



ENVIROTHON

Team Handbook

2015-2016

NOVA SCOTIA

Nova Scotia Envirothon

Last Revised December 2015

TEAM HANDBOOK

2015 – 2016

Introduction

The Nova Scotia Envirothon program was established in 1993 to challenge high school students and educators to look at the natural resources our great province has to offer, in a combined classroom and hands-on atmosphere. The four main areas of study for the program include forestry, soils and land use, wildlife and aquatic ecology. Each year there is a fifth ‘current environmental issues’ topic selected (examples of past topics include: Local/Sustainable Agriculture, Acid Rain and Biodiversity in a Changing World). *The current environmental issues topic for 2016 is Invasive Species.*

History

Envirothon is North America’s largest and fastest growing environmental education program. The program was first established in Pennsylvania, in 1979, under the name Environmental Olympics. It was sponsored by The Pennsylvania Association of Conservation Districts – an organization that works to enhance locally led efforts that support the wise use of the state’s natural resources. The following year the name was shortened to Enviro-Olympics and over the next several years the program continued to grow. In June 1984, the first Pennsylvania State Enviro-Olympics were held, which saw six teams compete. The following year, at the second Pennsylvania State Enviro-Olympics, 15 teams competed. It was not until 1988 that the program got its current name: Envirothon. Massachusetts and Ohio were the next two states to get involved, with all three states competing at the first National Envirothon in October of 1988.

By the early 1990’s a National Envirothon committee was formed and the program was spreading all over the states. In 1991, at the 4th National Envirothon, Nova Scotia was proud to be the first Canadian team to participate. In 1997, for the 10th anniversary of the Envirothon, two other Canadian provinces (Manitoba and Ontario), joined Nova Scotia at the National competition in its birth-state of Pennsylvania. The following year the program received a very generous sponsorship proposal from Canon, USA, which provided the National Envirothon name change to the Canon Envirothon.

In 2000, Envirothon lived up to the moniker of being North America’s largest high school environmental and natural resources competition by holding its first event in Canada. Nova Scotia was thrilled to be the first Canadian host. The 13th annual Envirothon saw 49 teams, from 41 states and 8 provinces, compete at Acadia University in Wolfville.

The 2002 Canon Envirothon was not only a milestone because it was the first time more than 50 teams were expected to participate (only 49 ended up competing), but also because it was the first time that the Nova Scotia team placed in the top ten. The following year in Maryland, Nova

Scotia placed in the top ten again. Both times, the team representing Nova Scotia was Digby Regional High School. At the time, the Digby team was advised by Greg Turner and Anne Littlewood; over ten years later, Greg is still proud to be co-advising the Digby team.

In 2006, the Canon Envirothon came back across the border to Canada and was held at the University of Manitoba in Winnipeg. Five years later, in 2011, the competition returned to Canada once again, being hosted in Sackville, New Brunswick. The 2012 Canon Envirothon celebrated the 25th anniversary of the program, held in Pennsylvania which was very appropriate since the program began in Pennsylvania.

Due to sponsorship changes in 2013, the program’s name changed once again, to the North American Envirothon. The 2013 North American Envirothon was held in Bozeman, Montana with 55 states and provinces participating. In the latter half of 2013, the program saw more sponsorship changes, eventually leading to its current delivery and coordination by the National Conservation Foundation.

Unfortunately, due to funding issues, the 2014 North American Envirothon was cancelled. The National Conservation Foundation took this opportunity to focus on the re-organization of the program for a stronger future. The 2015 North American competition will be held in Springfield, Missouri; this will be the second time Missouri has hosted the North American event.

The Nova Scotia Envirothon program began in 1993 and the first team to represent Nova Scotia the North American level was Cobequid Education Centre (Truro). Over the next few years the program continued to grow. From 1993 to 1998 the Provincial Envirothon was held at the National Resourced Education Centre in Musquodoboit. In 1999 the event moved to Lunenburg and has seen been moving around the province over the past decade and a half. When Nova Scotia hosted the 2000 Canon Envirothon, Digby Regional High School proudly represented Nova Scotia at the competition.

Year	North American Competition Location	Current Issues	School Representing Nova Scotia
1998	Michigan		Digby Regional High School
1999	California	Wildfire Management	Digby Regional High School
2000	Nova Scotia	Wetland Management	Digby Regional High School

Year	North American Competition Location	Current Issues	School Representing Nova Scotia
2001	Mississippi	Urban Non-Point Source Pollution – Household/Home Site	Sir John A. MacDonald High School
2002	Massachusetts	Introduced Species and Their Effects on Biodiversity	Digby Regional High School
2003	Maryland	Agricultural Land Conservation & Preservation	Digby Regional High School
2004	West Virginia	National Resources Management in Urban Environments	Queen Elizabeth High School
2005	Missouri	Managing Cultural Landscapes	Digby Regional High School
2006	Manitoba	Water Stewardship in a Changing Climate	Digby Regional High School
2007	New York	Alternative/Renewable Energy	Digby Regional High School
2008	Arizona	Recreational Impacts on Natural Resources	West Kings Regional High School
2009	North Carolina	Biodiversity in a Changing World	West Kings Regional High School

Year	North American Competition Location	Current Issues	School Representing Nova Scotia
2010	California	Protection of Groundwater Through Urban, Agricultural & Environmental Planning	Northumberland High School
2011	New Brunswick	Salt & Freshwater Estuaries	Central Kings
2012	Pennsylvania	Non-Point Source Pollution / Low Impact Development	Central Kings (went in place of Oxford Regional High School)
2013	Montana	Sustainable Rangeland Management	Central Kings Regional High School
2014	Cancelled	Sustainable Agriculture / Locally Grown	Northumberland High School
2015	Missouri	Community / Urban Forestry	Annapolis West Education Centre

Quick Facts

- The Envirothon is a hands-on natural science academic program that challenges and engages students to think critically about the natural world around them and the role they play in it.
- Envirothon is open to students in grades 9-12, with a team consisting of 6* students.
- Each team must have one or more Advisors.
- Areas of study include Forestry, Wildlife, Aquatic Ecology, Soils and Land Use and Current Environmental Issues.
- Each year a new current environmental issues topic is selected; *the 2015 topic is Invasive Species*.
- Learning outcomes are established for each area of study and study resources and tools are provided.
- Teams are encouraged to work with resource professionals to learn about the various areas of study.
- An annual provincial competition is held each spring.
- Competition structure includes four written tests (forestry, wildlife, aquatic ecology and soils and land use), completed as a team, and one team oral presentation (current environmental issues).
- The provincial competition is normally held over a two day period; teams are provided accommodations and meals.
- The winning provincial team advances to the North American competition, which is held during the summer.

