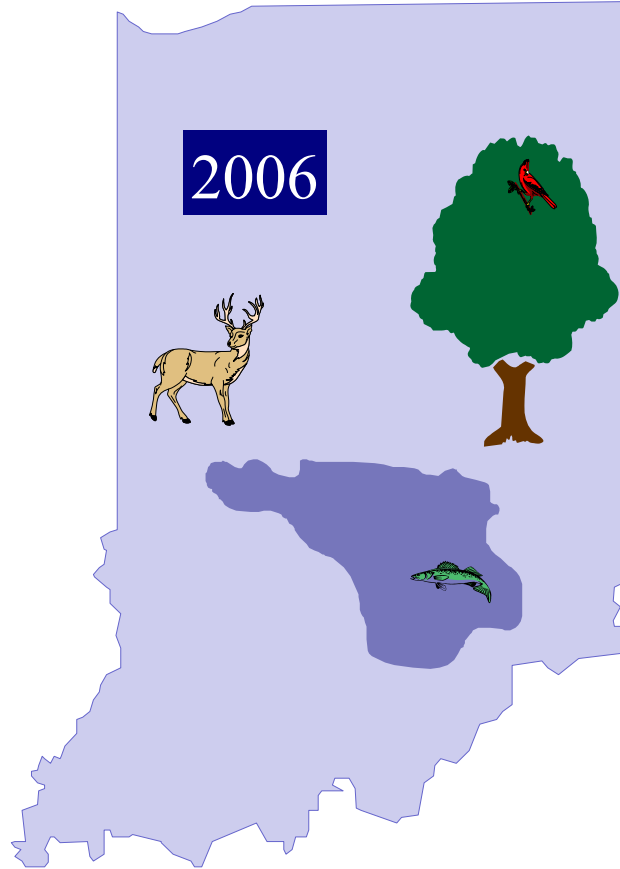


Indiana Envirothon



The Indiana Association of Soil and Water Conservation Districts and the Toyota Corporation, Indiana Division are proud to sponsor the **Indiana Envirothon**.

“What is the Indiana Envirothon?”

The Indiana Envirothon promotes environmental education to high school aged students. The goal is to raise awareness of the importance of achieving and maintaining a natural balance between the quality of life and of the environment.

In-class curriculum is combined with hands-on field experiences to demonstrate the role people have in important environmental issues. Envirothon is an exciting, fun way for high school students to learn about the environment and the issues facing current and future generations.

At the completion of each contest, students are tested on five subjects: soils/land use, aquatic ecology, wildlife, forestry and a current environmental issue, which changes each year.

Envirothon builds awareness. It helps show tomorrow’s leaders the positive and negative effects individual actions have on the environment. Youth who take part understand differences between renewable and non-renewable resources, understand environmental interactions and interdependencies, and know who provides information that can be used in the future for their benefit.

Students have fun while becoming environmentally aware during the competition!

How Envirothon Works

Teams of five students (grades 9-12), representing a school or organization, compete at Indiana Envirothon Contests by answering questions and by studying resource problems in each of the five environmental areas which include: soils/land use, aquatic ecology, wildlife, forestry, and a current environmental issue changed annually.

Students begin training for Envirothon by studying the resource materials that cover each natural resource area and those objectives related to them. Natural resource professionals speak to teams on a rotating basis during the Regional contests. Job experiences and information pertaining to the resource areas will be taught. The teams are given tests covering the five resource areas. **The top 3 teams** from each Regional contest will be invited to compete at the State Envirothon contest.

At the State Envirothon contest, the top 3 teams from each regional contest will be provided a natural resource situation relating to the current environmental issue. Each team shall conduct an oral presentation to a panel of judges.

The top team from the State contest will represent Indiana in the Canon® Envirothon contest. The Canon® Envirothon is a multi-day event. In 2005, the contest was held in Springfield, Missouri. Over 50 participating teams from the U.S. and Canada, merge the knowledge from their home state/provincial contests with hands-on teaching stations during this six-day contest. Written tests and presentations were again part of the contest.

