



MICHIGAN FFA

To view additional contest details, see the contest clarification sheet on the Michigan FFA Website

# ENVIRONMENTAL SKILLS

## Career Development Event

### OBJECTIVES

The Environmental Skills Contest is designed to frame the most important aspects of the environment (soil, water, and air quality). The purpose of the Environmental Skills Career Development Event is to stimulate student interest, promote environmental and natural resources skills in agricultural education curriculum and provide recognition for those who have demonstrated skills in this area.

### EDUCATIONAL STANDARDS

For educational standards, please refer to the Environmental Skills Handbook located at [Environmental and Natural Resources Handbook.pdf | Powered by Box](#)

### EVENT PROCEDURES

#### *Equipment*

##### **Equipment Provided:**

Students will be provided with a series of nine test stations. All necessary Scantron scoresheets, maps, directions, questions, and GPS units will be provided.

##### **Equipment Not Provided:**

Suggested materials for students to bring - each team should bring a clipboard and at least two pencils. Teams will also have access to writing

materials at the contest site if needed.

**Written Materials:**

All written materials will be furnished for the event. No part of the contest written materials will be available before team registration on the day of the contest. Any team acquiring a copy of such materials and/or filling out contest materials prior to the actual start of the contest will be disqualified. No written materials such as tests, problems and worksheets shall be removed from the site.

**Optional Equipment:**

Teams may use their own GPS unit and clinometer during the event.

## *Rules*

No team, team member or team coach shall visit the event location to observe materials and facilities after March 1st. If any team, team member or coach is reported and proven to do so, the team will be eliminated and not allowed to compete in the State FFA Environmental and Natural Resources Career Development Event.

Teams will be assigned to group leaders who will escort them to various event-staging sites. Each team is to stay with his or her assigned group leader throughout the event or until told to change locations by the event superintendent.

All teams will be given an identification number by which they will be designated throughout the event

The event will include the following 9 stations:

1. Water Quality
2. Soils Analysis
3. Environmental Tools and Invasive Species Identification
4. Ecosystem Analysis
5. GPS
6. Fish and Aquatic Organism Identification
7. Plant and tree Identification
8. Animal and Bird Identification
9. Reptile and Amphibian Identification

## ***Event Attire***

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.

## **CONTEST PERSONNEL**

### ***Judges***

Judges will be selected by the contest superintendent.

### ***Superintendent***

The superintendent will monitor the contest room and assist the judges as they compile their final placing.

The superintendent will adequately prepare the judges before the event competition.

## **SCORES**

The comprehensive list of species that will be used at the various stations is located in the back of this handbook. IMPORTANT NOTE: The three-digit number assigned to each species and answers in the water quality section will be used during the contest to fill in the correct responses on the Scantron score sheet. This will be explained to students on the day of the contest to eliminate errors.

### ***Tie Breakers***

This contest has a total of 442 possible points. The tie break will be as follows: To break a tie the contest chair will examine the total points scored by each team in the Ecosystem Analysis (Section 4). The team with the highest points will be the State winner. If a tie remains, the team with the highest score in the Reptiles, and Amphibians (Section 9) section will win. As a final tie breaker, the total score in the Soils Analysis (Section 2) section will determine which team will win the State Environmental Skills Contest.

## **PROCEDURE**

### ***Contest Overview***

All resources from this contest can be found on the MI FFA website, including photos of all environmental tools and invasive species, fish and aquatic organisms, plants and trees, animals and birds, and reptiles and amphibians used in this contest. This is a team event. Teams are required to stay together as they rotate through nine stations. The contest superintendent will notify teams when to move to the next station. Each team will be allowed fifteen minutes per station. All answers are to be recorded on the Scantron multi-purpose form B. GPS questions can be found on a separate sheet of paper. At the end of the competition teams will turn in all materials to the contest chair. Teams will be required to submit all contest materials prior to departing the site.