As of November 2015, Nova Scotia teams are allowed to consist of up to 6 students. **The team which advances to the North American Envirothon will only be allowed to consist of 5 students. This change was introduced because it is common that not all students on the advancing team are available to attend the North American event. The hope is that by allowing a team of 6 at the provincial event, 5 students will be available for the North American event, allowing Nova Scotia to send a full team.*

Mission & Goals

Mission:

The mission of the Nova Scotia Envirothon is to develop knowledgeable and dedicated citizens who have an understanding of natural resources. The program will enable them to be prepared and willing to work toward achieving and maintaining a life that is environmentally, economically, and socially sustainable.

Goals:

1. To promote a desire to learn more about the natural environment and equip students with the knowledge and skills needed to apply the basic principles and practices of resources management and ecology to complex environmental issues.

a) Students should be able to demonstrate a basic knowledge and analyze problem-solving activities of the following key areas: forestry, wildlife, soils and land use, aquatic ecology and current environmental issues.

2. To promote stewardship of natural resources and to encourage the development of the critical thinking, cooperative problem-solving and decision-making skills required to achieve and maintain an environmentally, economically and socially balanced society.

a) Students should be able to take into consideration environmental, economic and social factors when identifying and assessing environmental issues.

b) Students should be able to investigate issues through comprehensive listening, collecting, organizing and analyzing information, framing appropriate questions, using resources and technologies and critically examining information from various sources.

c) Students should be able to assess the nature of information from various viewpoints and evaluate their implications.

d) Students should be able to evaluate alternative solutions to various issues with respect to the environment, economy and society.

e) Students should be able to identify their own position on various issues and be able to back their position with balanced information, critical analysis and careful synthesis.

f) Students should be able to evaluate the interactions of proposed solutions to various issues with environmental, economic and social factors

3. To provide students with experience in environmentally-oriented activities, enabling them to becoming environmentally-aware, action-oriented citizens.

- a) Students should have knowledge of a wide range of action strategies involved in seeking solutions to environmental problems.
- b) Students should have knowledge of agencies and organizations that can be used as resources to seek solutions to environmental problems.
- c) Students should be able to evaluate the impact of their own actions affecting a particular environmental problem and devise alternative courses of action toward mitigating the problem.
- d) Students should be able to work independently and/or collaboratively to solve environmental problems.

Program Overview

Nova Scotia Envirothon is coordinated by the Nova Scotia Forestry Association (NSFA) and is supported by private and public sponsorships. Envirothon teams practice throughout the school year in order to prepare for the annual competition, which is generally held during the month of May. Envirothon teams from across Nova Scotia compete for the provincial title and for the right to represent Nova Scotia at the annual North American Envirothon competition. The North American Envirothon is held during late summer and the location varies from year to year; ***the 2016 North American Envirothon will be held in Peterborough, Ontario.***

Provincial Program Structure:

Generally, Envirothon teams consist of six (6) students in grades 9-12, enrolled at the same school. Please note that as of November 2015, Nova Scotia teams are allowed to consist of up to 6 students. The team which advances to the North American Envirothon will only be allowed to consist of 5 students. This change was introduced because it is common that not all students on the advancing team are available to attend the North American event. The hope is that by allowing a team of 6 at the provincial event, 5 students will be available for the North American event, allowing Nova Scotia to send a full team. Teams should have at least one team advisor. Advisors can be teachers, parents, resource professionals, guidance counsellors, etc. (for more information about becoming an advisor, see Advisor Responsibilities, Pg. 18).

Envirothon teams can be formed as early as mid-September or as late as a few months before the competition. Ideally, teams should form early in the school year to ensure they have ample time to prepare. ***In 2016, teams have until March 31st to register.***

Throughout the school year, teams will be invited to Envirothon Workshops, where resource professionals will provide information on the main study areas. ***In 2016 there will be a variety of workshops offered in the winter and spring.*** Teams are encouraged to attend as many workshops as they wish.

The Provincial competition generally spans two days. For the cost of registration, teams (6 students + 2 advisors) are given accommodations, meals and an Envirothon t-shirt. Teams are responsible for the costs associated with travelling to and from the competition.

Competition Structure:

During the competition, student's theoretical and field knowledge is put to the test through a series of 'field stations'; one in each of the four main areas of study: forestry, soils and land use, wildlife, and aquatic ecology. At each field station, teams are required to complete a written test. Envirothon testing is not only designed to increase each student's level of environmental knowledge, but also encourages the development of skills needed to analyze and apply information. Most test questions involve much more than rote memorization. They often incorporate questions that involve hands-on skills and encourage students to apply their knowledge to site-specific problems.

Typically, the time given at each station is 45-60 minutes. As teams rotate through the various field stations, they will encounter a variety of test formats. Most tests will include some type of identification; for example teams will be asked to identify wildlife tracks, macro-invertebrates, tree leaves, soil horizons, etc. Other questions may be in multiple choice, fill in the blanks or short answer format. At each of the field stations, students will receive a brief introduction to the specific site from a resource professional that has assisted with writing the station test.

For the current environmental issues topic, teams are presented with a scenario and are asked to address and answer questions related to the scenario in the form of a group oral presentation. Historically, teams were given the scenario upon arrival at the competition and given a set amount of time to prepare posters and their presentation. This is how the current issues section of the North American completion is structured. In 2014, teams were given the scenario a few weeks before the competition so that presentations could be done prior to arrival at the competition. Giving the scenario out in advance allowed students to research and prepare for this part of the competition. *In 2016, teams will be given the scenario two weeks prior to the competition.*

Further information, such as objectives and study guides, for the four main topics and the current issues topic can be found throughout this study guide.

Envirothon Committee and Volunteers:

Much of the success of the Nova Scotia Envirothon is attributed to the high level of commitment and enthusiasm that committee members and volunteers give to the program each year. The purpose of the Envirothon Committee is to oversee the Nova Scotia Envirothon program, providing a long-term vision for the program and oversee the organization of the provincial competition and workshops. The committee is comprised of volunteers who write the field tests, oral scenarios, develop study materials and assist with developing workshops. These activities require a number of site visits throughout the year to ensure that questions are site specific and that logistical details are taken care of. Committee members are on hand during the competition and workshops to assist with supervising field stations, judging oral presentations and marking tests.

