

2020 Aquatics Ecology Resources

Aquatics Resources

1. Streamkeepers Field Guide
2. Healthy Water, Healthy People Water Quality Educators Guide—Contact Tina Harding, ND Project WET Coordinator for hard copy: tinamharding@nd.gov
3. Healthy Water, Healthy People Field Monitoring Guide Contact Tina Harding, ND Project WET Coordinator for hard copy: tinamharding@nd.gov
4. Living with a River Handbook:
[https://deq.nd.gov/publications/WQ/3_WM/NPS/SWCBinder/Riparian/Living%20With%20A%20River%20Handbook%20\(FINAL\).pdf](https://deq.nd.gov/publications/WQ/3_WM/NPS/SWCBinder/Riparian/Living%20With%20A%20River%20Handbook%20(FINAL).pdf)
5. EPA Volunteer Stream Monitoring Manual: <https://www.epa.gov/sites/production/files/2015-06/documents/stream.pdf>
6. EPA Environmental Education: <https://www.epa.gov/students>
7. USGS Water Science School: <https://www.usgs.gov/special-topic/water-science-school>

Here are some additional resources that will relate to North Dakota

- North Dakota State Water Commission: <http://swc.nd.gov>
 - A reference Guide to North Dakota Waters:
http://www.swc.nd.gov/pdfs/water_reference_guide.pdf
- Prairie Waters Education and Research Center: <http://www.vcsu.edu/prairiewaters/?cm=1>
Aquatic Invertebrate Keys:
 - <http://www.waterbugkey.vcsu.edu/>
 - <http://www.ndfreshwaterinverts.vcsu.edu/>
- North Dakota Department of Environmental Quality:
 - https://deq.nd.gov/WQ/3_Watershed_Mgmt/1_NPS_Mgmt/NPS_InfoEd_Links.aspx
 - ND Watershed Basics:
https://deq.nd.gov/publications/WQ/3_WM/NPS/InfoEd/1_WatershedBasics_FactSheetFinal.pdf

National Envirothon Aquatics Resources:

Abiotic Factors:

1. USGS Water Science Basics: What is the Water Cycle? :
 - <https://water.usgs.gov/edu/watercycle.html>
2. Basic concepts on Watersheds:
 - <https://archive.epa.gov/water/archive/web/html/index-18.html>
3. How to Read a Topographic Map and Delineate a Watershed
 - https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs144p2_014819.pdf

Biotic Factors:

- Introduction to Watershed Ecology: Watershed Academy Web
 - <https://cfpub.epa.gov/watertrain/pdf/modules/WatershedEcology.pdf>
- NOAA The Endangered Species Act: Marine Species
 - http://www.nmfs.noaa.gov/pr/pdfs/esa_factsheet.pdf
- Introduction to Freshwater Fish as Biological Indicators Pages 3-12
 - <https://nepis.epa.gov/Exe/ZyPDF.cgi/P1002J1W.PDF?Dockey=P1002J1W.PDF>

Aquatic Environments

1. USGS Ground water
 - <https://pubs.usgs.gov/gip/gw/gwgip.pdf>
2. Types of Wetlands
 - <https://www.epa.gov/wetlands/wetlands-classification-and-types#marshes>
3. Wetland Functions and Values
 - <https://cfpub.epa.gov/watertrain/pdf/modules/WetlandsFunctions.pdf>
4. Benefits of Riparian Zones
 - https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/?cid=nrcs143_014199#values
5. Riparian Zones: Managing Early-Successional Habitats near the Water's Edge
 - http://www.state.nj.us/dep/fgw/pdf/mgtguide/ch09_riparian_zones.pdf

Water Protection and Conservation

1. ANS Task Force:
 - <https://www.anstaskforce.gov/default.php>
2. Summary of the Federal Clean Water Act: (SDWA)
 - <https://www.epa.gov/dwstandardsregulations>
3. The Quality of Our Nation's Water
 - <https://pubs.usgs.gov/fs/FS-116-99/pdf/fs-116-99.pdf>
4. GIS and Hydrology:
 - https://en.wikipedia.org/wiki/GIS_and_hydrology
5. Water Resources:
 - https://en.wikipedia.org/wiki/Water_resources
6. Water Conservation:
 - https://en.wikipedia.org/wiki/Water_resources

7. Polluted Runoff: Nonpoint Source Pollution

- https://en.wikipedia.org/wiki/Nonpoint_source_pollution

Tips for studying for the aquatics test questions:

- Review the curriculum guidelines posted on the national envirothon website :
<https://www.envirothon.org/the-competition/curriculum-guidelines>

Envirothon Aquatics Committee Members and Contact Information:

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- Review test writing formats and guidelines posted on the national envirothon website:
<https://www.envirothon.org/the-competition/test-writing>