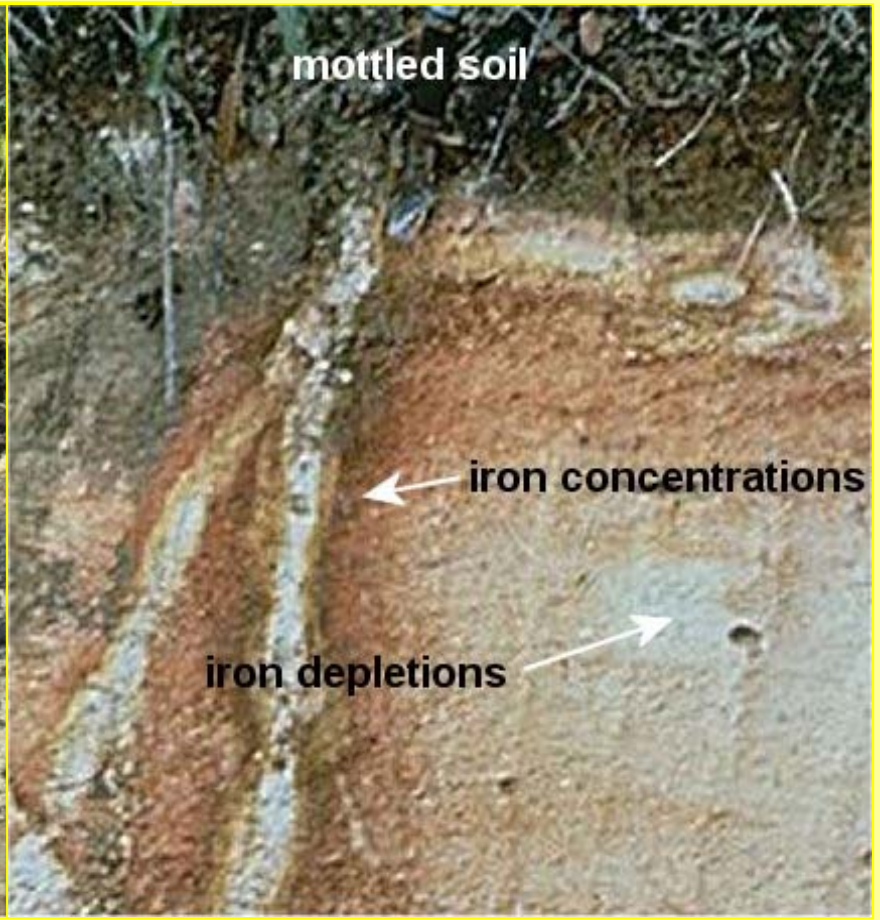
At least periodically, the land supports predominantly hydrophytes;

The substrate is mostly un-drained hydric soil; and

The substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year.

Wetland Soils

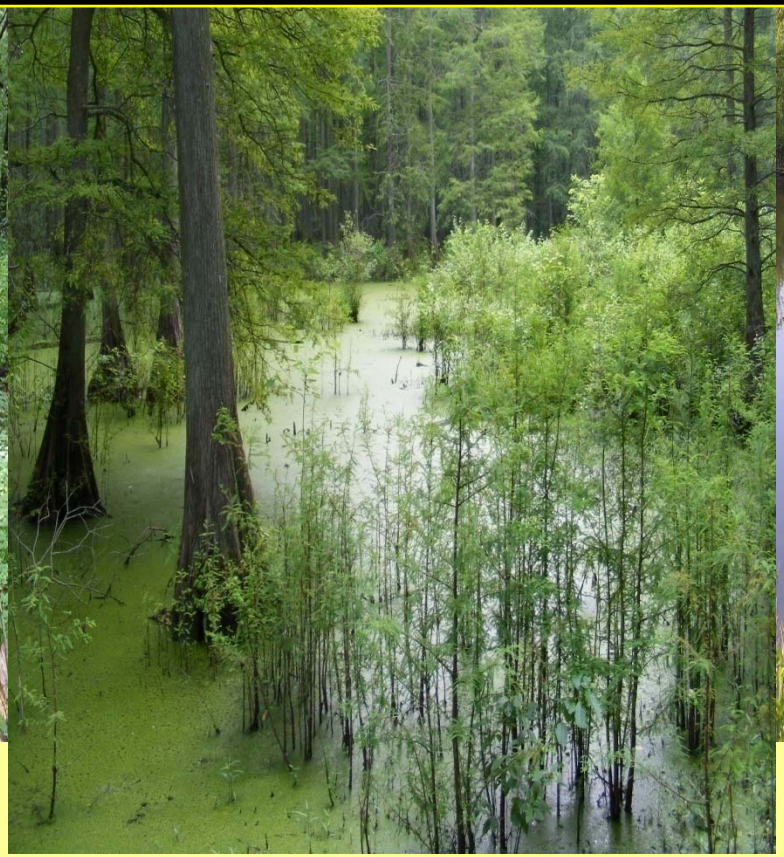
Most wetland soils have reduced oxygen levels, which give the soils particular characteristics.