Awards & Recognition

1. All participants receive participation certificates.
2. **The top three placing teams** at a regional event will receive medals for each student on the team. The top team will receive a plaque for their school.
3. At the Indiana Envirothon State contest, medals will be given to the top three placing teams in each of the following categories; written tests, oral presentation and overall. Plaques will also be given out for the top three teams and their schools. A traveling trophy will be given to the top overall team in the Indiana State contest.
4. The team representing Indiana at the Canon® Envirothon competition will have registration and housing fees paid for by the Indiana Envirothon Committee. Travel expenses are the responsibility of the winning team. Teams that place in the top ten receive prizes from Canon® and the students of the top three teams will receive scholarships.

NOTE:

All changes for the 2006 competitions from previous years or items which we would like to bring to your attention have been printed in red.

2006 Contest & Dates

Teams will be assigned to the contest site of their choice if space is available. Space availability is on a first registered first served basis.

Regional Contests

East Central ~ Wednesday, March 8th

Kuhlman Center (Wayne Co. Fairgrounds in Richmond)
Coordinator: LuAnne Holeva (luanne.holeva@in.nacdnet.net)

Southwest ~ Tuesday, March 14th

Vanderburgh County 4-H Fairgrounds (Evansville)
Coordinator: Jeri Ziliak (jeri.ziliak@in.nacdnet.net)

North Central ~ Wednesday, March 15th

Camp Buffalo (White County)
Coordinator: Darci Zolman (darci.zolman@in.nacdnet.net)

Northeast ~ Wednesday, March 29th

Merry Lea Environmental Center (Albion)
Coordinator: Nancy Brown (nancy.brown@in.nacdnet.net)

South Central ~ Tuesday, April 4

Lawrence County 4-H Fairgrounds (Bedford)
Coordinator: Rebecca Lauster (rebecca.lauster@in.nacdnet.net)

Southeast ~ Tuesday, April 6

Hanover College (Hanover)
Coordinator: Amy Carpenter (jeffswcd@yahoo.com)

2006 Indiana State Contest & Date

Minnetrissa Cultural Center (Muncie, Indiana)
Wednesday, April 26th
Coordinator: Robin Dungan (RDungan@eciheritage.net)

2006 Canon Envirothon Contest & Date

University of Manitoba (Winnipeg, Canada)
Sunday through Saturday, July 23-29
See <http://www.envirothon.org> for details

Forestry References:

1. <http://www.agcom.purdue.edu/AgCom/Pubs/> Forestry and Natural Resources Component, Forest Management Section & How to Make and Use the Tree Measuring Stick, Purdue publication. *The paper template for the tree measuring stick must be picked up from your Purdue Extension Office.*
2. <http://www.state.in.us/dnr/forestry/index.html> Select the Publications tab, resources include all Stewardship Notes & Community & Urban Forestry items that are underlined and printable.
3. <http://www.fs.fed.us/land/emterms.html> (covers forestry only)
4. **50 trees of Indiana**, T.E. Shaw, Purdue publication 4-H-15-80
Call your Purdue 4-H Extension Agent or 1-888-EXT-INFO.
5. **101 Trees of Indiana**, Marion Jackson, Indiana University Press.
6. ISBN 0-253-21694-X

Forestry Objectives:

1. Determine where landowner assistance may be obtained for tree planting, forest management and harvesting activities.
2. Define common forestry measurement terms such as basal area, board foot, chain, cord, rick, etc.
3. Identify any tree species listed in the “50 trees of Indiana” publication when given leaf, twig, bark, seed or fruit.
4. Prescribe forest management practices when given the landowner’s objective(s) or a specific production goal for the forested area.
5. Be able to prepare a tree planting plan for any of the following objectives: hardwood production, windbreak, wildlife habitat, erosion control or watershed protection.
6. Determine the number of board feet in a tree or cut log using a Biltmore stick.
7. Identify the primary & secondary uses of our common Indiana hardwoods.
8. Be able to effectively use an increment borer and interpret the sample obtained.
9. Determine the best suited tree species for a given site and demonstrate the different effective planting methods.
10. Define common forestry management terms such as canopy, climax, succession, regeneration, etc.
11. Explain & be able to diagram an example of succession for any area of Indiana.
12. Recognize common forest insect & diseases & determine tree species susceptibility.
13. Define and diagram the parts of a tree.
14. Identify leaf margins, arrangements and placement patterns in order to use a dichotomous key.
15. Develop a working understanding of best management practices pertaining to forest management.