About the Nova Scotia Forestry Association:

Originally established in the early 1940's, the Nova Scotia Forestry Association (NSFA) was formed to help promote wise management and conservation of Nova Scotia's forests through education and communication. Over the past 80 years, the NSFA has evolved - we no longer see the forest as just trees; we take into account wildlife, soils, watercourses and other vegetation, and strive to promote wise management and conservation of the whole NS forest environment. The Nova Scotia Envirothon program is the NSFA's longest running program. The NSFA's goal is to ensure that natural resources education, with a specific focus on forestry, is available to every student. The NSFA wants to provide young Nova Scotians with exposure to forestry and natural resources education, which will instill a knowledge and interest that will enable them to grow up contributing to a society that is prosperous, productive, healthy and economically sustainable.

NOVA SCOTIA ENVIROTHON RULES

Revised December 2016

The Nova Scotia Envirothon competition will be conducted under the following rules, as provided by the Nova Scotia Envirothon Committee.

Eligibility Requirements:

1. The Nova Scotia Envirothon Competition is open to students enrolled in grades 9 through 12 or equivalent home school ranking in the school year immediately preceding the current competition. Ninth grade students attending a junior high/middle school may only participate if the junior high/middle school is a feeder to the named high school.
2. A team must represent a single school. Team Advisors may be teachers, guidance counsellors, parents, community members, professionals, etc. Advisors cannot be active members of the Nova Scotia Envirothon Committee. Students attending a school without an Envirothon Team may be granted permission by the Nova Scotia Envirothon Committee to join another school's team.
3. Each team will consist of six (6) students from the same school, home-schooled group, or local organization. In the event of an emergency that would prevent a registered six-member team from competing, the Nova Scotia Envirothon Committee will allow a team to compete with fewer than six members. Emergency substitutions can be made if approved by the Nova Scotia Envirothon Committee. Please note that as of November 2015, Nova Scotia teams are allowed to consist of up to 6 students. The team which advances to the North American Envirothon will only be allowed to consist of five (5) students. This change was introduced because it is common that not all students on the advancing team are available to attend the North American event. The hope is that by allowing a team of six at the provincial event, five students will be available for the North American event, allowing Nova Scotia to send a full team.
4. Team registration forms are due by the date set by the NSFA. All team members, advisors, volunteers, guests and Nova Scotia Envirothon members must sign a Nova Scotia Envirothon Code of Conduct to be eligible to participate.
5. Advisor(s) must accompany their team to the provincial competition and shall not have contact with their team during the testing portion of the competition. Contact between Advisor(s) and their team during the testing portion of the competition is a violation of the rules and subject to penalty.
6. Each Team must be accompanied by adult team advisor(s) and/or chaperone(s).
 - a. Each team must arrange for an adult male to chaperone male team members and an adult female to chaperone female team members.
 - b. Team members and chaperones/advisors are required to participate in the lodging and meal service provided by the Nova Scotia Envirothon.
 - c. Advisors/chaperones are responsible for student's behaviour and actions during the entirety of the Nova Scotia Envirothon competition. Nova Scotia Envirothon will not be responsible for improperly chaperoned teams.

- d. No students or advisors will be allowed in the opposite gender's designated housing area between the hours of 11:00 pm and 7:00 am.
- 7. No team members or advisors are allowed to leave the competition site without first notifying the Nova Scotia Envirothon Coordinator.
- 8. Medical needs, emergencies and student conduct during the competition are the responsibility of the Advisor/Chaperone during the competition. Please have students share medical information such as allergies or medication needs with advisors before leaving for the event. The competition should be considered a school-sanctioned field trip. Check with the school about appropriate permission slips or liability waivers that apply to field trips for your school system.

Competition Rules:

- 9. During the competition, teams may only carry the itinerary, writing tools, water bottles, medical/health supplies and snacks (Calculators, clipboards and other items will be provided as needed at the testing station.)
- 10. No electronic, battery-powered, or solar powered equipment (i.e., cell phones) may be used by or be in the possession of the team members during the field component or oral presentations.
- 11. Cheating in any form will not be tolerated and will result in disqualification.
- 12. Team members will work together to answer test questions, submitting one (1) completed test to the station judge(s) before moving to the next station. Teams will be given 45-60 minutes at each field station. The exact allowed time will be announced before the competition begins.
- 13. Testing sites:
 - a. Any team, team member, team advisor/chaperone, or resource person associated with a team discovered on, near, or around the training site, test site or testing stations prior to the competition may be subject to immediate disqualification
 - b. Any team, team member, team advisor/chaperone, or resource person associated with a team discovered on, near, or around the test site or testing stations outside scheduled times during the competition may be subject to immediate disqualification
- 14. Any concerns related to testing should be brought to the immediate attention of the Lead Judge.
- 15. Any infraction of the Nova Scotia Envirothon Rules may result in disqualification and dismissal from the event and host site.

Oral Presentations:

- 16. Each team will be assigned a time slot for their presentation. Failure to arrive on time will result in a score of zero.
- 17. The Current Topic Scenario will be sent electronically to all teams on **Thursday, April 21st** at Noon. Teams must prepare a completed presentation, in response to the challenge outlined in the scenario, prior to arriving at the competition.