http://www.dnr.wa.gov/htdocs/lm/field_guides/recognizing/soils.html

Wetland Hydrology

The water must be at or near the surface at least two weeks during the growing season.



http://www.dnr.wa.gov/htdocs/lm/field_guides/recognizing/hydrology.html

Wetland Vegetation

Plants that occur in wetland environments are known as hydrophytes. These plants are classified according to their probability of occurrence. Several of these classification terms are described below.

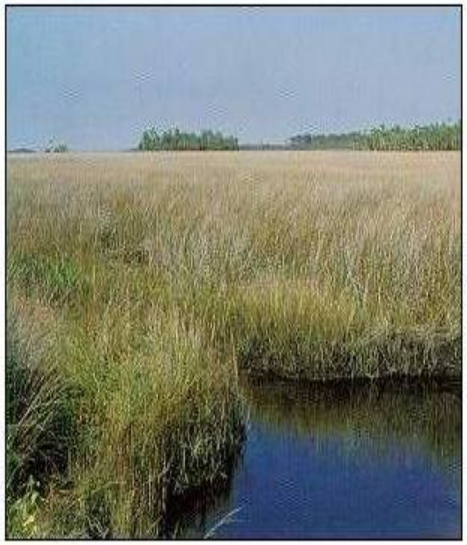
Obligate Wetland Plants (OBL): Plants with a high probability (> 99%) of occurring in wetlands under natural conditions.

Facultative Wetland Plants (FACW): Plants that usually occur (67-99%) in wetlands under natural conditions.

Facultative Plants (FAC): Plants that sometimes occur (33-67%) in wetland environments under natural conditions.

For additional codes and definitions visit the Natural Resource Conservation Service's Plant Database: http://plants.usda.gov/wetinfo.html