Soils/Land Use References:

1. **Indiana Soils: Evaluations and Conservation** Extension Publication ID-72 (7-01) Available at 1-888-EXT-INFO or contact your local Purdue University Cooperative Extension Service office.
2. **Soil Science Simplified**, 4th Edition, Helmut, Kohnke & D.P. Franzmeier, ISBN 0-88133-813-3 Publisher: Waveland Press, Inc. PO Box 400, Prospect Heights, Illinois 60070 Tel. 847-634-0081

Soils/Land Use Objectives:

1. Identify assisting agencies, and have a working knowledge of the programs that assist land users with soil issues.
2. Understand the roles of the five soil forming factors (time, native vegetation, topography, parent material, and climate).
3. Define and be able to determine a soil's texture.
4. Explain why soils vary in color and where soil color determinations have practical application.
5. Differentiate between soil horizons based upon the physical characteristics of color, texture, structure, and parent material, etc. when given a soil profile.
6. Recognize blocky, platy, granular, prismatic, or columnar soil structures; and single grain or massive structure-less soil within a soil profile.
7. Describe the influence of particle size upon soil chemical activity.
8. Differentiate between native forest, native prairie, and natural wetland soils.
9. Delineate the boundaries of the Kansan, Wisconsinan and Illinoian glaciers in the Midwest.
10. Use a slope measuring device to determine the percent of slope for a given area, in order to make land use recommendations.
11. Differentiate between sheet, rill and gully erosion and identify practices to correct these problems.
12. Use a soil survey and/or soil characteristics to determine appropriate land uses.
13. Understand how soils interact with their current environments, their degradation and how to minimize this degradation, while protecting all other resources.

Aquatic Ecology References:

1. **Volunteer Stream Monitoring Training Manual** by Hoosier Riverwatch, November 2000 This manual is available for download and printing at:
<http://www.in.gov/dnr/riverwatch> (Riverwatch Training Manual only)
2. <http://ga.water.usgs.gov/edu/>
3. http://interactive2.usgs.gov/learningweb/explorer/topic_water.htm
4. <http://water.usgs.gov/outreach/OutReach.html>

Aquatic Ecology Objectives:

1. Identify assisting agencies and laws that govern Indiana waters, and develop a working understanding of the programs which benefit our water resources.
2. Define a watershed and the interaction of the components.
3. Define and determine types of non-point source and point source water pollution.
4. Recognize types of water pollution (organic, inorganic, thermal, toxic, etc.) and the impacts of each on water quality.
5. Recognize behaviors within urban, rural, agricultural, and industrial regions that affect a watershed, and if negative, determine what mitigating actions are needed.
6. Identify aquatic organisms and their indication of aquatic health.
7. Differentiate between complete and incomplete metamorphosis and be able to classify aquatic insects by group.
8. Understand how a wetland functions as an ecosystem, while also serving to improve water quality.
9. Understand the factors that influence the ecology of a river (land form, energy levels, vegetation, velocity, etc.).
10. Be able to conduct and interpret data for measuring water quality.
11. List safety factors that must be taken for sampling and conducting water quality tests.

