Key Topics	Learning Objectives	Learning Materials (LO Alignment)
KT 1: Non-Point Source Pollution Status	LO 1.1: Define non-point source (NPS) pollution and differentiate it from point source pollution using real-world examples from urban and rural settings.	The Water Cycle Biogeochemical Cycles Nutrient Dynamics What is a Watershed? Understand Your Watershed: Hydrology and Geomorphology Designated Uses and Why They Are Important Basic Information About Nonpoint Source Introduction to Clean Water Act Overview of Identifying and Restoring Impaired Waters
	LO 1.2: Explain changes in watershed ecology that influence NPS pollution (Water cycle, nutrient cycles, carbon cycles, river continuum concept).	
	LO 1.3: Identify major types, sources and pathways of NPS pollution in surface water systems, including stormwater runoff, agricultural fields, and impervious surfaces.	
	LO 1.4: Describe the impacts of NPS pollution on water quality and designated water uses (e.g., recreation, fisheries, drinking water).	
KT 2: NPS in a Growing World and Your Role in It	LO 2.1: Explain how population growth, urban expansion, and agricultural intensification contribute to increased non-point source pollution globally and locally.	Land Use Protecting Water Quality from Urban Runoff Protecting Water Quality from Agricultural Runoff A Regional Examination Calculating Stormwater and Nitrogen Loading Reduction/Prevention Best Management Practices to Control Nonpoint Source Pollution Water Footprint Calculator
	LO 2.2: Compare the effects of land use types (e.g., urban, suburban, agricultural) on runoff volume and pollutant loading.	
	LO 2.3: Identify common products or practices in daily life that contribute to non-point source pollution through indirect pathways (e.g., fertilizers, car washing, pet waste).	
	LO 2.4: Illustrate the concept of a personal environmental footprint as it relates to NPS pollution, using tools such as footprint calculators.	
KT 3: The role of the Individual/Community in NPS issues and solutions	LO 3.1: Describe the role that individuals, families, and local communities can play in reducing NPS pollution through behavior change and local initiatives.	Overview Nonpoint Source: Urban Areas Benefits of Low Impact Development Costs of Low Impact Development: LID Saves Money and Protects Your Community's Resources Effectiveness of Low Impact Development Large Volume Storms and Low Impact Development Space Limitations and Low Impact Development Revising Local Codes to Facilitate Low Impact Development Urban Runoff: Model Ordinances to Prevent and Control Nonpoint Source Pollution
	LO 3.2: Identify examples of community-based solutions to NPS pollution (e.g., storm drain marking campaigns, rain garden installations, stream cleanups).	
	LO 3.3: Compare the effectiveness of individual vs. collective actions in mitigating NPS pollution at the watershed scale.	
	LO 3.4: Demonstrate how to design or participate in a local outreach or monitoring project that addresses NPS pollution, such as conducting a stormwater audit or organizing a pollution prevention campaign.	
	LO 3.5: Interpret the benefits and limitations of volunteerism, citizen science, and public- private partnerships in addressing NPS issues.	
KT 4: Strategies to Evaluate NPS Sources, Issues, and Solutions	LO 4.1: Identify tools and techniques used to assess non-point source pollution, including watershed mapping, stormwater flow tracing, and visual assessment methods.	Nonpoint Source Monitoring Designing Water Quality Monitoring Programs Exploring Your Data Surface Water Flow Lag Time Using Biological and Habitat Monitoring Data to Plan Watershed Projects Pollutant Load Estimation for Water Quality Monitoring Projects Land Use and BMP Tracking for NPS Watershed Projects Explanatory Variables How to Read a Topographic Map and Delineate a Watershed
	LO 4.2: Explain how monitoring data (e.g., water quality indicators such as turbidity, E. coli, nutrients) can be used to evaluate the presence and severity of NPS pollution.	
	LO 4.3: Describe the challenges in monitoring, quantifying, and managing NPS pollution compared to point source pollution.	
	LO 4.4: Apply simple field protocols to evaluate land use and physical features (e.g., slope, impervious cover, vegetative buffers) that influence runoff and pollutant transport.	
	LO 4.5: Interpret basic maps, aerial imagery, or field data to locate potential sources of NPS pollution in a given watershed.	
	LO 4.6: Recommend appropriate solutions based on identified issues in a mock or real-world NPS pollution scenario, drawing on field evidence or data interpretation.	
KT 5: Legislation, Regulations, and Voluntary Measures	LO 5.1: Summarize major U.S. policies and programs that address non-point source pollution, including the Clean Water Act (especially Sections 303 and 319) and Total Maximum Daily Loads (TMDLs).	Nonpoint Source Program Overview of TMDLs Stormwater Runoff Mississippi River Gulf of Mexico Watershed Nutrient Task Force Deepwater Horizon How China is Designing Flood-Resistant Cities Managing Stormwater to Improve Canadian Cities' Safety and Resilience
	LO 5.2: Differentiate between regulatory and voluntary approaches to controlling NPS pollution and identify examples of each.	
	LO 5.3: Describe how federal and state agencies support local communities in managing NPS pollution through funding, education, and technical assistance.	
	LO 5.4: Simulate a decision-making process where students must select appropriate policy or program tools to manage a fictional watershed's NPS challenges.	
KT 6: Your Best Management Practices for NPS	LO 6.1: Identify common BMPs used to reduce NPS pollution in urban, suburban, and agricultural environments (e.g., rain gardens, cover crops, buffer strips, pervious pavement).	BMPs Used to Reduce NPS Pollution Agricultural Nonpoint Source Pollution Economics of Water Quality Estimating Benefits and Costs of Stormwater Management Case Study-Burnsville Rain Gardens Cast Studies for Stormwater and Rainwater Harvest Home NPS BMPs Steps to Help Control NPS Pollution
	LO 6.2: Explain how selected BMPs reduce pollutant loads or improve stormwater infiltration, using diagrams or real-world examples.	
	LO 6.3: Compare the costs, benefits, and feasibility of different BMPs in various land use contexts (e.g., a schoolyard vs. a farm vs. a residential street).	
	LO 6.4: Demonstrate how to plan or assess a BMP using a field checklist, photo documentation, or a site sketch (e.g., rain garden layout or runoff path).	
	LO 6.5: Recommend appropriate BMPs for a hypothetical site based on land use, soil conditions, and observed pollution risks.	