Classification of Wetlands and Deepwater Habitats of the United States



By

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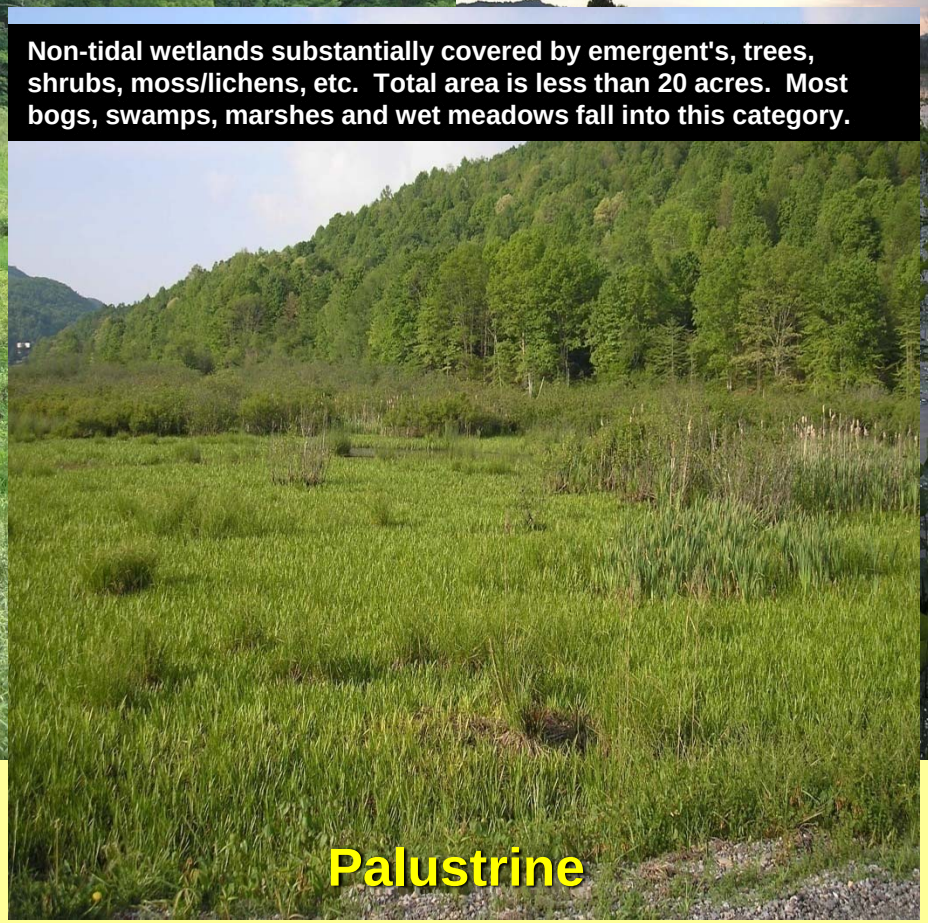
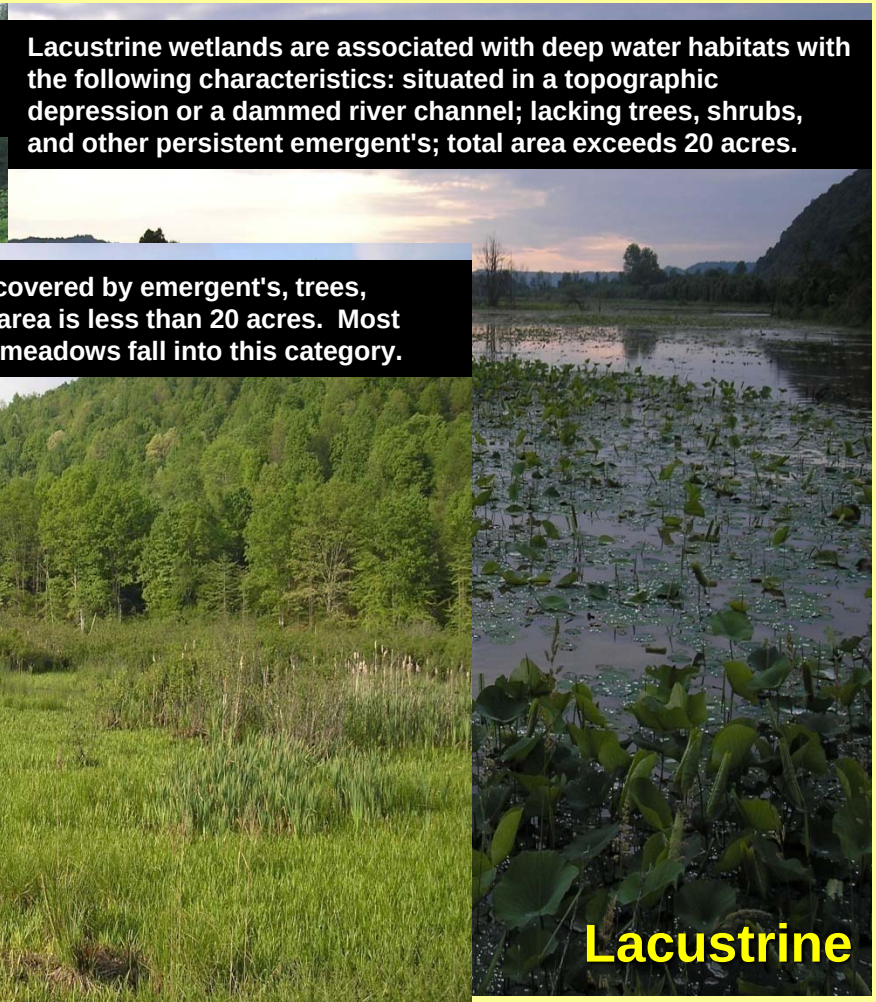
http://www.npwrc.usgs.gov/resource/wetlands/classwet/index.htm