## ***Environmental Skills Station Information***

### **Section 1: Water Quality (60 Points)**

- Water Quality Resource ([www.waterontheweb.org](http://www.waterontheweb.org))

In this section, teams will analyze a set of data provided and answer questions about the water quality at the site location. Answers will be placed in the appropriate location on the Scantron sheet provided. Students can use the resource cited above to assist with training purposes for the Water Quality section. Students will record the 3-digit number corresponding to the answer onto the score sheet. This section is worth 60 points. See the Michigan FFA website for resources.

### **Section 2: Soils Analysis (50 Points)**

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

For training please refer to the Land Conservation Contest guidelines found on the Michigan FFA web site. Students will be instructed to use a sound environmental perspective as they evaluate a soil pit. They will be provided all of the information about soil test data at the site. Students MUST fill out the soil portion of this contest as instructed on the Scantron answer sheet. See the soil analysis questions located in Section 2: Soils Analysis Questions (Part I) and (Part II). The Michigan Land Judging Card will be used at this site. This section is worth 50 points. See the Michigan FFA website for resources.

### **Section 3: Environmental Tools and Invasive Species (50 Points)**

- Identify Common Environmental Tools
- Identify Invasive Species in Michigan

In this section, students will identify a combination of 25 Environmental Tools and Invasive Species found in the contest guide on the Michigan FFA website. There may be actual tools, specimens, or photos provided for the contest. Students will record their answers using the resources available that reference the questions in the Environmental Tools and Invasive Species questions below. Note: The Scantron Sheet is numbered 1-25 for this section. This section is worth 50 points. See the Michigan FFA website for resources.

#### **Section 4 Ecosystem Analysis (62 Points)**

- Site Overview
- Products of Environmental Site
- Signs of Environmental Quality

Students will use the question sheet provided in the contest packet to assess the site. Instructions will be given to help students understand how to mark their responses. Responses will be recorded on the contest Scantron bubble sheet. See the Michigan FFA website for resources. Note: The Scantron Sheet is numbered 1-31 for this section.

#### **Section 5: GPS (20 Points)**

- Using a GPS Unit, students will answer various questions located at a series of marked location

At this station, students will answer a series of questions using a provided GPS unit. Questions may be asked to determine the latitude and longitude coordinates, directional aspects and other relevant questions about a marked location using provided GPS units. Students will record the 3-digit number of each species onto the score sheet. Note: The Scantron Sheet is numbered 32-40 for this section.

#### **Section 6: Fish and Aquatic Organisms (50 Points)**

- Identify Common Fish
- Identify Common Aquatic Organisms

In this section, students will identify a combination of 25 fish and aquatic organisms found in the contest guide on the Michigan FFA website. Actual specimens or photos may be used for identification purposes. Students will record the 3-digit number of each species onto the score sheet. Note: The Scantron Sheet is numbered 1-25 for this section. This section is worth 50 points. See the Michigan FFA website for resources.

### **Section 7: Plants and Trees: (50 Points)**

- Identify Common Plants
- Identify Common Trees

In this section, students will identify a combination of 25 plant and tree species. On-site specimens and photos will be used for identification purposes. On-site plants/trees will be flagged for identification. If available, there will be plants and trees that are marked at the actual site or photos/samples (including bark and leaves) will be provided. The students will record the 3-digit number of each species onto the scoresheet. Note: The Scantron Sheet is numbered 26-50 for this section. This section is worth 50 points. See the Michigan FFA website for resources.

### **Section 8: Animals and Birds (50 Points)**

- Identify Common Animals
- Identify Common Birds

In this section, students will identify a combination of 25 animals and bird species found in the contest guide on the Michigan FFA website. Actual specimens of skulls and pelts or photos may be used for identification purposes. ALL responses will be recorded on the contest Scantron bubble sheet. Students will record the 3-digit number of each species onto the scoresheet. Note: The Scantron Sheet is numbered 1-25 for this section. This section is worth 50 points. See the Michigan FFA website for resources.