- 18.** Teams are encouraged to use a robust mix of resources in preparing their presentation, including reference material sent with the scenario, school library resources, the internet, expert interviews etc.
- 19.** Teams should also prepare and bring to the competition, visual aid poster(s) to enhance their presentation (note the following poster regulations).
- 20.** Teams may only bring the visual aid posters and cue cards (see below) to the presentation.
- 21.** Visual Aid Posters:
 - a. Electronic audio-visual aids are NOT permitted
 - b. Only the following items can be used to make your visual aid poster(s):
 - c. Two (2) Pieces of Poster Board; any size; both fronts and backs can be used
 - d. Computer Typed Documents (Minimum allowable font size is 75; which should be about 1" in height)
 - e. Markers, Coloured Pencils, Pens
 - f. Adhesive of any Kind (Glue / Tape)
 - g. Construction Paper, Coloured Paper, Scrapbook paper
 - h. Ruler
 - i. Scissors
- 22.** During the presentation team members may use cue cards (max size: 6" x 4") as memory aids. Please note that presentation skills are evaluated as part of the judging, and reading verbatim from the cards is less effective than a clear oral presentation of your points.
- 23.** Presentations will be ten (10) minutes maximum, followed by five (5) minute question period from the judges.
- 24.** During presentations, a five (5) minute warning card will be shown half way through the presentation and a two (2) minute warning card will be shown when there is two minutes left in the allowable 10 (ten) minute time period.
- 25.** All team members participating in the written (field testing) component of the competition must participate in the oral presentation, unless special permission has been granted by the Lead Judge.
- 26.** All team members must contribute equally with the verbal delivery of the presentation. Equal contribution will be left to the discretion of the judging panel. Each team member will be given up to 2 points for equal participation in the presentation.
- 27.** During oral presentations, all team members must wear the current Envirothon T-shirt.
- 28.** No contact is to be made between the team advisors/chaperones/guests and the judges during the presentation.
- 29.** During the preliminary presentation rounds, advisors/chaperones may observe and/or record only the team they have accompanied to the competition, with the permission of the team.
- 30.** The North American Envirothon presentation score sheet will be used at the provincial competition.
- 31.** The teams with the top three overall scores from the written test portion of the competition will advance to the final round (when more than 10 teams are competing).*The scores from the final round will be averaged with the teams' first round scores to determine the winner of the 'Current Issues' award only. All preliminary round score will be used to determine the overall competition winner.

Scoring:

- 32.** Competition scoring for the Nova Scotia Envirothon will be as follows:
 - a. Each of the four field station tests will comprise 1/6th of the total score. (i.e. 100 points each)
 - b. Preliminary oral presentation will comprise 2/6ths of the total score. (i.e. 200 points)
 - c. Tie Breakers shall be broken as follows: Current Issue score; Soils/Land Use score; Aquatic Ecology score; Forestry score, and Wildlife score.
 - d. The final team placements are based upon the 4 field station test scores and the preliminary oral presentation score (total possible score is 600 points).
- 33.** Awards will be presented to teams who earn the highest score in each of the field stations (forestry; aquatics; wildlife; soils and land use; and aquatic ecology) and the team with the highest score in the oral presentations*.
- 34.** The Nova Scotia Envirothon trophy will be presented to the top overall scoring team (total score comprising the total of each of the field stations scores plus the score from the preliminary oral completion).
- 35.** The first place team will represent Nova Scotia at the North American Envirothon. In the event that the first place team is unable to attend, the second place team will represent Nova Scotia at the North American Envirothon. The NSFA will cover up to 75% of costs associated with attending the North American Envirothon.

Concluding Rules and Regulations:

- 36.** The Nova Scotia Envirothon Rules are subject to change pending approval by a majority of Nova Scotia Envirothon Committee members. Changes will be provided in advance to all teams and advisors.
- 37.** Nova Scotia Envirothon Code of Conduct signed by each student and advisor is an extension of the Nova Scotia Envirothon Rules.
- 38.** Any violation of these rules will result in disciplinary action or disqualification.
- 39.** Decisions of the Nova Scotia Envirothon Lead Judge, as applicable, are final.

NOVA SCOTIA ENVIROTHON

Rules and Regulations Signature Requirements

Sign below if you have read and clearly understand each of the above stated rules and regulations. A signed form is required in order to complete your registration for the Nova Scotia Envirothon competition.

TEAM ELIGIBILITY (1 COMPLETED SIGNATURE FORM PER TEAM)

School: _____

Advisor/Chaperone Name

Signature

Advisor/Chaperone Name

Signature

Team Member Name

Signature

Team Member Name

Signature

Team Member Name

Signature

Team Member Name

Signature

Team Member Name

Signature

Team Member Name

Signature

NOVA SCOTIA ENVIROTHON

Rules and Regulations Signature Requirements

Sign below if you have read and clearly understand each of the above stated rules and regulations. A signed form is required in order to complete your registration for the Nova Scotia Envirothon competition.

ADULT (NOVA SCOTIA ENVIROTHON REPRESENTATIVES, GUESTS, VOLUNTEERS) ELIGIBILITY
(1 COMPLETED SIGNATURE FORM PER ADULT) COPY ADDITIONAL FORMS AS NEEDED

Print Name

Signature

Title

NOVA SCOTIA ENVIROTHON

Student Code of Conduct

1. Envirothon participants have an excellent reputation for honesty, sportsmanship and integrity. Your conduct at the any Envirothon function should make a positive contribution to the reputation that has been established by those who participated before you.
2. The Nova Scotia Envirothon and its participants operate on a non-discriminatory basis without regard to race, color, religion, national origin, sex, age marital status or physical/mental challenges.
3. Student conduct is the responsibility of the student and his/her advisor / chaperone.
4. Your behavior at all times should be such that it reflects credit to yourself, your school and the Envirothon.
5. Participants are expected to attend all general sessions and other scheduled activities. Please be prompt and show respect to those involved.
6. Students are expected to observe the designated curfew.
7. Students are to report any accident, injury or illnesses to their advisor/chaperone and or the Nova Scotia Envirothon Coordinator.
8. If a student is determined to be responsible for stealing, vandalism, or fighting, the individual and his/her parents will be expected to pay any and all damages.
9. The following are strictly prohibited at any and all Envirothon functions; student participants may not be in possession of or use:
 - a. Tobacco products (including smokeless)
 - b. Alcoholic beverages
 - c. Illegal/illicit drugs
 - d. Weapons, including firearms and knives.
10. If a student(s) is determined to be cheating or disregarding the Nova Scotia Envirothon Rules and or this Code of Conduct he/she will be subject to stringent disciplinary action and may be sent home at their own/parents expense. Parents will be notified.
11. Any violation of these rules and regulations will result in disciplinary action or disqualification.

Code of conduct declaration

I, _____ (Student's name, please print) have read, understand and agree to abide by the Code of Conduct of the Nova Scotia Envirothon and I understand that such adherence is a condition of my participation.

Signed this _____ day of _____, 20_____.