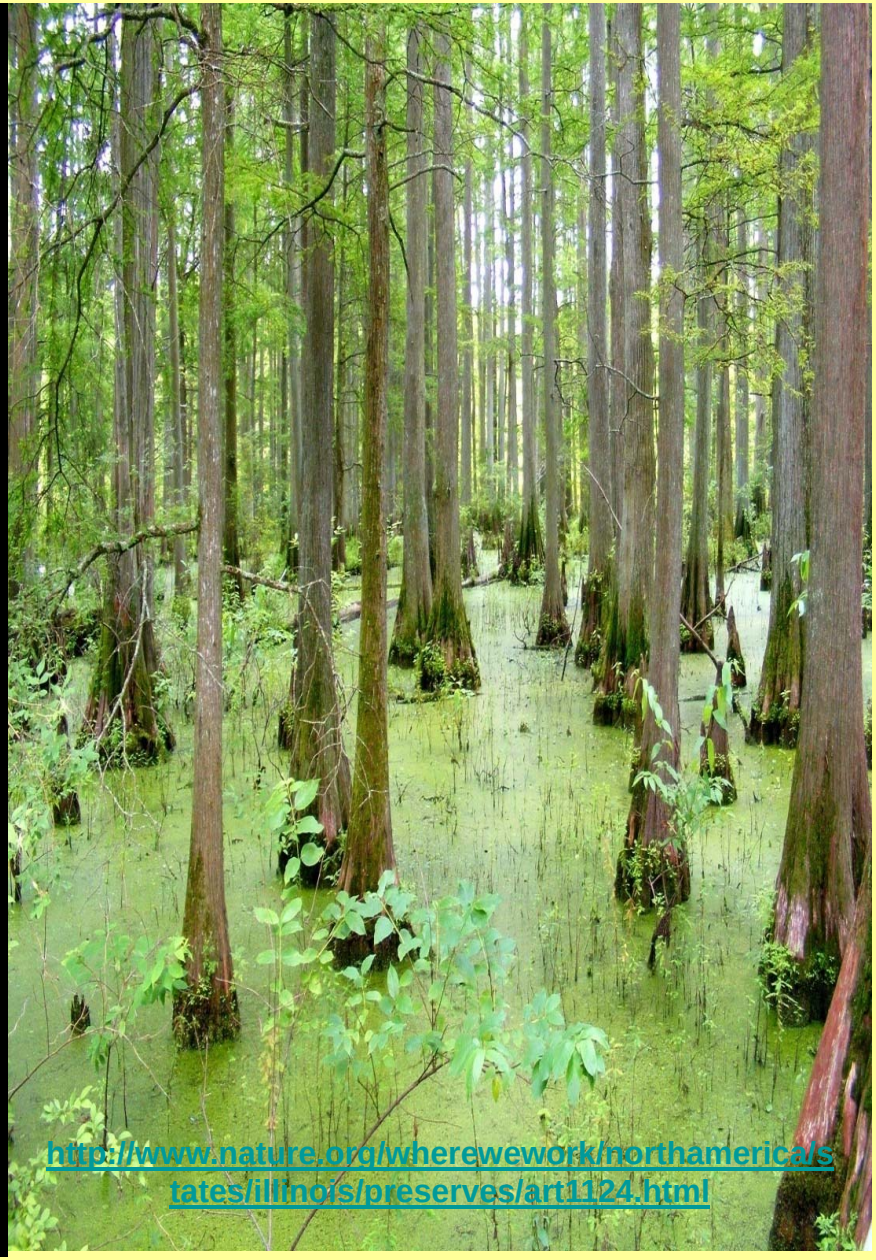
Broad Category Classification





Classification by Wetland Types

1. Swamp forest
   http://www.epa.gov/owow/wetlands/types/bottomland.html
2. Shrub swamp
   http://www.epa.gov/owow/wetlands/types/swamp.html#shrub
3. Marsh
   http://www.epa.gov/owow/wetlands/types/marsh.html
