

ENVIRONMENTAL/NATURAL RESOURCES

CAREER DEVELOPMENT EVENT

A SPECIAL PROJECT OF THE NATIONAL FFA FOUNDATION

IMPORTANT NOTE: *Please thoroughly read the Introduction Section at the beginning of this handbook for complete rules and procedures that are relevant to all National FFA Career Development Events.*

L EVENT RULES

1. **Team Make-up-** Team size shall be four members. All four members will be scored and all scores will count towards the total team score. The team score is comprised of all four (4) members' exam and practicum scores as well as the team activity.
2. At the time of participation, a member must be a high school FFA member (a graduating senior is considered eligible to compete in state and national career development event up to and including his/her first national convention following graduation). High school refers to 9 - 12 grades.
3. The National FFA Officers and National Board of Directors will be in charge of this event.
4. All general rules will apply to this event.
5. Under no circumstance will any participant be allowed to handle any of the items in the identification portion of the practicums. Any infraction of this rule will be sufficient to eliminate a team from the event.
6. No team, team member or team coach shall visit the event facilities to observe material and facilities after September 1st. Any team, team member or coach reported and proven to do so will cause the elimination of that team from competing in the National FFA Environmental/Natural Resource Career Development Event.
7. Participants will be assigned to group leaders who will escort them to various event-staging sites. Each participant is to stay with his or her assigned group leader throughout the event or until told to change leaders by the event superintendent.
8. All participants will be given an identification number by which they will be designated throughout the event.
9. Participants must come to the event prepared to work in adverse weather conditions. The event will be conducted regardless of the weather. Participants should have rainwear, warm clothes and appropriate footwear.
10. 10. Written Material: All written material will be furnished for the event. No written materials such as tests, problems and worksheets shall be removed from the site.
11. The event will include:
 - a. Objective Written Exam
 - b. Team Activity
 - c. Identification of Material
 - d. Individual Practicums

II. EVENT FORMAT

A. EQUIPMENT

Materials student must provide- Each participant must have a clean, free of notes clipboard, two sharpened No. 2 pencils, and an electronic calculator. Calculators used in this event should be battery operated, non-programmable, silent with large keys and large displays. Calculators should have only these functions- addition, subtraction, multiplication, division, equals, percent, square root, +/- key, and one memory register. No other calculators are allowed to be used during the event.

Equipment provided- All other tools and equipment will be furnished for the event. Participants must use the tools and equipment furnished at the event.

B. TEAM ACTIVITY (90 MINUTES IN LENGTH) (1000 points total)

Students will be provided a scenario that deals with an environmental/natural resource problem.

Soils – (2001)

- * Physical Properties
- * Soil Erosion
- * Soil Analysis
- * Environmental Impact of Soil Degradation

Water – (2002)

- * Importance of Water Quality
- * Factors that Influence the Quality of Water
- * Measure to Ensure Water Quality
- * Management Practices Used to Ensure Water Quality

Air – (2003)

- * Air Pollutants and Their Effects
- * Quality of Life and Air Pollutants
- * Acid rain
- * Clean Air Act and Environmental Laws

Ecosystems – (2004)

- * Basic Ecological Concepts
- * Management of Eco-Systems
- * Grassland Eco-Systems
- * Forestry Eco-Systems
- * Aquatic Eco-Systems
- * Wetland Eco-Systems
- * Non-Native Species effect on Eco-Systems

Waste Management – (2005)

- * Preventing and Reducing Solid Waste
- * Disposing of Waste
- * Manure Management
- * Hazardous Waste

- Teams will be required to develop both an oral, as well as a written statement that addresses the questions in the annual scenario.
- Teams will submit a written summary of their findings at the end of one hour. Summary is to be submitted on the disk provided to each team.
- Teams will have ten (10) minutes of prep time prior to their oral presentation
- Teams will be required to give an oral presentation justifying the decisions made by the team. The team will have eight minutes to make the oral presentation.
- Teams will be required to answer questions in regards to the decision reached by their team. Question period will be 5 minutes in length.

Team Activity Score Card

Oral presentation	500 points
Written presentation.....	300 points
Question	200 points
TOTAL.....	1000 points

C. INDIVIDUAL ACTIVITIES**1. Written Exam - Objective Test (100 points) (60 minutes)**

50 questions submitted by the committee.