### **Section 9: Reptiles, and Amphibians (50 Points)**

- Identify Common Reptiles
- Identify Common Amphibians

In this section, students will identify a combination of 25 reptiles and amphibian species found in the contest guide on the Michigan FFA website. Actual specimens or photos may be used for identification purposes. Students will record the 3-digit number of each species onto the score sheet. Note: The Scantron Sheet is numbered 26-50 for this section. This section is worth 50 points. See the Michigan FFA website for resources.

## Section 1: Water Quality Questions

Given the location of the water source provided on your map and at the contest location, students will answer the following questions. This section is worth 60 points.

1. What type of surface water is the most consistent at this site (10 Points)?

**100** - Lake or pond; **101** - River or stream; **102** - Swamp or bog; **103** - Drainage Ditch; or **104** - Groundwater

Given the following characteristics of stream location, answer the following questions.

| Parameter               | Sample 1 | Sample 2 | Sample 3 | Sample 4 |
|-------------------------|----------|----------|----------|----------|
| <b>Temperature</b>      | 15°C     | 10°C     | 23°C     | 14°C     |
| <b>Alkalinity</b>       | 30 mg/L  | 150 mg/L | 150 mg/L | 125 mg/L |
| <b>Total Phosphate</b>  | .03 mg/L | .06 mg/L | .08 mg/L | .1 mg/L  |
| <b>Dissolved Oxygen</b> | 6 mg/L   | 2.5 mg/L | 8.1 mg/L | 8.7 mg/L |
| <b>pH</b>               | 4.2      | 8.2      | 8.8      | 7.0      |

2. Based on the table above, which sample most likely came from groundwater?

- 201. Sample 1
- 202. Sample 2
- 203. Sample 3
- 204. Sample 4
- 205. None of the above

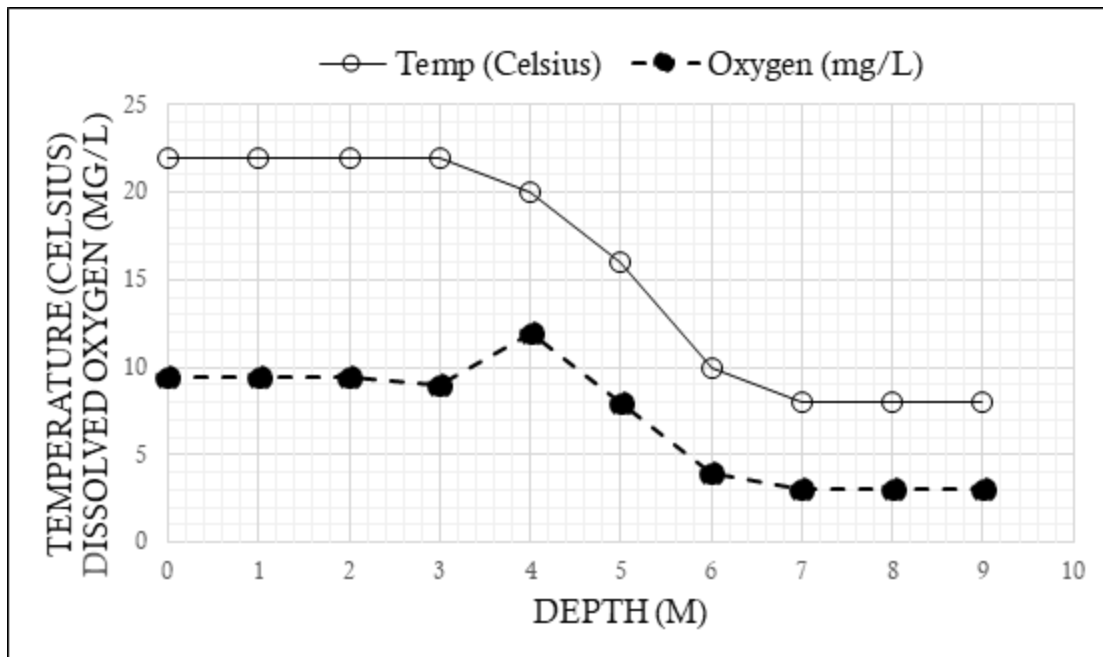
3. The pH of Sample 1, would most likely be considered? (10 Points)