_____ (Student Signature)

_____ (Parent/Guardian Signature)

NOVA SCOTIA ENVIROTHON

Adult Code of Conduct

(Advisors/Chaperones, Guests, Nova Scotia Envirothon Representatives and Volunteers)

1. Envirothon participants have an excellent reputation for honesty, sportsmanship and integrity. Your conduct at any Envirothon function should make a positive contribution to the reputation that has been established by those who have participated before you.
2. The Nova Scotia Envirothon and its participants operate on a non-discriminatory basis without regard to race, color, religion, national origin, sex, age marital status or physical/mental challenges.
3. Adult participants conduct is the responsibility of each individual at the event.
4. Your behavior at all times should be such that it reflects credit to yourself, your school / organization, and the Envirothon.
5. Advisors, Envirothon representatives, volunteers and guests are expected to attend all general sessions and other scheduled activities. Please be prompt and show respect to those in the audience and on stage.
6. Adult participants and guests are to report any accident, injury or illnesses to the Nova Scotia Envirothon Coordinator
7. Adults are requested to observe the designated curfew.
8. If an adult participant or guest is determined to be responsible for stealing, vandalism, or other activities that are in conflict with the Nova Scotia Envirothon rules will be asked to leave the competition at their own expense and expected to pay for any damages.
9. The following are not to be consumed in the presence of students/minor guest participants and only in designated locations decided by the host committee:
 - a. Tobacco products (including smokeless)
 - b. Alcoholic beverages
10. NO Possession or USE of the following:
 - a. Illegal/illicit drugs
 - b. Weapons
11. If an Adult participant or guest is determined to be disregarding of the Nova Scotia Envirothon Rules and Regulations and/or Code of Conduct he/she will be asked to leave the event at their own expense.

Code of conduct declaration

I, _____ (Adult participant's name, please print) have read, understand and agree to abide by the Code of Conduct of the Nova Scotia Envirothon and I understand that such adherence is a condition of my participation.

Signed this _____ day of _____, 20_____.

_____ (Signature)

Advisor Responsibilities

Teams Advisors play a vital role in the Envirothon program. An Envirothon advisor can be any adult who is interested in helping students develop leadership skills while becoming environmentally aware citizens. Advisors could be teachers, guidance counsellors, parents, community members, professionals, university/college students etc.

Advisors are responsible for organizing the team, motivating the students, ensuring the team is aware of the rules and regulations and program learning outcomes, and helps the team study and prepare for the competition. It is not necessary that advisors be knowledgeable in the areas of study. One of the unique aspects of the Envirothon program is the use of Resource Professionals to provide training to the Envirothon teams in a hands-on setting. In fact, a lot of Advisors find that they enjoy learning alongside their students. The program strives to offer support and assistance to all Advisors and teams to ensure their Envirothon experience is positive.

It is understandable that some potential advisors worry about the time commitment involved with advising a team. Fortunately, the Advisor's main role is to provide guidance and oversee their team, while the teams can be largely driven by the students. Consider delegating the task of Captain to one team member and encourage them to plan study sessions with their fellow teammates. Also, teams can have more than one individual advising a team, which would help to share the time commitment.

Students must be accompanied by 1-2 adult chaperones at the Provincial competition and the North American competition, should they advance. As stated in the Nova Scotia Envirothon Rules and Regulations, each team must arrange for an adult male to chaperone male team members and an adult female to chaperone female team members. Team members and chaperones/advisors are required to participate in the lodging and meal service provided by the Nova Scotia Envirothon. Advisors/chaperones are responsible for student's behaviour and actions during the entirety of the Nova Scotia Envirothon competition. Nova Scotia Envirothon will not be responsible for improperly chaperoned teams.

Recruiting Students:

When recruiting students it's important to be fully inclusive; Envirothon students get involved for various reasons. Some students may be interested in pursuing a post-secondary education or career in the natural resources field, while others just want the chance to discover the natural world around them. Some students may be interested in learning about the environment or learning in a hands-on outdoor atmosphere. Sometimes students are seeking the opportunity to work on a team with other students or looking for an extracurricular activity to use as a resumé or post-secondary application builder. Regardless of their reason for getting involved, Envirothon students are always happy with their decision to do so.

Helpful Hints

These tips are designed to help teams prepare for the Envirothon by encouraging teamwork and a multidisciplinary approach to problem solving.

- There are five subject areas and five team members. A team could assign each member an area of primary concentration and secondary concentration. This way, each team will have two members knowledgeable about, for example, forestry. The information can then be shared with others in practice sessions. Remember, no resource professional can know everything. Teamwork is essential in the real world. Learning how to work as a team is essential to your success in the Envirothon.
- Make sure all team members are familiar with basic ecology terms and current environmental issues. They should also develop an understanding of the interrelationship among topic areas and how the management of one resource may affect another.
- This guide contains sections on each of the five study areas. The learning objectives provide a detailed outline of the kinds of information teams are expected to know. Based on these objectives, students can develop a strategy for studying each topic.
- Study materials for the Envirothon are provided on the Envirothon website. There are also lists of resource professionals available to help teams. Contact us for more information.
- Advisors are encouraged to use the resource materials to develop environmental units for their classrooms. This will expand the Envirothon Program to include more students than just those on the team.
- Forming a social media group page for a team is a great way to share dates, news, resources, etc.

Oral Presentation Tips

Being able to orally communicate is crucial in addressing environmental problems and issues, particularly in situations where collaborative efforts are required to develop practical solutions and affect change. The Nova Scotia Envirothon strives to challenge and promote the development of oral communication skills in each student participant, which is why the oral presentation is emphasized as a major component of the total competition score.

How to prepare the best possible presentation:

Do your homework. Nobody can give a good presentation without putting in some serious time preparing their work. Although many gifted speakers may look as if they're just talking off the cuff, saying whatever comes to mind, they have likely spent a considerable amount of time figuring out what they're going to say. You should too.

Know what the judges are looking for. Familiarize yourself with the Nova Scotia Envirothon Judges' Scoring Sheet for Team Presentations. If you know the sorts of things they are looking for, you can make sure you deliver them.

Play the parts. Good presentations are structured in sections. Organize your points into a few main parts and tell your audience what these parts are – both before and as you go through your presentation.

Do many dry runs. Practice does make perfect and this can help with both your timing and your manner of presentation. Be sure to make mental notes on if you went too long or if you got nervous or stuck - some people find it useful to have friends pretend to be the audience.

Look presentable. No need to wear a suit or anything fancy, but it's hard for people to take a presentation seriously when you look like someone who just rolled out of bed.

