

# 2026 North Dakota Envirothon

## Nonpoint Source Pollution Resources

### Key Topic #1: Understanding Nonpoint Sources of Pollution

1. Define nonpoint source (NPS) pollution.

What is the difference between point and nonpoint source pollution?

2. Identify common nonpoint source pollutants (sediments, nutrients, bacteria/E. coli, pesticides, salts, etc.)

3. Describe how different land uses (agricultural, commercial, urban, etc.) contribute to nonpoint source pollution.

3. Describe the processes that transport nonpoint source pollutants across the landscape.

Consider how climate, soil, and topography influence runoff, erosion and pollutant delivery.

Resources:

<https://www.epa.gov/nps/basic-information-about-nonpoint-source-nps-pollution>

[https://oceanservice.noaa.gov/education/tutorial\\_pollution/welcome.html](https://oceanservice.noaa.gov/education/tutorial_pollution/welcome.html)

[https://www.deq.nd.gov/publications/WQ/3\\_WM/NPS/Program/Final\\_NPSProgramMgmtPlan\\_2021-2025.pdf](https://www.deq.nd.gov/publications/WQ/3_WM/NPS/Program/Final_NPSProgramMgmtPlan_2021-2025.pdf)

<https://www.usgs.gov/water-science-school/science/sediment-and-suspended-sediment>

<https://www.usgs.gov/water-science-school/science/nitrogen-and-water>

<https://www.usgs.gov/water-science-school/science/phosphorus-and-water>

<https://www.usgs.gov/water-science-school/science/bacteria-and-e-coli-water>

## **Key Topic #2: Impacts from Nonpoint Source Pollution**

1. Nonpoint source pollution can cause chemical, physical, and biological impairments to waterbodies. Correlate these impairments to human health, economic, and recreational impacts.

Consider:

The cost of treatment (for drinking water) when large amounts of pollution are present in water

State and federal water quality standards

The presence of Harmful Algal Blooms due to excess nutrients

The biodiversity of fish and aquatic macroinvertebrates in water with excess nutrients/sediments

2. Understand how environmental data (water quality, land use, weather/climate, ecological/biological health and soil health) are used to identify the extent, sources, and impacts of nonpoint source pollution (NPS Survey).

Resources:

<https://www.epa.gov/report-environment/drinking-water>

<https://www.epa.gov/nutrientpollution>

<https://www.epa.gov/report-environment/recreational-waters>

### **Key Topic #3: Watershed Management and Planning**

1. Explain what a watershed is and why it is the most appropriate scale for addressing nonpoint source pollution (as opposed to county or state-scale planning).
2. Understand what the purpose of a Watershed Based Plan and how it can guide watershed restoration/protection efforts.
3. Identify the key components of a watershed-based plan
4. Describe how water quality data (chemical, physical, and biological), models, and other tools can be used to identify priority areas for BMP Implementation.

Resources:

[https://www.deq.nd.gov/publications/WQ/3\\_WM/Factsheets/WMP\\_WatershedProjectBenefits\\_FactSheetFinal.pdf](https://www.deq.nd.gov/publications/WQ/3_WM/Factsheets/WMP_WatershedProjectBenefits_FactSheetFinal.pdf)

[https://www.deq.nd.gov/publications/WQ/3\\_WM/NPS/InfoEd/1\\_WatershedBasics\\_FactSheetFinal.pdf](https://www.deq.nd.gov/publications/WQ/3_WM/NPS/InfoEd/1_WatershedBasics_FactSheetFinal.pdf)

<https://www.epa.gov/nps/data-models-and-other-technical-resources-watershed-approach>

[https://www.deq.nd.gov/WQ/3\\_Watershed\\_Mgmt/SWDataApp/viewer/index.html](https://www.deq.nd.gov/WQ/3_Watershed_Mgmt/SWDataApp/viewer/index.html)

## **Key Topic #4: Best Management Practices (BMPs) for NPS Mitigation**

1. Define Best Management Practices (BMPs) and how they mitigate nonpoint source pollution transport.

Consider co-benefits like improvements to soil health and animal habitat

2. Identify agricultural BMPs that reduce nonpoint source pollution.

3. Identify urban BMPs that reduce nonpoint source pollution.

4. Identify BMPs that reduce nonpoint source pollution for specific water quality concerns (excess sediments, nutrients or bacteria).

4. Explain how BMPs increase resiliency.

Consider environmental factors (floods, droughts, fires, etc.) and economic factors (costs for water treatment, fertilizers, etc.)

Resources:

[https://www.deq.nd.gov/publications/WQ/3\\_WM/NPS/Program/2025\\_NPSBMPPGuidelines\\_Final.pdf](https://www.deq.nd.gov/publications/WQ/3_WM/NPS/Program/2025_NPSBMPPGuidelines_Final.pdf)

<https://pollution.sustainability-directory.com/learn/what-are-best-management-practices-bmps-in-agriculture-for-reducing-runoff/>

<https://www.farmers.gov/conservation/conservation-at-work> (Sort Conservation Type by "Water Quality")

## **Key Topic #5: Partners and Community Involvement**

1. Identify key partners involved in addressing nonpoint source pollution, including State agencies (e.g., NDDEQ), Local governments and watershed groups, Soil Conservation Districts (SCDs), Federal agencies (EPA, NRCS, USACE), Tribes, NGOs, and educational institutions.
2. Explain the roles and responsibilities of different partners in planning, funding, implementing, and maintaining BMPs.
3. Describe the importance of voluntary, incentive-based approaches in nonpoint source pollution management.
4. Explain how public education and outreach improve awareness and participation in water quality protection.
5. Describe the role of landowners, producers, and community members in watershed protection and restoration.

Consider how stakeholder engagement contributes to long-term success.

Resources:

[https://www.epa.gov/system/files/documents/2025-12/in-depthss\\_cheatwv\\_finaldraft\\_0623\\_2025toepa\\_508.pdf](https://www.epa.gov/system/files/documents/2025-12/in-depthss_cheatwv_finaldraft_0623_2025toepa_508.pdf)

<https://farmlandinfo.org/publications/water-quality-targeting-success-stories-how-to-achieve-measurably-cleaner-water-through-u-s-farm-conservation-watershed-projects/>

<https://rootriverfieldtostream.org/>

<https://sandcountyfoundation.org/our-work/outreach---education/municipal-ag-watershed-partnerships>

[https://www.deq.nd.gov/publications/wq/3\\_WM/NPS/Contacts-Maps/TaskForce\\_MemberList.pdf](https://www.deq.nd.gov/publications/wq/3_WM/NPS/Contacts-Maps/TaskForce_MemberList.pdf)