- 301. A neutral pH
- 302. An alkaline pH
- 303. An acidic pH

4. Which sample could support a healthy coldwater fish population?

- 401. Sample 1
- 402. Sample 2
- 403. Sample 3
- 404. Sample 4
- 405. None of the above

Given the following graph of a lake profile In Michigan:



5. The change in temperature between letters \_\_\_\_ and \_\_\_\_ meters is about \_\_\_\_ degrees in Fahrenheit (note: temperature on graph is in Celsius)? (10 Points)

- 501. 11
- 502. 14
- 503. 18
- 504. 25
- 505. 28

6. Which letter above represents the hypolimnion in this stratified lake (10 Points)?

- 601. A
- 602. B
- 603. C
- 604. D
- 605. E

## Section 2: Soils Analysis Questions (Part I)

This section of the soils analysis (Part I) is worth 17 points (1 Point per question). Record all answers on the Scantron scoresheet.

| Soil Factors – Part I – Interpretation of Soil Factors |          |
|--------------------------------------------------------|----------|
| 1. Surface Texture                                     | 5. Slope |

|                                                                                                       |                                                                                                                                                                                                        |                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| A. Coarse<br>B. Moderately Coarse<br>C. Medium<br>D. Moderately Fine<br>E. Fine                       | A. Nearly Level (0-1%)<br>B. Gently Sloping (1-3%)<br>C. Moderate Sloping (3-5%)<br>D. Strongly Sloping (5-8%)<br>E. Steep (8-15%)                                                                     |                                                                                                                                  |
| 2. Subsoil Texture<br>A. Coarse<br>B. Moderately Coarse<br>C. Medium<br>D. Moderately Fine<br>E. Fine | 6. Erosion – Wind & Water<br>A. None to Slight<br>B. Moderate<br>C. Severe<br>D. Very Severe                                                                                                           |                                                                                                                                  |
| 3. Color of Surface Layer<br>A. Dark<br>B. Medium<br>C. Light                                         | <i>Problems affecting this site and management</i><br>All answers are Yes=A and No=B                                                                                                                   | Y=A, N=B                                                                                                                         |
| 4. Color of Subsoil<br>A. Bright<br>B. Mottled<br>C. Dull                                             | 7. Soil Structure<br>8. Droughty<br>9. Stony<br>10. Drainage<br>11. Wet Spots<br>12. Seasonal Flooding<br>13. Slope<br>14. Wind Erosion<br>15. Water Erosion<br>16. Organic Matter<br>17. Permeability | Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B<br>Y=A, N=B |

## Section 2: Soils Analysis Questions (Part II)

This section of the soils analysis (Part II) is worth 33 points (1 Point per question). Record all answers on the Scantron scoresheet. All answers In Part II are Yes=A and No=B

| <b>Part II – Recommended Management</b> |          |
|-----------------------------------------|----------|
| 18. Grass waterways                     | Y=A, N=B |
| 19. Contour tillage                     | Y=A, N=B |
| 20. Strip cropping                      | Y=A, N=B |
| 21. Conservation tillage                | Y=A, N=B |
| 22. Windbreaks                          | Y=A, N=B |

