

FORESTRY NOTES SPECIAL REPORT



National Association of
Conservation Districts

Envirothon cultivates tomorrow's forestry leaders

Each year, more than 25,000 high school students from the United States, Canada and China test their knowledge of natural resources through participation in the National Conservation Foundation (NCF)-Envirothon.

The Envirothon is a multi-level critical thinking and problem-solving competition that builds leadership experience for students of ages ranging from 14 to 19. Incorporating STEM (science, technology, engineering and math) principles, experiential learning and hands-on outdoor field experiences, the program encourages students to explore environmental education in the areas of aquatic ecology, forestry, soils and land use, wildlife and current environmental issues.

"For years, Envirothon has educated and equipped the next generation of great conservation leaders with the knowledge and skills to change the world," said Jennifer Brooks, NCF-Envirothon Program Manager. "For the students, it's an opportunity to learn and compete, but also to interact with professionals from the fields they may one day work in, including forestry. For the thousands of volunteers that make the Envirothon possible, it's a joy to see the students' passion and to watch those career possibilities take shape."

From its inception in 1979 as the Pennsylvania Soil and Water Conservation Districts' "Environmental Olympics," the Envirothon program has grown and evolved, but always with a similar mission: to provide students with outdoor hands-on experiences to learn about natural resources. Guided by an advisor, students work in teams of five to develop theoretical and practical knowledge in each of the Envirothon areas of study, putting their



skills to the test at local, state/provincial and international competitions.

The first-place team from each state, provincial and partner nation competition is eligible to compete at the international level at the annual NCF-Envirothon competition. The NCF-Envirothon challenges students to integrate their natural resources management knowledge and skills to create inventive solutions for the complex environmental issues facing our world today. Conservation districts in many states provide support and learning opportunities for area teams, and partners such as the U.S. Forest Service and state forestry agencies contribute through funding, as well as educational encounters and resources.

"From the local competition up to our international event, none of this can happen without our partners," Brooks said. "Their support and expertise help make Envirothon a success."

Engaging today's youth in environmental education helps to prepare them to be the

conservation leaders of tomorrow. Throughout the four decades of the program, countless conservation and natural resource professionals have found their calling through Envirothon.

"Participating in the Envirothon gave me the opportunity to meet a wide variety of natural resource professionals, find out what they did for a living, and see how they helped manage and protect our natural resources," said Thomas Rudd, a registered forester who competed in the 2004 Envirothon held in West Virginia. "After I came back from (Envirothon), I was convinced forestry was the right career path for me."

The Envirothon is a program of the National Conservation Foundation, a 501(c)3 organization that works to develop the next generation of conservation leaders.

The 2022 competition will be held in July and will be hosted by the Ohio Federation of Soil and Water Conservation Districts in conjunction with NCF.

State forestry agency helps provide questions, support

Earlier this year, Nebraska hosted the international NCF-Envirothon competition, which meant that Nebraska Forest Service participated in contributing questions in one of the four core areas: forestry.

Coming up with questions can be a rigorous process.

"We like to joke that it's kind of a condensed version of an undergraduate degree," said Nebraska Envirothon Committee Co-Chair Jack Hilgert, who also serves as Conservation Education Assistant with the Nebraska Forest Service at the University of Nebraska-Lincoln.

At this year's competition, students covered forestry management issues common

to Nebraska, such as windbreak programs, privately-owned forest lands, community forests, invasives, wildlife management and sustainability.

Since he's been on the committee, Hilgert has revamped the state Envirothon forestry study guide and developed new learning objectives in the forestry area. Hilgert, with other committee members' input, pulled together eight main concept areas with various subsets of information that students should know or be able to do when it comes to forestry. These included: tree measurement and identification, tree physiology, the history of forestry, forest management process and procedures, who manages the state's forests and how, forest health, classification of threats, policies related to different management and usage strategies.

Suggestions for test questions come from reviewing previous year's contests as well as creating new questions. Nebraska Forest Service dedicates several staff members representing each major agency program to the committee in order to ensure that each regional and state exam give a holistic taste of all that forestry entails.

"Nebraska is unique because we have a wide variety of forest types and utilization

priorities throughout each region," Hilgert said. "We hope that students that participate in Nebraska's Envirothon program learn about their local, neighborhood trees and forests, but also appreciate the diversity and complexity of our state's forests; from the Pine forests in our northwest panhandle to the Deciduous forests in the southeast corner and the countless community forests in every Nebraska city, town and hamlet in between."

Nebraska's local natural resource districts are actively involved in Envirothon by visiting schools, hosting events to educate students on potential topics, running the regional and state exams, and compiling test data for the state to review for the next competition.

Supporting Envirothon in Nebraska aligns closely with the state agency's mission.

"Whether they go into a natural resource profession or not, these students will ultimately be future citizens, landowners and stakeholders," said Hilgert. "Increasing their understanding of the complexities involved with our state's forests and trees will help Nebraskans, and our communities, implement resilient resource management practices into the future."



Ben De Blois

Timber Program Manager,
U.S. Forest Service,
Coconino National Forest
Arizona Envirothon alum

"The Envirothon marked the first time I was exposed to the exciting world of forestry. I'll never forget the first day of the competition when I thought to myself, 'You mean people get paid to do this?'"



Shelby Wells

Sophomore at
Oregon State University
Oregon Envirothon alum

"I wouldn't have chosen the career path I'm in without the support and encouragement of my coach. I learned how much I enjoy the outdoors and identifying species. I am pursuing a degree in fisheries and wildlife with a minor in adventure leadership with the intent on becoming a forest ranger."