Wildlife References:

1. **American Wildlife & Plants: A Guide to Wildlife Food Habits.**
Martin, Alexander C., Zim, Herbert S. and Nelson, Arnold L.,
Mineola, NY, USA: Dover Publications, Inc., 1951 to present reprints.
ISBN: 0486207935.
2. **<http://www.in.gov/dnr/fishwild/publications/liferies/life.htm>**
Life Series section only
3. **<http://www.agriculture.purdue.edu/fnr/html/extpubs.html>** Wildlife
section only
4. **<http://www.agcom.purdue.edu/AgCom/Pubs/>** Forestry & Natural
Resources Component , Wildlife Section only (All printable or
downloadable items)

Wildlife Objectives:

1. Identify assisting agencies, programs, and laws that govern Indiana wildlife.
2. Identify the tracks, physical characteristics, movement patterns, and eating habits of common Indiana mammals, birds, fish and herptiles.
3. Differentiate between extinct, extirpated, endangered, threatened, & species of special concern & recognize Indiana species in each category.
4. Differentiate between game and non-game species, and recognize Indiana species in each category.
5. Differentiate between habitat and niche and be able to give an example of each.
6. Describe the habitat of Indiana mammals, birds, fish and herptiles and recommend management practices for each habitat.
7. Have a working knowledge of how to approximate the age of mammals by physical characteristics.
8. Differentiate between herbivores, carnivores, and omnivores.
9. Understand and illustrate a food web or energy flow diagram containing examples of Indiana producers, consumers, and decomposers.
10. State the distinguishing characteristics of the mammal, bird, fish and herptile Kingdoms.
11. Determine whether a snake is poisonous or non-poisonous.
12. Define the theory of natural selection and recognize instances where wildlife has adapted to changes in the environment.
13. Have a working understanding of migration pathways of migratory birds as it relates to Indiana.

Current Issue 2006 “Water Stewardship in a Changing Climate”

This topic was chosen by the 2006 hosting committee and the Canon® Envirothon Executive Committee. The Current Issue objectives and resources listed below will be used to construct the Indiana Regional and State tests as well as for the Canon® Envirothon in Manitoba, Canada.

For an on-line listing of these objectives, go to the Canon® website at: <http://envirothon.org/competition/Canon2006/index.php>

The Current Issue objectives are:

1. Understand how changes in climate will impact both the quantity and quality of water available to human and ecological systems.
2. Understand the science and modeling of climate change.
3. Discuss water stewardship actions that could be undertaken now in anticipation of climate change impacts on water resources.
4. Discuss mitigation opportunities for water stewardship in a changing climate.

The Current Issue references are: (all websites begin with http://)

- * www.thewaterpage.com/us_climate_change_report.htm
- * www.climatescience.gov/Library/stratplan2003/final/ (chapters 4-6)
- * www.gov.mb.ca/est/climatechange/pdfs/cc_primerdoc.pdf
- * www.climatechange.gc.ca/english/climate_change/
- * www.climatechange.gc.ca/english/affect/pdf/manitoba.pdf
- * www.climatechangeconnection.org/pages/subpages/effects_ccmb.html
- * www.adaption.nrcan.gc.ca/posters/home-accueil_en.asp
- * www.ccme.ca/assets/pdf/cc_ind_full_doc_e.pdf
- * www.lakewinnipegresearch.org/pdfs/LWRC2004.pdf
- * www.gov.mb.ca/waterstewardship/cleanwater/clean_water_guide.pdf
- * www.ec.gc.ca/climate/overview_science-e.html
- * www.pacinst.org/reports/water_fact_sheet/
- * www.ucowr.siu.edu/updates/pdf/V112_A5.pdf
- * www.acia.uaf.edu/pages/overview.html (Impacts of a Warming Climate)
- * adaptation.nrcan.gc.ca/app/filerepository/F80B56D9915F465784EBC57907478C14.pdf (Climate Change Impacts and Adaptation: A Canadian Perspective)
- * chemistry.beloit.edu/Warming/pages/begconkp.html
- * www.grida.no/climate/ipcc_tar/wg2/159.htm
- * www.davidsuzuki.org/files/WWFglobal200_complete1.pdf
- * adaptation.nrcan.gc.ca/app/filerepository/511B461E4DF64FCBA4C4ED6578050A74.pdf (Climate Change Impacts and Adaptation: A Canadian Perspective Water Resources)
- * www.ems.org/climate/pentagon_climatechange.pdf
- * www.ucsusa.org/global_environment/global_warming/page.cfm?pageID=497
- * amap.no/acia (Arctic Climate Impacts Assessment, Key findings 5-7)
- * *Climate Change & Biodiversity*, edited by Thomas E Lovejoy & Lee Hannah, Yale University Press, 2005.

