

Scholastic Programs

Part of *Approaches to Clean Water Communication*

Overview

In addition to communicating with the general public, many water quality programs work to educate students on water quality restoration and protection. This document explains some of the diverse ways that programs have done so. The information provided here originates from responses to an Environmental Law Institute questionnaire on communication in the fall of 2019. The examples are not intended to be comprehensive; rather, their collection is meant to facilitate the sharing of ideas among water quality programs, especially CWA 303(d) programs, and generate new ideas about how to present water quality and program information.

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Programs in Schools

School Visits and Field Trips

Alaska: Staff visit schools and participate in other outreach. Typically, topics covered include watersheds, pollution, how individuals can help, and monitoring. Topic and scope depend on age and audience. It is hard to tell how helpful efforts are; when presenting to high school or college students, more of the message is received. These topics are difficult to translate for younger students.

Connecticut: DEEP does programs with schools on an as-requested basis. Programs often involve bringing table-top watershed models or vials with benthic macroinvertebrates, etc., to share with students.

Fond du Lac Band of Lake Superior Chippewa: Natural Resource staff coordinate with the Ojibwe School and summer camps to come in and teach about wild rice, treaty rights, and water quality. This is done in house. FDL staff also taught middle and high school kids about treaty rights at the [Lake Superior Youth Symposium](#), which brings in students who live in the Lake Superior Basin from Canada and the U.S.

Indiana: Biological field staff often provide electrofishing and macroinvertebrate demonstrations to college-level students. The agency offers Earth Day presentations, including an [Enviroscape presentation](#) to show water movement through a watershed. Since these are different for the students, it is hoped that they gain understanding from them.

Kentucky: Staff frequently do streamside field trips where they teach about macroinvertebrates that live in the stream and how they are used to assess water quality. These have been very well received by both students and teachers.

Louisiana: Staff members go into schools or attend events and provide education to the school children. DEQ is also planning educational events and materials for school children and citizens as a part of the "New Vision" approach. Previously, materials provided at schools and other events have generally covered typical water pollution topics, but especially nonpoint source pollution. Educational materials developed for the "New Vision" may cover both point and nonpoint source pollution as well as hydrology/channel modification.

Nevada: BWQP has one staff position focusing on education. This staff member, among other things, organizes two "Snapshot-Day" events on local rivers enabling students to learn sampling techniques and the importance of water quality and general stewardship of our natural resources.

New Mexico: NMED has a local "My Water, My Watershed" program that takes 5th and 6th graders into the closed Santa Fe municipal watershed to discuss prescribed burning, erosion causes and controls, benthic macroinvertebrates,

water quality, and tree ecology. Staff have also presented to classrooms about the water cycle and water treatment.

Penobscot Nation: Education is provided at Island Indian School through Native Studies classwork, an after-school program, and a summer program. Tribal students have been given tours of the wetland, during which its importance and how sampling is used to measure changes in water quality (especially following a new wetland) are discussed. Presentations are also given to non-Native classrooms (elementary school through graduate level).

Red Lake Nation: Staff often visit classes with freshwater invertebrates to increase comfort around “bugs” and to discuss the value of bioassessment. Staff have always been asked to come back—so much so, in fact, that they have been forced to turn some classes down.

U.S. Virgin Islands: Presentations cover nonpoint and point source pollution and how they tie into water quality, the CWA 303(d) list, and TMDLs. It is somewhat effective, but difficult to make the lessons applicable to a large audience.

Ute Mountain Ute Tribe: Staff host middle school- to high school-age groups in the field a few times a year to discuss scientific work and ecological concepts.

Virginia: Some lessons have included benthic macroinvertebrate “investigations” to figure out what water quality data suggests is causing the problem. This includes an acknowledgement that these endeavors are data limited.

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School Projects and Events

District of Columbia: DOEE collaborates with the University of the District of Columbia on sampling for ambient monitoring and student-development related matters.

Guam: The Bureau of Statistics and Plans, in partnership with the Guam Department of Education, is implementing the 14th year of the Guardians of the Reef Program in 2019. Guardians of the Reef is a service learning program that trains high school students to give presentations to third-grade students about coral reefs, their importance to our island, the threats they face, and actions students can take to help preserve them. News coverage of the training can be viewed [here](#). Marine Mania is a high school club dedicated to teaching the community about the ocean environment and ecosystem. The club’s efforts to protect the ocean include educational outreach in public schools. Marine Mania also partners with the Guam Department of Agriculture to conduct planting projects, which help reduce sedimentation from getting into Guam's reefs. Examples of the club’s awareness-building efforts can be viewed [here](#).

South Carolina: DHEC, along with Dominion Energy and International Paper, sponsor [Champions of the Environment](#) grants for environmental projects from K-12 classes or groups.

Texas: TCEQ TMDL staff have exhibited and provided outreach and education materials at elementary school career day events. The Galveston Bay Estuary Program frequently visits schools and provides interactive presentations to educate students on their watershed and personal connection to the bay. K-12 involvement is currently a priority of the program, and many projects it funds contain some element of student or youth involvement. The Galveston Bay Foundation is a well-established resource for many local schools. They organize many local outreach events geared toward students and provide programs aligned with the Texas Essential Knowledge and Skills (TEKS) established by the Texas Education Agency. These programs are available on their [website](#).

