WHAT’S IT ALL ABOUT?
Take a journey through fields, forests, wetlands and urban areas to discover the wonders and mysteries of Michigan’s natural environment. Explore the outdoors with place-based, experiential activities or investigate environmental topics while indoors with active hands-on activities. Through the 4-H environmental sciences project, you will learn about the interconnections of people and nature. You’ll also develop respect for the natural environment while creating a sense of stewardship toward our natural resources.

» Learn basic science and ecology principles.
» Develop a greater sense of value, sensitivity and stewardship toward the environment.
» Take a closer look at environmental issues and work to resolve them.
» Become more environmentally literate and willing to be an active citizen.
» Explore different career choices in natural resources.

THE BIG PICTURE
Starting Out:
» Spend time outdoors engaged in hands-on activities.
» Investigate a wetland such as a bog, marsh, fen or swamp and the unique plants that grow there.
» Walk through an old-growth forest.
» Explore animal habitats and their adaptations.
» Take a night hike and learn nighttime adaptations.
» Use forester’s tools to inventory a parcel of woods.
» Learn how to test water quality using chemical kits and a Secchi disc.

Learning More:
» Wade into a stream collecting macro-invertebrates.
» Process fish while examining anatomy and stocking data.
» Learn more about energy development and consumption.
» Use fishing as a means to explore lake ecology and various fish biology.
» Identify native and invasive species.
» Explore water below the surface using a remotely operated vehicle (ROV).

Expanding Horizons:
» Visit a landfill, wastewater treatment facility or recycling center.
» Learn about climate change and its effect on the environment.
» Discover the sources of various types of pollution, and learn how pollution can be prevented.
» Learn how to live an environmentally responsible lifestyle.
» Identify ways to conserve energy.
» Get active locally to help resolve an environmental issue.

CURRICULA & RESOURCES
Michigan 4-H Curricula
» Science Blast! in the Class Teacher’s Guide (4H1909): http://4h.msue.msu.edu/resources/4_h_science_blast_in_the_class_teachers_guide
» Eco-Survey: http://4h.msue.msu.edu/resources/eco_survey1
» Junior Citizen Planner: http://4h.msue.msu.edu/programs/environmental_outdoor_education/junior_citizen_planner
» The Walk: Taking Your Youth Outdoors for Environmental Stewardship and Learning! (4H1593): http://4h.msue.msu.edu/resources/the_walk_taking_your_youth_outdoors_for_environmental_stewardship_learning

Other State Curricula
» Amphibians & You: A Look at the Amphibian Crisis, Leader’s Guide and Student Journal (4H5160) (University of Nebraska Extension): http://www.4-hmall.org/Catalog/ProductDetails.aspx?ProductId=4H5160

Continued page 2
4-H Environmental Sciences Project Snapshot

FOCUS ON ENVIRONMENTAL SCIENCES

Science
- Investigate the life cycles of numerous plants, animals, birds, fish and insects.
- Map invasive species using Global Positioning System (GPS) technology.
- Assist conservation groups with animal or fish surveys.
- Work closely with field biologists, fisheries managers and foresters.

Citizenship & Leadership
- Organize a community cleanup of a local area that needs some rehabilitation or environmental care.
- Coordinate a recycling drive.
- Perform a home energy audit.
- Volunteer at a local nature center or environmental center.
- Adopt a highway, river, lake or other outside area for cleanup.

Communication
- Research an environmental issue and prepare a presentation to government officials for resolution.
- Write articles or newsletters about environmental events and issues as well as natural resource topics.
- Present environmental projects to local 4-H clubs, schools or civic groups.

Life Skills
- Use critical-thinking, problem-solving and decision-making skills to help you make good decisions about project management.
- Keep records on your project expenses and income.
- Practice personal resiliency through successes and challenges in your project.

Curricula & Resources, Continued

National 4-H Curricula
- http://www.4-h.org/resource-library/curriculum/

Exploring Your Environment
- Ecosystem Services (08410)
- Earth’s Capacity (08411)
- Facilitator Guide (08412)

Fishing
- Take the Bait: Level 1 (07598)
- Reel in the Fun: Level 2 (07599)
- Cast into the Future: Level 3 (07600)
- Sportfishing Helper’s Guide (07601)

Other Resources

Books

Programs
- Project Aquatic Wild: http://www.maeoe.com/Project_WILD_006H.html
- Project F.I.S.H: http://www.projectfish.org/
- Project Learning Tree: http://www.michiganplt.org/
- Project Wild: http://www.projectwild.org/growningupwild/Michigan.htm

HOW CAN YOU GET INVOLVED?
- Attend 4-H Great Lakes & Natural Resources Camp, 4-H Renewable Energy Camp or 4-H Forestry Fun Camp.
- Participate in the 4-H Youth Conservation Council.
- Contact your local Michigan State University (MSU) Extension office for workshops, activities and events.
- Contact the MSU Extension 4-H state coordinator for environmental education at http://4h.msue.msu.edu/programs/environmental_outdoor_education.
- If you are interested in a college education in the environmental sciences, visit MSU’s website at www.msue.edu.

Adapted with permission from The Iowa 4-H Hot Sheets by Iowa State University Extension, 2011, Iowa 4-H Project Hot Sheet. Retrieved from http://www.extension.iastate.edu/4h/projects/

MSU is an affirmative-action, equal-opportunity employer, committed to achieving excellence through a diverse workforce and inclusive culture that encourages all people to reach their full potential. Michigan State University Extension programs and materials are open to all without regard to race, color, national origin, gender, gender identity, religion, age, height, weight, disability, political beliefs, sexual orientation, marital status, family status or veteran status. Issued in furtherance of MSU Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Ray Hammerschmidt, Interim Director, MSU Extension, East Lansing, MI 48824. This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by MSU Extension or bias against those not mentioned. The name “4-H” and the emblem consisting of a four-leaf clover with stem and the “H” on each leaflet are protected under Title 18 U.S.C. 707. (4H1650 1P-WEB-11:2015-PA) Produced by ANR Communications.