|                                                                   |          |
|-------------------------------------------------------------------|----------|
| 23. Install and/or maintain artificial drainage                   | Y=A, N=B |
| 24. Barnyard manure if available                                  | Y=A, N=B |
| 25. Liming materials                                              | Y=A, N=B |
| 26. Apply potassium fertilizer                                    | Y=A, N=B |
| 27. Apply phosphorus fertilizer                                   | Y=A, N=B |
| 28. Cover and green manure crops                                  | Y=A, N=B |
| 29. Return all crop residues to the soil                          | Y=A, N=B |
| 30. Establish recommended grass or grasses and legumes            | Y=A, N=B |
| 31. Protect from burning                                          | Y=A, N=B |
| 32. Managed grazing of pasture for erosion control                | Y=A, N=B |
| 33. Top dress established legumes with phosphorus                 | Y=A, N=B |
| 34. Top dress established legumes with potassium                  | Y=A, N=B |
| 35. Top dress permanent grass vegetation with commercial nitrogen | Y=A, N=B |
| 36. Eradicate brush                                               | Y=A, N=B |
| 37. Special plantings for wildlife food and cover                 | Y=A, N=B |
| 38. Plant adapted species of trees                                | Y=A, N=B |
| 39. Protect trees and shrub areas from grazing                    | Y=A, N=B |
| 40. Manage woods                                                  | Y=A, N=B |
| <b>Suitability for Alternative Uses</b>                           | Y=A, N=B |
| 41. Septic tank disposal field                                    | Y=A, N=B |
| 42. Residential development without sanitary or storm sewers      | Y=A, N=B |
| 43. Residential development with sanitary or storm sewers         | Y=A, N=B |
| 44. Streets and roads                                             | Y=A, N=B |
| 45. Playgrounds                                                   | Y=A, N=B |
| 46. Paths and trails or golf courses                              | Y=A, N=B |
| 47. Woodlands and wildlife area                                   | Y=A, N=B |
| 48. Open land wildlife area                                       | Y=A, N=B |
| 49. Wetland wildlife area                                         | Y=A, N=B |
| 50. Excavated pond                                                | Y=A, N=B |

### ***Section 3: Environment Tools and Invasive Species***

| <b><u>Environmental Tools</u></b> | <b><u>Invasive Species</u></b>        |
|-----------------------------------|---------------------------------------|
| Animal Identification Tags        | Asian Longhorned Beetle               |
| Aquatic Net                       | Beech Leaf Disease/Beech Bark Disease |
| Biltmore Stick                    | Emerald Ash Borer                     |
| Binoculars                        | Eurasian Milfoil                      |
| Bird Identification Bands         |                                       |

|                             |                          |
|-----------------------------|--------------------------|
| Bottom Dredges              | Giant Hogweed            |
| Breast Height Diameter Tape | Garlic Mustard           |
| Fish Measuring Board        | Oak Wilt Disease         |
| GPS Unit                    | Phragmites               |
| Increment Tree Borer        | Purple Loosestrife       |
| Mammal Traps                | Ruffe                    |
| Minnow Seine Net            | Round Goby               |
| Plankton Net                | Rusty Crayfish           |
| Secchi Disk                 | Sea Lamprey              |
| Thermometer                 | Spiny Water Flea         |
| Water Bottle Samplers       | Thousand Cankers Disease |
| Water Meter for pH and D.O. | Woolly Adelgid           |
|                             | Zebra Mussel             |

**Answer the questions below as they relate to the specimen provided (picture or sample).**

**Questions 1-5.** This environment tool is an example of a: **A:** Secchi Disk **B:** Thermometer **C:** Water Bottle Sampler **D:** Water meter for pH and D.O. **E:** Aquatic Net

**Questions 6-10.** This environment tool is an example of a: **A:** Bottom Dredge **B:** Fish Measuring Board **C:** Plankton Net **D:** Minnow Seine Net. **E:** Binoculars

**Questions 11-15.** This environment tool is an example of a: **A:** Mammal Trap **B:** Animal Identification Tag **C:** Bird Identification Tag **D:** GPS Unit **E:** Biltmore Stick

**Questions 16-20.** This environment tool is an example of a: **A:** Breast Height Diameter Tape **B:** Increment Tree Borer **C:** GPS Unit **D:** Biltmore Stick **E:** Plankton Net