Virginia: Some regional offices have worked with schools in TMDL/TMDL IP watersheds. Students help monitor the streams and analyze data. Not only did this engage the students and get them excited about the topic, but in at least one case, the presentation of their results was the kickoff to a TMDL meeting where the TMDL study was then introduced and public comment was solicited. In general, this seems to be a successful tactic in that it engages students (elementary through college) in the process, and in some cases helps develop future stewards of the watersheds (e.g., citizen monitors, advocates, etc.)

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Envirothon

[Envirothon](#) is a national competition for high school students in which teams compete based on environmental knowledge. Though the competitions focus on different topics, each year has a different focus area. The 2020 competition was canceled due to COVID-19, but the planned focus was “Water Resource Management: Local Control and Local Solutions.” Many states responded that staff assist with the Envirothon program, such as by providing staff for competitions. The states that reported doing so are as follows:

- [Connecticut](#), Maine, Nebraska, North Dakota

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Teacher Education

Generally

Fond du Lac Band of Lake Superior Chippewa: NOAA’s Lake Superior Estuarine Research Reserve runs a program to teach elementary, middle, and high school teachers how to incorporate understanding and appreciation of the St. Louis River into their curriculum. Teachers come from language arts, science, arts, and

mathematics. The teachers spend one day every summer with us on the Reservation, learning about tribal issues surrounding the river and treaty rights. More information about this program can be found [here](#).

Guam: [GuamWaterKids](#) was created with a grant via the Guam Water and Environment Research Institute. It offers materials for teachers of elementary school, high school, and continuing education, as well as pages dedicated to students with videos and flashcards.

Iowa: [Water Rocks!](#) is a CWA 319-funded program at Iowa State University that works with youth on water quality issues, including by providing training for teachers on modules they have developed.

Missouri: Many K-12 schools use the information provided through the [Missouri Volunteer Water Quality Monitoring Program](#). Teachers generally attend workshops then develop a way to incorporate information into their curriculum.

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Project WET

A number of programs use [Project WET](#) (Water Education Today or Water Education for Teachers) curricula or activities with students and teachers. The list jurisdictions that do so, with links to state-specific programs, is as follows:

- Arkansas, [Connecticut](#), [Georgia](#), Iowa Tribe of Oklahoma, Kentucky, Nevada, [Ohio](#), [West Virginia](#)

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Website Materials

Connecticut: DEEP has a [webpage](#) about environmental curriculum topics. The page also links to its environmental education centers, which offer a wide range of training and school programs.

Guam: [GuamWaterKids](#) was created with a grant via the Guam Water and Environment Research Institute. It has materials for primary school, high school, and continuing education teachers, and videos and flashcards for students.

Iowa: [Water Rocks!](#) is a CWA 319-funded program at Iowa State University that works with youth on water quality issues. The website has songs, videos, and a game. The program also has a [Soundcloud](#) and a [YouTube channel](#).

Maryland: MDE visits schools on an ad-hoc basis. DNR, MDE's sister agency, has a more robust environmental education [program](#).

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Outside of School

Alabama: NPS Program staff assist with water festivals for 4th grade students. Topics include the water cycle and other water quality issues.

Florida: DEP has [Enviroscape](#) nonpoint source displays that have been used for bring-kids-to-work-day activities, along with an exercise using dichotomous keys for identifying candy, sediment BMP demonstrations, and identifying bugs and algae. It is hard to judge how effective these are, but they are always well received.

Maine: DEP and other partners organize an annual Southern Maine [Children's Water Festival](#) (a Northern Maine festival is held every other year). The festivals are very popular with schools and typically attended by 700–900 students.

Minnesota: PCA staff volunteer at various [children's water festivals](#) around the state.

Nebraska: Staff regularly present at the [Nebraska Water Leaders Academy](#) for young professionals.

New Mexico: Staff present annually in the Rio Rancho Children's Water Festival and the Santa Fe Children's Water Festival, and have occasionally presented in the McKinley County Children's Water Festival. The activity presented focuses on the water cycle, where water is found in the community, how pollution can travel throughout the water cycle, and water conservation.

Penobscot Nation: Education is provided through wild food safety series materials, posters in the Department of Natural Resources office, and through [Wabanaki Youth in Science](#) (WaYS) camps and internships.

Red Lake Nation: A water festival is held annually for 5th graders. The response is always very positive.

South Dakota: Staff are involved with water festivals.

Texas: CEQ TMDL staff have exhibited and provided outreach and education materials at Earth Day and Bay Day events, as well as educator open houses.

West Virginia: The [West Virginia Youth Environmental Program](#) provides the state's youth a challenge and an opportunity to participate in environmental projects within their communities.

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Grant Programs

Montana: DEQ administers a mini-grant program. Several watershed groups have partnered with elementary and high schools to receive funding.

New Jersey: DEP administers a grant-funded AmeriCorps Program called the [New Jersey Watershed Ambassadors Program](#). The Ambassadors are the state's "boots on the ground" and promote watershed stewardship through education and direct community involvement and monitor stream health through performing visual and biological assessments. Individual AmeriCorps members are assigned to each of New Jersey's 20 watershed management areas (WMAs) to serve as "Watershed Ambassadors" to their respective watershed communities. Watershed Ambassadors play an important role in raising awareness of how human activities can affect water quality, especially in the most densely populated state in the nation. Each year, a new group of 20 Watershed Ambassadors engages with community members, channeling awareness into action.

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