Talk - don't read. Nobody enjoys seeing a speaker reading stiffly from a piece of paper. Try to talk from point-form notes and look down at them only occasionally. It's less important that you capture the text word for word than that you present the main ideas in a natural and relaxed way. (Your practice sessions should help you here, since they enable you to better remember what you want to say.)

Take it slow. The single biggest mistake inexperienced speakers make is going too fast. Remember that your audience is hearing the material for the first time and isn't nearly as familiar with the topic as you are.

Don't bury the crowd. Including massive numbers of quotations or unfathomable amounts of data can overwhelm even the most attentive audience.

Be yourself. Your authenticity in presenting is as important as the material you are delivering, so don't try to be someone you're not. You'll never succeed.

Circle the crowd. A very important part of public speaking is to make eye contact with people seated in all parts of the room. That shows people that you are interested in communicating with them – not just getting through your presentation as quickly as possible.

Finish strong. Always be sure to have a satisfying conclusion to your presentation in which you make clear to the listeners what they now know. It creates a warm feeling in the minds of your listeners and shows them that they've really learned something from your talk - which they probably have.

Things to Remember for the Oral Presentation:

**See Envirothon Rules and Regulations for the full oral presentation rules.*

- Teams will be given the current topic scenario two weeks prior to the competition via email
- Visual Aid Posters may include up to two (2) pieces of poster board, any size. Both fronts and backs may be used. Posters may include computer typed documents (minimum allowable font size is 1" in height), the use of markers, coloured pencils, pens, adhesive, construction paper, coloured paper, scrapbooking paper, ruler and scissors.
- Team members may use cue cards (maximum size: 6" x 4")
- Maximum allowable presentation time is ten (10) minutes, followed by a five (5) minute question period. During the presentation, a warning card will be shown at the 5-minute mark and again at the 8-minute mark to ensure presentations stay within the allowable time.
- All team members must participate in the oral presentation, unless special permission has been granted and all members must contribute equally with the verbal delivery.
- During the presentations, all team members must wear the current Envirothon T-shirt.

Check Lists

Before the Competition:

Use this simple check list to ensure your team is ready to compete

- Registration form submitted (Deadline March 31st, 2015)
- Rules and Regulations Signature Requirement Forms signed by all students and adult participants
- Code of Conduct Forms signed by all students and adult participants
- Participant Registration and Release form signed by all students and guardians
- Registration Fees have either been paid or payment is ready to take to the competition
- Transportation to and from the competition is arranged
- Chaperones accompanying team arranged. Please note, each team must have an adult male to chaperone male team members and an adult female to chaperone female team members
- Oral presentations and visual aids are prepared in accordance with the Nova Scotia Envirothon Rules
- Team members are familiar with the rules of the competition

Competition Day Reminders:

- Be on time! Allow ample time for travel
- Advisors must accompany their team to registration
- Advisors / chaperones may not consult with or accompany teams once the field station portion of the competition has begun
- Advisors and team members are expected to be familiar with the rules and regulations of the competition
- All teams are expected to stay for the presentations of the awards, unless special permission has been granted

LEARNING OUTCOMES: AQUATIC ECOLOGY

Abiotic

Identify the processes and phases of the water cycle.

Understand the concept of watersheds. Know the features of a healthy and unhealthy watershed.

Biotic

Identify aquatic species common to Nova Scotia and understand their dependence on one another. Know which aquatic species are considered 'at risk' and what their status is. Know how to use a dichotomous key to identify micro- and macro-invertebrates. Habitat: Understand habitat needs of aquatic species.

Understand the concept of migratory fish and give local examples.

Understand the impact invasive and introduced species can have on an ecosystem and give local examples.

Aquatic Environments

Know what classifies a wetland from other ecosystems. Understand the functions and values of wetlands.

Watercourse Protection & Conservation

Understand ways the Province manages, conserves and protects aquatic resources. Give examples of local regulations which are in place to protect aquatic resources. How can you protect aquatic resources?

Know various methods of conserving water and why they are important. How can you conserve water?

Understand water quality testing and monitoring and why these tests are used to assess and manage aquatic environments. Understand point and non-point source pollution and ways to reduce them. Explain how water quality can be improved.

LEARNING OUTCOMES: FORESTRY (1/2)

Tree Physiology & Identification

Identify common tree species without a key, know how to use a key for unusual & less common species in the Acadian Forest Region.

Know the characteristics (shade tolerance, longevity, site, common uses) of the tree species native to Nova Scotia.

Know the parts and tissues of a tree and be able to explain the growth processes as they relate to the life cycle, including photosynthesis and respiration.

Forest Ecology

Understand the structure of a forest (canopy, understory, ground layer and crown classes).

Understand forest ecology concepts and abiotic and biotic factors affecting them including the relationship between soil and forest types, tree communities, forest succession and biodiversity.

Sustainably Managed Forests

Understand what silviculture is and the various treatments used, both in even-aged and uneven-aged management (thinning, clear cutting, shelter wood, selection cutting, pre-commercial thinning, site preparation and planting).

Know how to use forestry tools and equipment in order to measure tree diameter, height and basal area. Be able to examine growth rings to determine tree age and tree history (periods of drought, growth, scarring from fire).

Be able to interpret macro-features from an aerial photograph.

Understand how social, economic and environmental factors influence forest management decisions and be able to address current forestry issues from different perspectives (ie. Clear cutting vs old growth, prescribed burns in protected areas), and know the provincial regulations pertaining to wildlife habitat and watercourse protection.

LEARNING OUTCOMES: FORESTRY (2/2)

Value of the Forests

Understand the importance and value of trees in an urban and community setting and what factors affect their health and survival.

Understand the economic value of forests and their importance to society including biodiversity, biomass, carbon sequestration, economic benefits, non-timber forests products, and why trees and forests are important to human health, recreation, wildlife and watershed quality.

Understand the economic importance of the forest industry to the provincial, national and international economies, and identify the main types of forest Products produced in the Maritimes.

LEARNING OUTCOMES: SOILS AND LAND USE

Soil Conservation and Land Use Management

Understand why soils are a vital (and essentially non-renewable) natural resource that must be managed properly in order to sustain human society.

Compare different land uses and conservation practices and their impacts on soils, with particular emphasis on agriculture and food production.

Understand how soil management is integral to maintaining clean water and a healthy aquatic environment.