**21.** This invasive specimen is an example of: **A:** Giant Hogweed **B:** Garlic Mustard **C:** Phragmites **D:** Purple Loosestrife **E:** Eurasian Milfoil

**22.** This invasive specimen is an example of: **A:** Giant Hogweed **B:** Garlic Mustard **C:** Phragmites **D:** Purple Loosestrife **E:** Eurasian Milfoil

**23.** This invasive specimen is an example of: **A:** Ruffe **B:** Round Goby **C:** Rusty Crayfish **D:** Spiny Water Flea **E:** Zebra Mussel

**24.** This invasive specimen is an example of: **A:** Ruffe **B:** Round Goby **C:** Rusty Crayfish **D:** Spiny Water Flea **E:** Zebra Mussel

**25.** This invasive specimen is an example of: **A:** Ruffe **B:** Round Goby **C:** Rusty Crayfish **D:** Spiny Water Flea **E:** Zebra Mussel

#### Section 4: Ecosystem Analysis Questions

| <b>Ecosystem Analysis</b>                                                                                                                                            |                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| <b>A. Characteristics of the Site (Take the entire site into consideration)</b>                                                                                      |                              |
| 91. The site is more...                                                                                                                                              | A=rural, B=urban             |
| 92. The site shows signs of environmental degradation due to human population pressure.                                                                              | A=true, B=false              |
| 93. Does the natural environment appear to be A, complex (diverse) or B simple (fragile)?                                                                            | A=complex, B=simple          |
| 94. In terms of biodiversity, is the site A, productive (much life and growth, both flora and fauna) or B, low (life and growth appear to be thin, sparse, or weak)? | A=productive, B=low          |
| 95. Land use demands by people (on the site, around the site nearby, or in approximation to the site) is A, heavy or B, light.                                       | A=heavy, B=light             |
| 96. Present land use is A, more agriculture or B, more natural (non-agricultural).                                                                                   | A=agriculture, B=natural     |
| 97. The primary function of the site appears to be A, protective (no development for people) or B, multiple use.                                                     | A=protective, B=multiple use |
| <b>B. Site Production or Potential</b>                                                                                                                               |                              |
| 98. Food and feed (agricultural, for human or livestock)                                                                                                             | A=yes, B=no                  |
| 99. Wood (for lumber or fuel)                                                                                                                                        | A=yes, B=no                  |
| 100. Mining or drilling (for minerals, coal or oil)                                                                                                                  | A=yes, B=no                  |
| 101. Wildlife habitat (from some or all of it)                                                                                                                       | A=yes, B=no                  |
| 102. Erosion control (evidence of erosion control intentionally put into place to conserve soil)                                                                     | A=yes, B=no                  |
| 103. Watershed management (controlling brush and vegetation, dredging, expanding, or developing)                                                                     | A=yes, B=no                  |
| 104. Should this site be greenbelt zoned                                                                                                                             | A=yes, B=no                  |
| 105. Aesthetic value                                                                                                                                                 | A=yes, B=no                  |
| 106. Waste disposal                                                                                                                                                  | A=yes, B=no                  |
| 107. Transportation                                                                                                                                                  | A=yes, B=no                  |
| 108. Industrial production (Industrial)                                                                                                                              | A=yes, B=no                  |
| 109. Supply and service (e.g., Park)                                                                                                                                 | A=yes, B=no                  |

|                                                                      |             |
|----------------------------------------------------------------------|-------------|
| 110. Water Supply                                                    | A=yes, B=no |
| 111. Landfill                                                        | A=yes, B=no |
| <b>C. Signs of Environmental Quality</b>                             |             |
| 112. Soil erosion evident                                            | A=yes, B=no |
| 113. Plant life sickly and sparse                                    | A=yes, B=no |
| 114. Air pollution noticeable                                        | A=yes, B=no |
| 115. Evidence of animal's present (wildlife, mammals or birds)       | A=yes, B=no |
| 116. Water pollution noticeable                                      | A=yes, B=no |
| 117. Storm sewers or ditches overloaded                              | A=yes, B=no |
| 118. Swamp areas maintained (left alone or unaltered, not filled in) | A=yes, B=no |
| 119. Solid waste is a problem (litter)                               | A=yes, B=no |
| 120. People pressure is heavy (crowded, heavily used)                | A=yes, B=no |
| 121. The color of the site has the potential to be mostly green      | A=yes, B=no |