4. Wet Meadow
   http://www.epa.gov/owow/wetlands/types/wmeadows.html
5. Bog/Fen
   http://www.epa.gov/owow/wetlands/types/bog.html
6. Vernal pools
   http://www.epa.gov/owow/wetlands/types/vernal.html



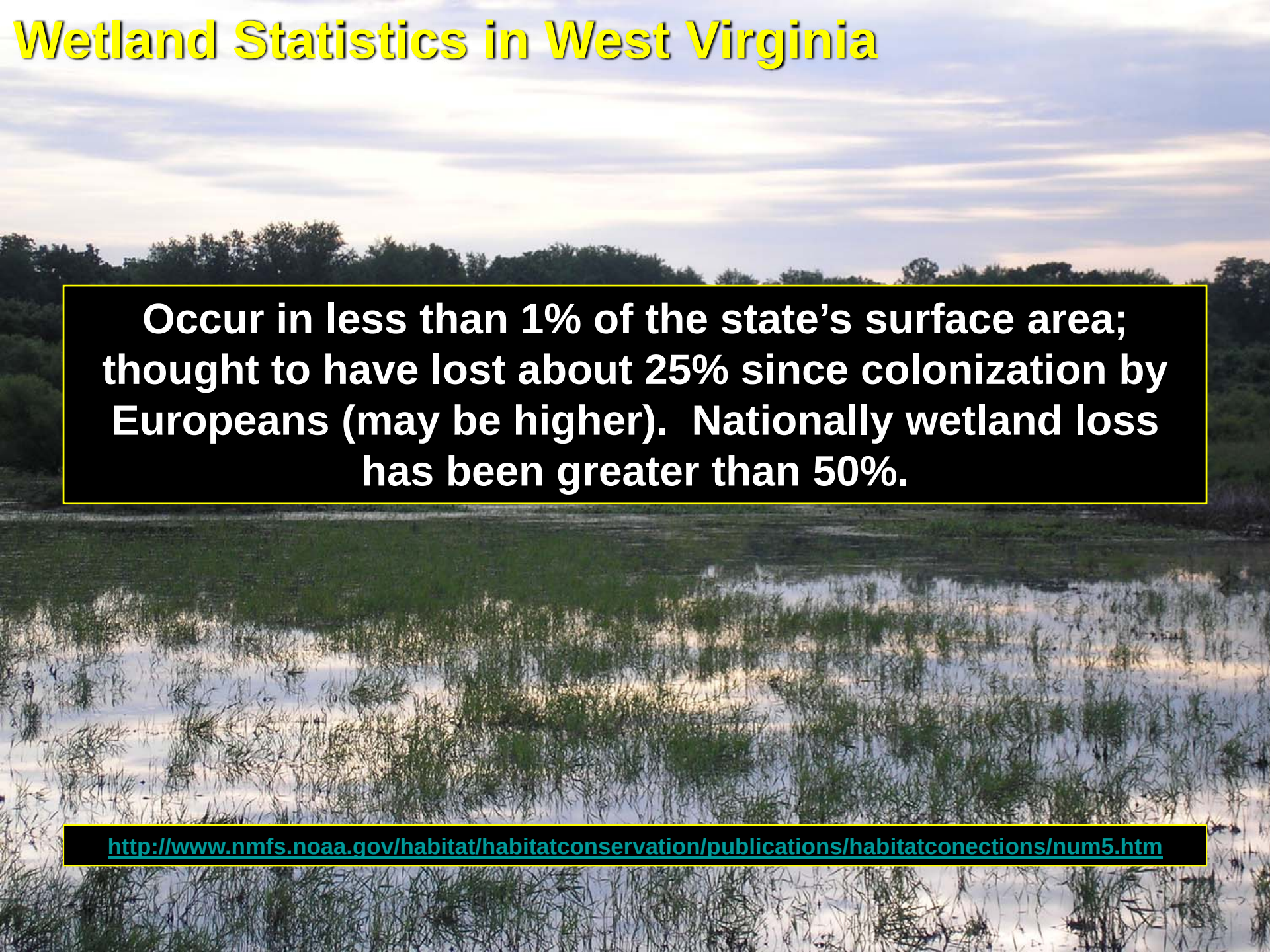
http://www.nature.org/wherewework/northamerica/states/illinois/preserves/art1124.html