Seth Harden

Upper Wabash River Project
Director, The Nature Conservancy
(attended Purdue University,
BS Forestry)
Indiana Envirothon alum

"Envirothon provided exposure to conservation professionals from governmental agencies and NGOs who were doing real science outdoors and getting paid to do it. That eventually led me to my academic focus and career trajectory."



Saba Saberi

Research Scientist and Fire
Ecologist with the University
of Washington (studying forest
structure change and vegetation
response to fire using field
measurements and remotely
sensed data)
California Envirothon alum

"Getting to do field measurements in the different fields and talking to practitioners made me realize that you could get paid to spend time in the woods with trees!"



Helping kids understand the ‘why’ of forestry

For the Tillamook School District, located about 70 miles west of Portland, Oregon, Envirothon is almost a rite of passage when it comes to learning about forestry.

“We’re a forestry community,” Tillamook High School Natural Resources Career Technical Education and Science Teacher Lori Loeffler said. “We have two mills in town, so these kids have grown up with the forest. It drives what we do.”

“(But) kids come in here with a lot of misconceptions. They might understand the how, but they don’t know the why,” she said.

For example, which trees are the best to harvest?; why is a logging road built one way in one area and a different way in another?; why are some trees not planted in this section of the state but grow in another?

“Giving them the why makes the light go on,” she said. “That gets them to really care about why things are done a certain way – to take care of the forest and make sure it’s sustainable for future generations.”

For Loeffler’s students, preparing for Envirothon begins nearly at the start of the school year. Teams of five, and sometimes several alternates, are chosen just a few weeks after school starts in September. From there, the team selects which members will be the “mini-specialists” for each of the Envirothon

test areas: forestry, wildlife, aquatic ecology and soils and land use. The fifth topic is a question related to current events (this year it focuses on waste) and at nationals, a sixth element, a 20-minute presentation followed by a 10-minute Q&A segment, is added.

Loeffler does as much teaching as possible outdoors, embedding Envirothon concepts into the natural resources curriculum, which includes having her students teach forestry-related classroom and field activities to students as young as kindergarten-age.

Envirothon teams across the country follow similar paths on the road to the national competition. Each state has a 20-question multiple choice and hands-on activities test. A variety of conservation and environmental agencies partner together — local, regional, statewide

and federal — to determine the important topics and in some cases create the exam.

In Oregon — which will celebrate its 25th Envirothon anniversary in May 2022 — the Tillamook County Soil and Water Conservation District (SWCD) helps Loeffler’s team prepare for the competition; the Marion County SWCD, with help from the City of Salem, prepares the aquatic ecology questions for the state competition. Other conservation districts participate in different ways.

“In Oregon, we rely heavily on experts, such as conservation districts, in each field to help write tests and administer those during the competition,” said Rikki Heath, environmental educator for the Oregon Forest Resources Institute, which runs the competition in the state.

“For forestry, we really want them to know tree and shrub identification, physiology (how a tree functions), forests as an ecosystem and about sustainable forest management and how trees are an important renewable resource,” Heath said.

The contests provide a connection to forestry with everyday life that many take for granted, such as turning on tap water to drink, wildlife watching, healthy soils that are used to grow crops, or a particular tree and its function on a city block.

In the process, Envirothon affords students the exposure and experience to enjoy natural resources, and in some cases (including several of Loeffler’s former students), make their way into the professional world of natural resources careers. They may become a forester that one day will head back to classroom to provide support and expertise for the school’s Envirothon team.



Partnership provides opportunities for diversity

For years, the U.S. Forest Service has partnered with the National Conservation Foundation (NCF)-Envirothon to provide grant opportunities for projects aimed towards expanding diversity among student participants. Known today as the NCF-Envirothon Diversity Enhancement and Underserved Audience Grant Program (Diversity Grants), the goal is to provide outreach to minority and underserved urban and/or rural students lacking access to natural resource-based outdoor educational opportunities.

Mini grants of \$2,000 to \$4,000, funded by the U.S. Forest Service, are awarded to state

Envirothon programs for diversity projects that provide students with exposure to the Envirothon competition and education in the areas of forestry, soils and land use, wildlife, aquatic ecology and current environmental issues. Funding for the Canadian Provincial Envirothon program's diversity projects is provided by NCF.

Examples of projects include:

- ▶ **Participation Projects** cover travel and registration costs for participation in state/provincial Envirothon competitions.
- ▶ **Outreach and Engagement Projects** initiate training and/or marketing programs for participants and advisors on Envirothon and natural resource education for youth.
- ▶ **Community Partnership Projects** are developed by state/provincial Envirothon programs in conjunction with local organizations.
- ▶ **Cultural Inclusion Projects** (for example) bring Native American/First Nations culture into state/provincial Envirothon competitions/programs/materials in the form of ceremonies, histories, oral traditions, indigenous systems of science, traditional ecological knowledge, etc.
- ▶ **Environmental Literacy and Experiential Learning Projects** seek to increase environmental literacy of youth, involving them in a hands-on approach to outdoor natural resources education.
- ▶ **Accessibility Projects** help adapt training/testing materials for hearing, visually or mobility impaired students.



ADDITIONAL MATERIALS RELATED TO THIS SPECIAL REPORT



NCF Envirothon

<https://envirothon.org>



Project Learning Tree

Activities and resources to engage children in learning about the environment through the lens of trees and forests.

<https://www.plt.org>



NCF-Envirothon iNaturalist Project

A unique platform for ecological exploration and education.

<https://envirothon.org/educational-resources/inaturalist>



National Association of Conservation Districts

NACD Conservation Education Hub

Materials and curricula for all school ages, collegiate students, and adults on topics from forestry and soil health to pollinators and many other conservation topics.

<https://www.nacdnet.org/conservation-education-hub>