## Section 6: Fish and Aquatic Organism List

Choose the answer and record the 3 - digit number that corresponds to that answer in the appropriate place on the Scantron scoresheet.

|                                     |                              |
|-------------------------------------|------------------------------|
| <b><u>Aquatic Insects</u></b>       | <b><u>Fish</u></b>           |
| 101. Amphipod (Scud)                | 201. Blue Catfish            |
| 102. Caddisfly Larva                | 202. Bluegill/Sunfish        |
| 103. Crane fly Larva                | 203. Brook Trout             |
| 104. Crayfish                       | 204. Brown Trout             |
| 105. Dobsonfly Larva                | 205. Channel Catfish         |
| 106. Dragonfly Larva                | 206. Crappie                 |
| 107. Giant Water Bug                | 207. Flathead Catfish        |
| 108. Leech                          | 208. Largemouth Bass         |
| 109. Mayfly Larva                   | 209. Muskie                  |
| 110. Midge Larva                    | 210. Northern Pike           |
| 111. Pill Clam (Fingernail Clam)    | 211. Perch                   |
| 112. Pouch Snail                    | 212. Salmon                  |
| 113. Predaceous Diving Beetle       | 213. Smallmouth Bass         |
| 114. Predaceous Diving Beetle Larva | 214. Sturgeon                |
| 115. Riffle Beetle                  | 215. Walleye                 |
| 116. Stonefly Larva                 | 216. Yellow Bullhead Catfish |
| 117. Water Boatman                  |                              |

|                     |  |
|---------------------|--|
| 118. Water Penny    |  |
| 119. Water Scorpion |  |
| 120. Water Strider  |  |

## ***Section 7: Plant and Tree List***

Choose the answer and record the 3 - digit number that corresponds to that answer in the appropriate place on the Scantron scoresheet.

| <b><u>Plants</u></b>   | <b><u>Trees</u></b>    |
|------------------------|------------------------|
| 301. Black Nightshade  | 401. Ash               |
| 302. Bracken Fern      | 402. Aspen             |
| 303. Burdock           | 403. Balsam Fir        |
| 304. Cattails          | 404. Black Cherry      |
| 305. Clover            | 405. Box Elder         |
| 306. Crabgrass         | 406. Eastern Red Cedar |
| 307. Dandelions        | 407. Elm               |
| 308. Giant Foxtail     | 408. Hemlock           |
| 309. Golden Rod        | 409. Jack Pine         |
| 310. Johnson's Grass   | 410. Maple             |
| 311. Lambs quarter     | 411. Red Oak           |
| 312. Milkweed          | 412. Shagbark Hickory  |
| 313. Mullein           | 413. Sycamore          |
| 314. Nettles           | 414. Tamarack          |
| 315. Poison Ivy        | 415. Walnut            |
| 316. Poison Sumac      | 416. White Birch       |
| 317. Pond Lily         | 417. White Cedar       |
| 318. Switchgrass       | 418. White Pine        |
| 319. Thistles          | 419. White Oak         |
| 320. Velvet Leaf       | 420. White Spruce      |
| 321. Wild Raspberries  | 421. Willow            |
| 322. Wild Strawberries | 422. Yellow Birch      |
|                        |                        |

## ***Section 8: Animal and Bird List***

Choose the answer and record the 3 - digit number that corresponds to that answer in the appropriate place on the Scantron scoresheet.