2. Annual Practicums

Students will participate in the following three areas on an annual basis:

a. National/Global Issues Interview – (100 points)

Students will participate in personal interviews dealing with environmental/natural resource issues by:

1. Explaining significance of environmental/natural resource issues.
2. Specify recommended practices for conservation of environmental/natural resources.
3. Identify basis for practices, which may appear to be controversial.
4. Analyze and evaluate national and global issues.
5. Identify and develop plans to address national and global issues.

Examples -

- * *What legislation is currently being discussed that will have an affect on the environment?*
- * *What role should the United States play with regulating toxic waste in other countries?*
- * *Describe the Exxon Valdez oil spill and how you felt it was handled.*

b. Press Release Writing - (100 points)

1. Participants will be furnished access to computers, or similar equipment, on which to create a written document. (In the event electronic equipment is not available pencils/pens will be provided.)
2. Participants will create a written document, 350 words or less in the style of a news/press release.
3. Press release should contain the basic elements (facts) customarily found in written publications (*who, what, where, when and how*) The elements/facts presented are to reflect the thoughts of the participant in relation to the topic being addressed.

Examples -

- a. *What type of change is being proposed?*
- b. *Does the proposed solution reflect an economic, or natural resource, impact on surrounding communities?*
- c. *Have participants clearly stated the outlined problem and a solution?*
- d. *Does the press release outline and explain the problem in a clear manner? (i.e.: Could someone from outside the competition or FFA arena read the release and understand the problem and proposed solution)?*

c. Identification - (100 points)

Students will identify fifty (50) items from the following combined areas:

- | | |
|--------------|------------------------|
| 1. Equipment | 5. Reptiles/Amphibians |
| 2. Plants | 6. Predators |
| 3. Wildlife | 7. Birds |
| 4. Fish | 8. Non-Native Species |

3. Rotational Practicums

Students will participate in four of the following practicums each year. Practicums may vary from year to year.

a. Water Analysis - (50 points)

1. Using measuring devices, each participant will measure a sample of water for quality analysis and contaminants.
2. Analyze the results of measurements.
3. Name possible causes of the particulate or other contaminant:
 - a. are they natural.
 - b. are they pollutants (what level is acceptable).
4. Describe the effects on the environment of the pollutants.
5. List the sources of the pollutants.
6. Discuss ways the water quality can be improved.

b. Soil Nutrient Test - (50 points)

1. Students will be furnished with a sample of soil and test kit. They will have to determine the current levels of:

Nitrogen	pH
Potassium	Phosphorus
2. Students will use this information along with an extension service crop sheet provided to make suggestions for what fertilizers need to be added to grow a given crop. (*Example of crops, corn, wheat, tobacco, soybeans*)

c. GPS Locations - (50 points)

1. Students will be furnished with a Global Positioning System (GPS) unit and a map with points identified in longitude and latitude.
2. Using the GPS unit, the participant will be required to walk to and locate the points.
3. Participants will then record a predetermined identification mark located at each point.
4. Participants shall know how to read longitude and latitude numbers, how to use a GPS unit and understand differential corrections.

d. Environmental Analysis - (50 points)

Students will address the following five aspects:

1. Living Organisms - students will identify and list as many living organisms (both native and invader) as they can find within the marked boundaries of the site. Additional species may be artificially introduced as mounted or preserved specimens.
2. Non-living components (shelter, nutrients) - students will inventory resources such as water, shelter, etc. upon which resident species depend for survival.
3. Food Web - students will define relationships among the plants and animal species that are found or introduced in the study area.
4. Ecological Succession - students will identify the stages of succession of various grasses, shrubs and trees. They will also identify causes of changes in succession patterns.
5. Situation Analysis - students will determine whether a healthy balance exists between the environment and the native species that depend upon it. They will also check remediation practices where needed.

e. Soil Profile - (50 points)

1. Students will be furnished with a scorecard; an interpretation guide and a pre-dug soil pit or core/monolith to judge. The participants will identify soil horizons, textures, percentage coarse fragments, pH, horizon colors, slope, geologic origin, soil permeability, irrigation suitability and soil structure types of the soil present in the given example.
2. Using the information from the score card and interpretation guide, the student will then identify the most appropriate use for the given area, and the erosion control practice that best fits the designated use for the land.

f. Waste Management - (50 points)

1. Participants will be presented with a scenario (ag producer, neighborhood, office building, manufacturing plant, etc.) that generates waste material creating differing environmental threats.
2. Participants will evaluate the nature of waste output to identify plausible options for reducing the rate of waste generation, recycling or providing potential alternative uses for the waste, treating the waste, or disposing of the waste.
3. Participants should be able to identify at least one benefit and one deterrent for each possible option that is offered.