Chemical Properties of Soil and Soil Fertility

Understand how soil fertility reflects the overall chemical, physical, and biological conditions within a given soil.

Understand the concept of micronutrients and macronutrients as they relate to soils and plant nutrition.

Identify roles and benefits of organic matter in soils.

Physical Properties of Soil and Soil Formation

Understand basic soil forming processes and the factors affecting them.

Understand the concept of soil parent material and how different parent materials can affect soil properties.

Be able to identify common soil horizons and soil features and use this information to interpret soil properties and limitations for land use (e.g., texture, structure, colour, organic matter content, stoniness, drainage class).

Be able to use soil survey maps and related information to make interpretations about soil limitations, opportunities, and appropriate land use.

LEARNING OUTCOMES: WILDLIFE (1/2)

Birds, Mammals, Amphibians and Reptiles

Identify wildlife species common to Nova Scotia and the Maritimes using field guides, mounted specimens, skins/pelts, skulls, silhouettes, decoys, wings, scats, tracks, sounds or other common signs.

Define habitat and know the habitat requirements for wildlife and the factors that affect wildlife sustainability. Explain major causes of habitat loss in Nova Scotia.

Wildlife Ecology

Identify basic needs required by wildlife.

Describe wildlife adaptations and their significance (hibernation, migration, colouration, etc.). Identify general food habits (herbivore, omnivore, carnivore), habitats (terrestrial, aquatic) and habits (diurnal, nocturnal) using skull morphology and/or teeth. Identify and explain the advantages of physiological and/or behavioural adaptation of wildlife to their environment.

Know the difference between an ecosystem, community and population. Understand population dynamics such as birth, mortality, age-structure, sex ratio and mating systems. Understand the impact of limiting and decimating factors of common wildlife species on wildlife management. Understand the relationship between predator and prey.

Define succession and explain how a change in climate, topography or land use might modify the process of succession.

Define biodiversity and terminology (limited factor, territory, home range, forest fragmentation, etc.). Explain why biodiversity is important to people and wildlife. Understand the importance of the three levels of biodiversity (genetic, species and ecosystem/community) and the implications of loss at each level. Explain the major causes of biodiversity loss in NS.

Describe food chains, food webs and trophic levels with examples from NS.

LEARNING OUTCOMES: WILDLIFE (2/2)

Conservation and Wildlife Management

Understand the concept of carrying capacity and why it is the main factor affecting population size. Relate the concept of carrying capacity to a wildlife species native to NS. Understand the difference between biological carrying capacity and cultural carrying capacity.

Explain common wildlife management practices and methods that are being used to manage and improve wildlife habitat in NS. Understand the role hunters and trappers play in wildlife management. How can you help in the protection, conservation, management and enhancing of NS wildlife populations?

Issues Involving Wildlife and Society

Understand how non-native, invasive species threaten our environment and the biodiversity of many wildlife species. Understand the impact that non-native, invasive plants can have on wildlife habitat and native wildlife species. Be familiar with species that are non-native, invasive species to Nova Scotia.

Understand the impact that land-use decisions can have on wildlife populations. Understand that wildlife resources are under constant pressure caused by human population growth, environmental degradation and habitat reduction.

Understand the various status of 'at risk' species (vulnerable, threatened, endangered, extirpated, extinct) and the factors that are affecting these species. Understand species reintroduction. Explain common causes that lead to depleted populations and describe measures being taken to help their recovery. Know the organization and agencies responsible for listing species as 'at risk' on global, national and provincial levels.

Understand the impacts, both positive and negative, of people on biodiversity. Negative impacts could be fragmentation of habitat due to development (roads, buildings, etc.), disturbance of wildlife nesting seasons, destruction of habitat due to vehicles, motor vehicle collisions, trash interfering with wildlife health (food intake), pesticides in the environment. Positive impacts could be enhancement of wildlife habitat in order to attract wildlife viewing, increased knowledge through visiting wildlife and natural areas, funding for wildlife management.

Describe white nose syndrome and how is it affecting bats. What measures are being taken to discover outbreaks and prevent spread? Describe brainworm and how is it affecting the mainland moose population.

LEARNING OUTCOMES: INVASIVE SPECIES

Define invasive species and understand the economic, social, and environmental impacts of them.

Comprehend the effects/impacts of invasive species on aquatic, forest, wildlife and soil ecosystems with specific reference to biodiversity.

Explain how ecological impacts may vary by species.

Know some of the characteristics that assist invasive species in successfully establishing new populations. What makes a good invader?

Describe the pathways through which invasive species are introduced.

Discuss the stages of the invasive species management cycle and components of an invasive species management plan.

Assess the costs associated with controlling an invasive species on a province-wide basis.

Outline methods of controlling an invasive species.

Understand how various levels of government and other organizations are involved in the management of invasive species.

Are all invasive species created equal? Describe how risk is assessed.

Discuss the means by which invasive species are detected and monitored.

Demonstrate knowledge of the policies/legislation involved in preventing, detecting, monitoring, and controlling invasive species.

Describe the role for non-government and the average citizen in managing invasive species.

Investigate ways to reduce the arrival of new invasive species by setting the foundations for environmentally ethical behaviors and sound environmental decision making.

Demonstrate knowledge of the various forms of outreach and education being used and assess their effectiveness.

NOVA SCOTIA ENVIROTHON

Judges' Scoring Sheet for Team Presentations

Scoring Scale: 0 = not at all 6 = good
 2 = poor 8 = very good
 4 = fair 10 = excellent