Rules & Information

1. Students in grades 9-12, as of the 2005-2006 school years, are eligible to be contestants.
2. Teams must consist of five contestants. One alternate can be brought per team.
3. Schools or organizations may participate in only one regional competition annually.
4. Registration fee is \$50 for each team. Fee covers lunches for five (5) students and one (1) advisor. Each additional person brought will be charged \$5 fee per person.
5. A school or organization may send up to two (2) teams to regional competition. Teams from the same school must participate in the same regional competition.
6. Coaches may accompany their teams, during the resource presentations.
7. Lunch will be provided. A pre-designated time will be allowed at each station for resource presentations.
8. Notes may be taken during each resource presentation, but will be collected prior to the testing period. Do not bring audio equipment, backpacks, clipboards, pencils or paper. All needed materials will be provided on-site.
9. Contest will consist of 20 questions per test. (100 questions total)
10. All tests will be given at one time after teams have rotated through all five (5)-resource presentations.
11. Test questions will cover information in the suggested resource materials listed.
12. Team members work together to answer test questions, submitting one completed test per team for each resource subject.
13. With respect to test questions, the decision of the Indiana Envirothon Test Committee is final.
14. Regional competitions are limited to the first 25 teams who register by post-mark per site.
15. The top three teams in each regional competition are eligible to compete at the state competition. **In case of a tie for 3rd place, a fourth team will be eligible to participate in the state contest.** In case of a multiple tie for 3rd place, a randomly selected test question will be used to determine the advancing team.

16. In the event of a tied score, the team with the highest score in a pre-determined resource area will be considered the winner.
17. The state winner is eligible to compete at the Canon® Envirothon. If the state winner cannot participate, the second place team may represent Indiana at the national competition.
18. In the event a procedural dispute or question that is not covered in this information or in its addendum, the issue will be decided by the Indiana Envirothon Appeals Committee.
19. Participants must sign a code of conduct.
20. Photo and medical releases must be received the day of contest.

Indiana Academic Standards

The following Indiana Academic Standards are taken into consideration in the construction of Indiana's Envirothon Competition and are covered in part or fully at each contest.

Principles of Earth and Space Science

ES.1.10, ES.1.11, ES.1.19, ES.1.20, ES.1.21, ES.1.22, ES.1.25, ES.1.26, ES.1.27, ES.1.29

Principles of Environmental Science

Env.1.1, Env.1.2, Env.1.3, Env.1.4, Env.1.5, Env.1.6, Env.1.7, Env.1.8, Env.1.9, Env.1.10, Env.1.11, Env.1.12, Env.1.14, Env.1.15, Env.1.18, Env.1.19, Env.1.20, Env.1.21, Env.1.23, Env.1.25, Env.1.26, Env.1.27, Env.1.28, Env.1.29, Env.1.30, Env.1.31, Env.1.34, Env.1.35

Principles of Biology

B.1.15, B.1.16, B.1.17, B.1.18, B.1.19, B.1.29, B.1.31, B.1.32, B.1.34, B.1.35, B.1.36,

Indiana Envirothon Committee Members

PRESIDENT ~ Darci Zolman

217 E Bell Drive
Warsaw, IN 46582
574-267-7445 extension 3
darci.zolman@in.nacdn.net

VICE PRESIDENT ~ Rebecca Lauster

*Chairperson of Appeals Committee
1350 Woodside Dr.
Brownstown, IN 47220
812-358-2367 extension 3
rebecca.lauster@in.nacdn.net

SECRETARY ~ Leah Harden

860 S. Prairie Ave, Suite 1
Frankfort, IN 46041
765-659-1223 extension 3
leah.harden@in.nacdn.net

TREASURER ~ Norma Duckworth

12445 Highway 41 North
Evansville, IN 47725
812.867.0582 extension 3
norma.duckworth@in.nacdn.net

Indiana Envirothon
Norma Duckworth, Treasurer
12445 Highway 41 North
Evansville, IN 47725