III. TIEBREAKER

Team - 1) Team with the highest individual score,
2) team with the highest team activity score.

Individual - 1) Individual on the highest team,
2) total practicum scores, 3) Current issues practicum,
4) Identification practicum

IV. AWARDS

Awards will be presented at an awards ceremony. Awards are presented to teams as well as individuals based upon their rankings. Awards are sponsored by a cooperating industry sponsor(s) as a Special Project, and/or by the general fund of the National FFA Foundation.

V. REFERENCES

This list of references is not intended to be inclusive. Other sources may be utilized and teachers are encouraged to make use of the very best instructional materials available. The following list contains references that may prove helpful during event preparation.

National Council for Agricultural Education's material - "Applied Environmental Sciences"

- *Environmental Science and Technology*. Porter, Lee, Turner and Hillan. Interstate Publishers, Inc. 1997. PO Box 50 Danville, IL 61834-0050.
- *Managing Our Natural Resources*. Camp and Daughtery. Delmar Publishers, Inc. 1988. Albany NY.
- *Wildlife Management*, Stutzenbaker, Scheil, Swan, Lee and Mattics, Interstate Publishers, Inc. 1999.
- *Natural Resources and Environmental Technology*, Lee, Interstate Publishers, Inc. 2000.
- *Environmental Science for Agriculture and the Life Sciences*. Albany, NY. Delmar Publishers 1994.
- *Our Natural Resources and Their Conservation*. Kircher, H.B., Wallace, D.L., & Gore, D.J. Danville, IL. Interstate Publishers, Inc. 1992.
- *Soil Science: Evaluation, Interpretation, and Management of Soil*. Columbia, MO. Instructional Materials Laboratory, University of Missouri, phone: 800-669-2465.
- *The Global Ecology Handbook. What You Can Do About the Environmental Crisis*. Courson, W.H. (Ed.). Boston, MA. Beacon Press 1990.
- *Biological Science, an Ecological Approach*. Dubuque, IA. Kendall Hunt Publishers, 1992
- *Introduction to Forestry Science*. L.DeVere Burton. Delmar Publishers, 2000.
- *Agriscience & Technology*. L. DeVere Burton. Delmar Publishers, 1992.

Non-Native (Invader) Resource List

- U.S. Fish and Wildlife Service
- U.S. Park Service
- U.S. Dept. of Interior
- U.S. Forest Service
- State Department of Natural Resources
- Gulf of Mexico Program
- Minnesota Sea Grant
2305 East 5th St.
Duluth, MN 55812-1445
Phone: 218-726-6191
www.ansc.purdue.edu/sgnis
Sea Grant has developed a CD-ROM titled "Your Exotic Species One-Stop Information Shop!" Price \$14.00
- Internet Locations
Search Engines: Type in "exotic species", "non-native species", "non-indigenous species". Make sure to include quotations in search.

www.nbii.gov/invasive

www.glifwc.org

www.flmnh.ufl/fnps/exotics

www.gmpo.gov

Environmental & Natural Resources

Name: _____ Chapter: _____

State: _____ Team No.: _____

Team Activity Scorecard

Category	Possible Points	Score
1 Quality of Management Plan (Written Presentation)	300	
Previously scored by judges using Written Proposal Scorecard		
2 Analysis of Information (Oral Presentation 200 points)		
• Introduction	20	
• Clearly identify the problem(s)	20	
• Short term goals discussed	20	
• Long term goals discussed	20	
• Short term and long term goals are measurable	20	
• Demonstrates knowledge and experience in subject area	20	
• Possible solutions analyzed	20	
• Recommendations discussed	20	
• Clearly addresses the scenario	20	
• Summary/Conclusion	20	
3 Team Presentation (300 points)		
• Participation of all team members	60	
• Logical progression of material	60	
• Delivery professional, organized and well thought out	60	
• Presentation clear and effective	60	
• Team attitude	60	
4 Questions (200 points)		
• Each member of the team responds to at least one question	50	
• Confidence shown	50	
• Effectiveness of response	100	
Total:	1000	

Judge's Name_____
Judge's Signature_____
Date