School: _____

Room #: _____ Time Slot: _____

Judge's Initials: _____

Part 1: Presentation Content and Inclusiveness (40 points maximum)	Circle Score
A. How well did the presentation address or identify:	
<ul style="list-style-type: none"> The interrelationship between the environment, natural resources, and different natural resource management strategies? 	0 2 4 6 8 10
<ul style="list-style-type: none"> All the different players/interest groups affected by the problem? 	0 2 4 6 8 10
<ul style="list-style-type: none"> The major natural resources areas (aquatics, forestry, soils, water)? 	0 1 2 3 4 5
<ul style="list-style-type: none"> The current Envirothon theme issue? 	0 1 2 3 4 5
<ul style="list-style-type: none"> The specific environmental problem and related issues regarding the problem? 	0 1 2 3 4 5
B. Were references and resources cited in the team presentation?	0 1 2 3 4 5
PART 1 SUBTOTAL	
Part 2: Application of Data (80 points maximum)	
A. The team demonstrated a solid understanding of political issue(s) related to the problem (regulations, mandates, impact on political system/community).	0 2 4 6 8 10
B. The team demonstrated a solid understanding of the ecological/environmental issue(s) related to the problem.	0 2 4 6 8 10
C. The team demonstrated a solid understanding of economic issue(s) related to the problem including the cost and benefits of the proposed plan, (cost of implementing the plan, economic impact on local resources, cost of doing nothing, future costs, funding source(s),	0 2 4 6 8 10
D. The team demonstrated a solid understanding of social and/or cultural issue(s) related to the problem (private property rights, traditions, clean and healthy environment, right to farm, urban issues, cultural issues, environmental justice).	0 2 4 6 8 10
E. The team presented one viable, rational solution to the problem addressing the resource	0 2 4 6 8 10
F. An implementation plan was included	0 2 4 6 8 10
G. Solution in the presentation has potential to be applied or implemented with long term sustainability to natural resources.	0 2 4 6 8 10
H. Did the solution reflect or address the concerns of all affected groups and issues?	0 2 4 6 8 10
PART 2 SUBTOTAL	
Part 3: Quality of the Presentation (60 points maximum)	
A. Presentation:	0 2 4 6 8 10
<ul style="list-style-type: none"> Strong opening 	
<ul style="list-style-type: none"> Logical presentation of evidence 	0 2 4 6 8 10

<ul style="list-style-type: none"> Rational conclusion based on evidence presented 	0 2 4 6 8 10
B. Participants enhanced the presentation (eye contact, gestures, voice inflection, originality, exhibited professionalism, etc.)	0 2 4 6 8 10
C. Visual aids were used to make major points and show conclusions. (Visual aids should be correct, eye appealing, readable, neat, etc.)	0 2 4 6 8 10
D. Questions were answered logically and concisely by all team members participating.	0 2 4 6 8 10
PART 3 SUBTOTAL	
Part 4: Teamwork (20 points)	
A. Add up to ten points for team member participants in presentation. (Each team member gets up to 2 points for equal oral participation in presentation.)	0 2 4 6 8 10
B. Add up to five points if the presentation was accomplished in the allotted time scale and the team made effective use of their time. (Time scale is max. 10 mins.)	0 1 2 3 4 5
C. Add up to five points if the team demonstrated mutual respect and support	0 1 2 3 4 5
PART 4 SUBTOTAL	
<p style="text-align: center;">Time Point System</p> <p>5 points if 9 to 10 minutes</p> <p>4 points if 8 or more and < 9 minutes</p> <p>3 points if 7 or more and < 8 minutes</p> <p>2 points if 6 or more and < 7 minutes</p> <p>1 point if 5 or more and < 6 minutes</p>	<p>FINAL SCORE:</p> <p>Total Points for Part I (40 max) _____</p> <p>Total Points for Part II (80 max) _____</p> <p>Total Points for Part III (60 max) _____</p> <p>Total Points for Part IV (20 max) _____</p> <p>Total Score(max 200)_____</p> <p>Final Score _____(out f 200 points)</p>

NOVA SCOTIA ENVIROTHON REGISTRATION

May 5 - May 6, 2016
Acadia University, Wolfville, Nova Scotia

Team Registration Form

School Name: _____

Team Name (optional): _____

Advisor: _____ Affiliation: _____ Email: _____

Advisor: _____ Affiliation: _____ Email: _____

Team Fee

Early Bird Registration \$350 per team (Must be post-marked January 31)

Regular Registration \$375 per team (Registration closes Thursday, March 31)

Cancellation: If a team withdraws from the competition after March 31, a 25% administrative fee will be charged. If a team fails to attend the competition without due notice, the team will be charged in full.

Number of Teams Registered	_____ @ \$350 per team	_____
	_____ @ \$375 per team	_____
Total Amount Due:		_____
Payment Amount Enclosed:		_____

Payment: Payment is available in either cash or cheque. Please make cheque payable to: Nova Scotia Forestry Association

Payment is enclosed Payment will be made upon arrival at the competition Do you require an invoice to be sent to your school?

902-848-6542 | www.nsf.ca | PO Box 696 TRURO, NOVA SCOTIA B2N 5E5

NOVA SCOTIA ENVIROTHON PARTICIPANT REGISTRATION & RELEASE

May 5 - May 6, 2016 • Acadia University

Name: _____

School: _____

Date of Birth: _____ Gender: _____ Grade: _____

Home Address: _____

Postal Code: _____ Phone: _____ Email: _____

Dietary restrictions: _____

Health concerns (diabetes, asthmas, allergies, physical disability, etc.): _____

T-Shirt Size (please circle): S M L XL XXL XXXL

Parent/Guardian: _____

Contact: _____ (Home) _____ (Work)

Alternate Contact person: _____ Contact: _____

Physician Contact: _____

LIABILITY RELEASE: I, hereby release, hold harmless and indemnify Nova Scotia Envirothon and all their officers, agents, employees and volunteers from any legal liability, claims, damages and costs for any injury caused by or resulting from participation in the Nova Scotia Envirothon. I agree that my dependent will adhere to the code of conduct and contest rules.

____ (please check) I, hereby grant the right to photograph my dependent and use the photo and/or other digital reproduction of him/her or other reproduction of his/her physical likeness for publication purposes, employees, agents, assigns and sponsors.

Signature of Parent/Guardian: _____ Date: _____
(Signature gives consent for full participation, medical release, and if checked, photo consent)

Form Check List

Please have the following form fully completed and submitted **before the Competition**:

- Nova Scotia Envirothon Registration** Page 33 (1 Form per Team)
Early Bird Deadline: January 21st Regular Deadline: March 31st

Please have the following forms fully completed and ready to **submit upon arrival at the Competition**:

- Rules and Registration Signature Requirements** Page 14 (1 Form per Team)
Signature required from each student and advisor
- Rules and Registration Signature Requirements** Page 15 (1 Form per Adult Chaperone)
Signature required from each adult chaperone attending the event
- Student Code of Conduct** Page 16 (1 Form per Student)
Signature required from student and parent/guardian
- Adult Code of Conduct** Page 17 (1 Form per Advisor/Chaperone)
Signature required from adult participant
- Participant Registration and Release** Page 34 (1 Form per Student/Advisor/Chaperone)
Signature required from student and parent/guardian