Wetland Functions and Values

1. High Productivity: Biomass per unit area is often the highest of any ecological community
2. Habitat Diversity
3. Flood Control
4. Groundwater Recharge
5. Filtration of Nutrients
6. Recreation
7. Agricultural Uses
8. Fisheries
9. Rare and Endangered Species

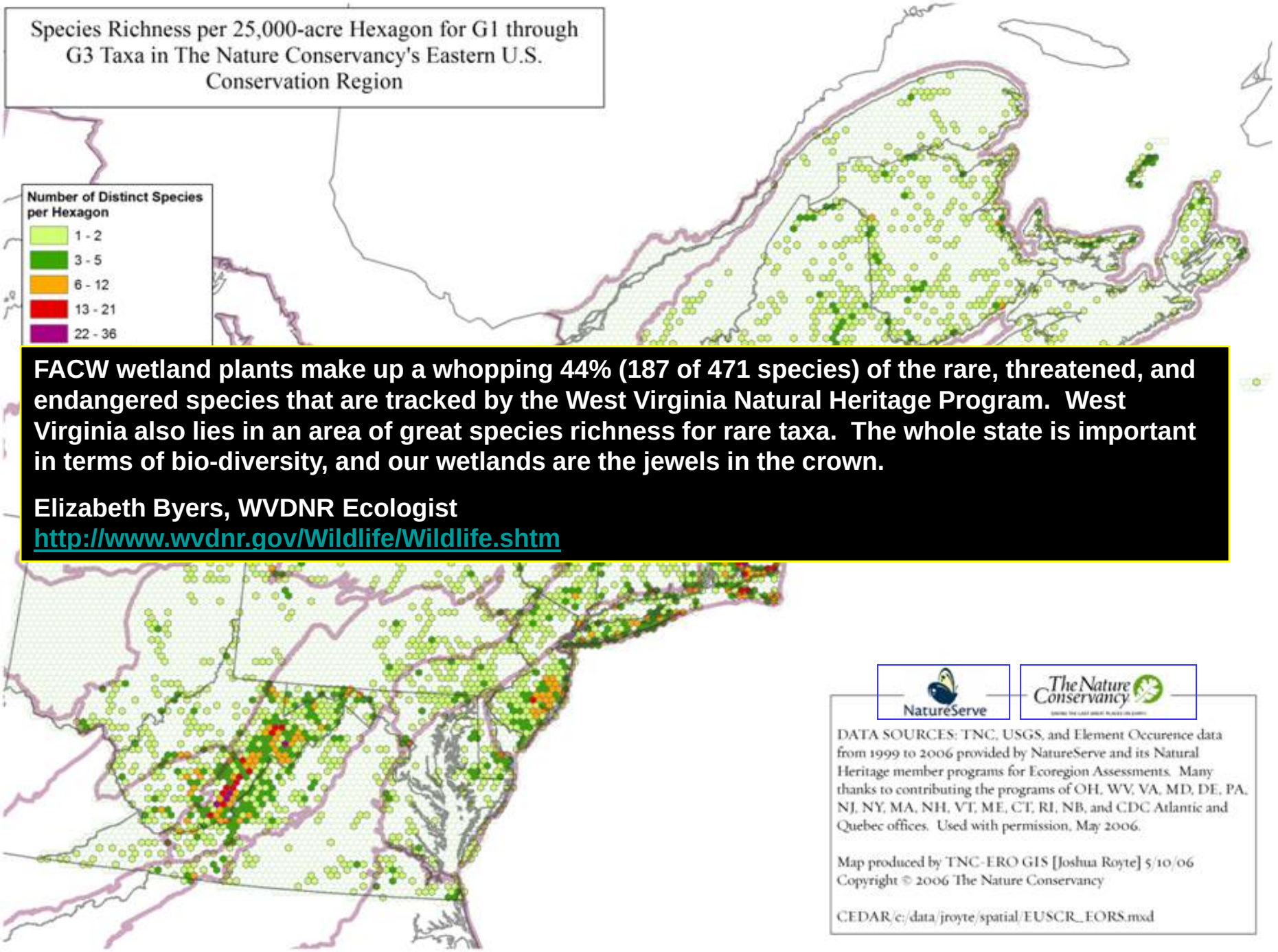
http://www.epa.gov/watertrain/wetlands/

Wetland Statistics in West Virginia



Occur in less than 1% of the state's surface area; thought to have lost about 25% since colonization by Europeans (may be higher). Nationally wetland loss has been greater than 50%.

http://www.nmfs.noaa.gov/habitat/habitatconservation/publications/habitatconections/num5.htm



FACW wetland plants make up a whopping 44% (187 of 471 species) of the rare, threatened, and endangered species that are tracked by the West Virginia Natural Heritage Program. West Virginia also lies in an area of great species richness for rare taxa. The whole state is important in terms of bio-diversity, and our wetlands are the jewels in the crown.

Elizabeth Byers, WVDNR Ecologist
http://www.wvdnr.gov/Wildlife/Wildlife.shtm

How do we determine the extent of our wetland areas?

The US Fish and Wildlife Service uses remote sensing technologies through aerial photography to locate probably wetland areas. The various hues produced by these pictures allowed USFWS to establish signatures for the wetlands. The areas are generally outlined on a 1/24,000 scale USGS topographic map.

USEWS Wetland Geodatabase: http://wetlandsfws.er.usgs.gov/NWI/index.html

1. http://www.merriam-webster.com/dictionary/delineate
2. http://www.mountainzone.com/mountains/detail.asp?fid=4095956