| <b>Wildlife</b>        | <b>Birds</b>              |
|------------------------|---------------------------|
| 501. Badger            | 601. Bald Eagle           |
| 502. Beaver            | 602. Belted Kingfisher    |
| 503. Black Bear        | 603. Blue Jay             |
| 504. Bobcat            | 604. Canadian Goose       |
| 505. Chipmunk          | 605. Cardinal             |
| 506. Cottontail        | 606. Common Loon          |
| 507. Coyote            | 607. Cooper's Hawk        |
| 508. Deer Mouse        | 608. Eastern Bluebird     |
| 509. Elk               | 609. Evening Grosbeak     |
| 510. Fisher            | 610. Goldfinch            |
| 511. Fox Squirrel      | 611. Great Blue Heron     |
| 512. Gray Fox          | 612. Great Horned Owl     |
| 513. Gray Squirrel     | 613. Kestrel              |
| 514. Gray Wolf         | 614. Kirtland Warbler     |
| 515. Kangaroo Mouse    | 615. Mallard Duck         |
| 516. Mink              | 616. Mute Swan            |
| 517. Mole              | 617. Osprey               |
| 518. Moose             | 618. Pileated Woodpecker  |
| 519. Muskrat           | 619. Piping Plover        |
| 520. Opossum           | 620. Purple Martin        |
| 521. Otter             | 621. Quail                |
| 522. Pine Martin       | 622. Red-Tailed Hawk      |
| 523. Porcupine         | 623. Red-Winged Blackbird |
| 524. Raccoon           | 624. Ring-Necked Pheasant |
| 525. Red Fox           | 625. Ruffed Grouse        |
| 526. Snowshoe Hare     | 626. Sand Hill Crane      |
| 527. Skunk             | 627. Sharp-tailed Grouse  |
| 528. Weasel            | 628. Trumpeter Swan       |
| 529. White-tailed Deer | 629. Wild Turkey          |
| 530. Woodchuck         | 630. Wood Duck            |

## ***Section 9: Reptile and Amphibian List***

Choose the answer and record the 3 - digit number that corresponds to that answer in the appropriate place on the Scantron scoresheet.

|                                       |                                 |
|---------------------------------------|---------------------------------|
| <b><u>Reptiles and Amphibians</u></b> |                                 |
| 701. Black Rat Snake                  | 722. Green Frog                 |
| 702. Blanchard's Cricket frog         | 723. Green Snake                |
| 703. Blanding's Turtle                | 724. Gray Tree Frog             |
| 704. Blue Racer                       | 725. Kirtland's Snake           |
| 705. Blue Spotted Salamander          | 726. Marbled Salamander         |
| 706. Box Turtle                       | 727. Mink Frog                  |
| 707. Brown Snake                      | 728. Mudpuppy                   |
| 708. Bull Frog                        | 729. Northern Leopard Frog      |
| 709. Butler's Garter Snake            | 730. Northern Red Bellied Snake |
| 710. Common Map Turtle                | 731. Northern Spring Peeper     |
| 711. Common Musk Turtle               | 732. Painted Turtle             |
| 712. Common Snapping Turtle           | 733. Queen Snake                |
| 713. Eastern American Toad            | 734. Western Lesser Siren       |
| 714. Eastern Garter Snake             | 735. Red-Backed Salamander      |
| 715. Eastern Hog-Nosed Snake          | 736. Red-Eared Slider           |
| 716. Eastern Milk Snake               | 737. Small-Mouth Salamander     |
| 717. Eastern Massasauga Rattlesnake   | 738. Spiny Soft-Shelled Turtle  |
| 718. Eastern Newt                     | 739. Spotted Salamander         |
| 719. Eastern Tiger Salamander         | 740. Spotted Turtle             |
| 720. Four Toed Salamander             | 741. Western Chorus Frog        |
| 721. Fowler's Toad                    | 742. Wood Turtle                |