The green line shows the approximate wetland boundary within the aerial view.

Wetland Regulations

The **Clean Water Act** regulates the polluting of national waterways, which includes wetlands.

Section 404 Permit Requirements: Wetlands from 1/10th to ½ acre may need a dredge and fill permit; the US Army Corps of Engineers is the regulating entity for national permits.

State **401 Certifications**: A permit is required to fill a wetland greater than ½ acre.

1. http://www.wetlands.com/regs/tlpge02a.htm
2. http://www.wetlands.com/regs/sec404fc.htm
3. http://www.wetlands.com/regs/sec401fc.htm

Wetlands Are Wonderful

For more information go to: http://www.epa.gov/wetlands/. The next slide provides a variety of resources from the Internet for further reading.

Additional Resources

1. http://el.erdc.usace.army.mil/wetlands/pdfs/wrpde11.pdf
2. http://www.wetlands.com/regs/tlpge02e.htm
3. http://www.epa.gov/owow/wetlands/pdf/wetwalk.pdf
4. http://www.epa.gov/OWOW/wetlands/facts/contents.html
5. http://www.epa.gov/region01/students/teacher/world.html
6. http://www.epa.gov/owow/restore/
7. http://www.fws.gov/nwi/index.html
8. http://www.chesapeakebay.net/wetlds1.htm
9. http://www.wetlands.com/regs/tlpge00a.htm
10. http://www.wvdnr.gov/publications/PDFFiles/High%20Allegheny%20Wetlands-web.pdf
11. http://www.anr.state.vt.us/dec/waterq/wetlands/docs/wl_factsheet2.pdf
12. http://forest.mtu.edu/classes/fw4220/wetlands/deq-water-wetlands-idmanualchap2.pdf
13. http://www.sws.org/education/
14. http://www.sws.org/index.mgi
15. http://www.wetlandswatch.org/wet_facts.asp
16. http://www.dnr.wa.gov/htdocs/lm/field_guides/recognizing/glossary.html
17. http://www.wetland.org/