

**Woods-N-Water Walk:
An Investigation
Walk for Knowing
the Land**



An Investigation Walk for Knowing the Land

Timing

Any time of year; best after a Discovery Walk; consider doing an Investigation Walk (or series of walks) after there has been some recent rain or snow, so that you can see variations in moisture in various areas of the landscape.

Duration

50 minutes, but may extend longer if all activity variations are explored!

Location

Almost any location—visit the site before doing this activity to look for specific interesting features such as rotting logs, standing dead trees, or edges of waterways. For a woods walk, consider the edges of meadows at parks, old fields with woody brush, areas with weeds and grasses taking over the site, woodlots or forests with some dead and dying trees, or an urban area with a few trees, bushes or weeds. For a water walk, consider small streams, drainage areas, ditches, small wetland areas or edges of large wetlands, pond edges, rivers, lakes or beaches. Can the site tell a story? Not all objectives may be achievable in any one location. See Appendix C to help locate sites and find resource people to help you on your walk.

OBJECTIVES

After participating, youth will be able to:

- observe and describe how abiotic (nonliving features) of landscapes and watersheds may influence biotic (living) features.
- observe and describe changes in vegetation with respect to landform.
- observe how landscapes vary in moisture, soils, and related vegetation, as well as with any wildlife present.
- describe the impacts of competition and time on plant growth and animal life in an area.

Look especially for a site with some change in the topography (lay of the land), or a low (wet) spot in an otherwise level location; in an urban area the change in elevation may be along the edge of an abandoned lot, drainage ditch, park or a location that appears to be growing wild. Also look for noticeable variety within the site and the surroundings. Even some sites that appear uniform may have an amazing amount of variety when investigated closely.

Life Skills

Keeping records, learning to learn, wise use of resources, critical thinking, self-motivation, self-esteem, observation, constructing meaning, gathering information, self-reflection.

Age/Stage

Best for upper elementary (early adolescents) and older youth, as well as adults.

Subject Areas

Science, English/Language Arts, Social Studies

Correlations

(For more information on the Michigan Curriculum Framework, see Appendix C for contact information for Michigan Department of Education, or <http://cdp.mde.state.mi.us>)

Science: SCI I.1, SCI II.1, SCI III.2, SCI III.4, SCI III.5, SCI IV.2, SCI V.1, SCI V.2, SCI V.3

English/Language Arts: ELA 3, ELA 7, ELA 9, ELA 10, ELA 11

Social Studies: SOC I.1, SOC II.1, SOC II.2, SOC II.4, SOC V.1,

Background

After an Investigation Walk, youth will know the land—they will have made more in-depth observations of features of the landscape or features of watersheds. They will note where these features are located and possible reasons for why they occur where they do! In this activity, the general goal is to help youth view the land at a landscape level, looking at the variety of life, particularly plant life, and how it differs in response to different environments.

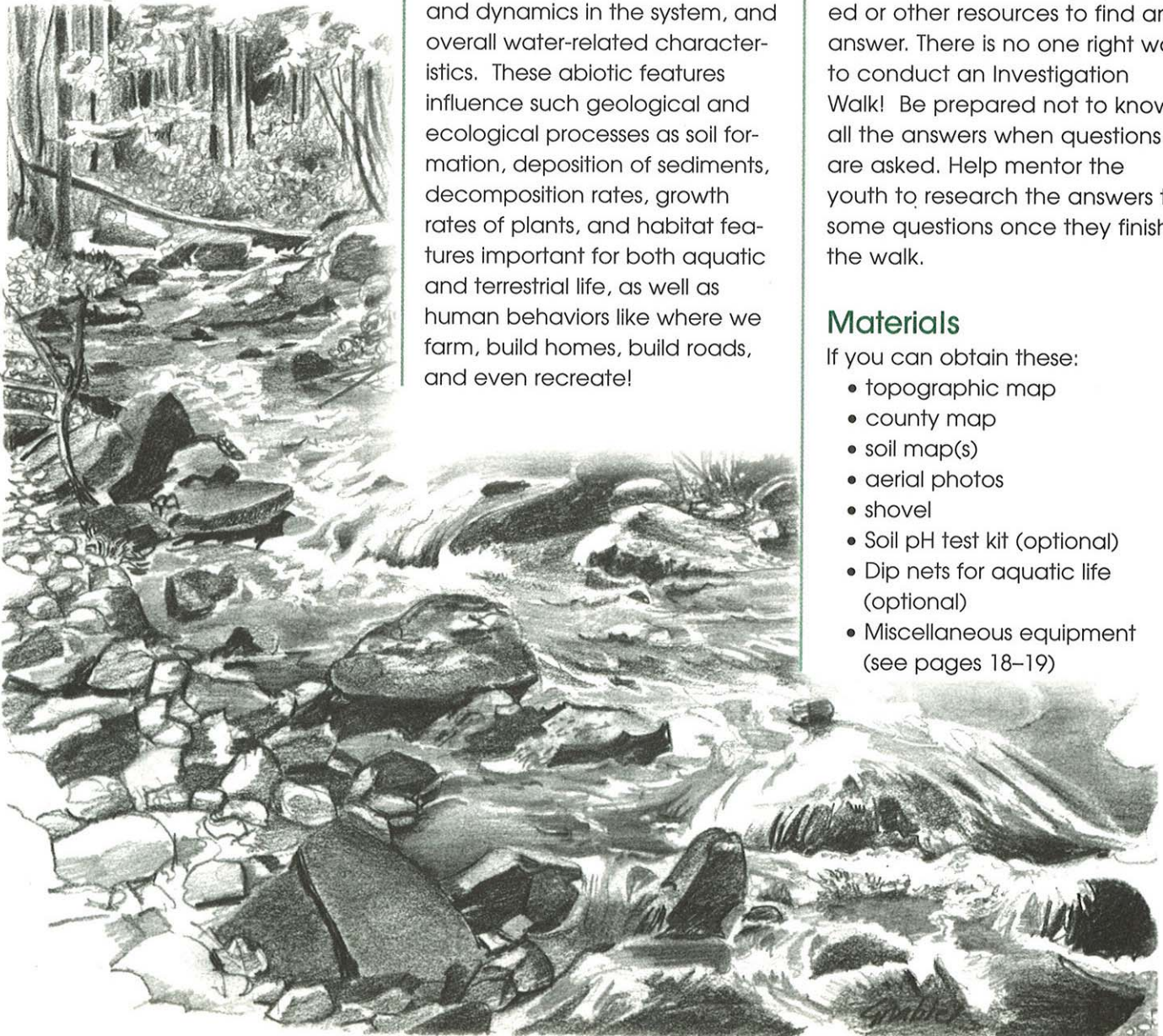
Landscapes are the broader areas of land encompassing both living (biotic) and abiotic (non-living) components. A watershed is the land area drained by a particular network of water bodies such as rivers, streams and lake systems. Abiotic features important in landscapes and watersheds include: soil (and associated bedrock and surface rock features), light available, aspect (the direction—north or south—to which the land faces), slope and gradient of an area, nutrient flow and dynamics in the system, and overall water-related characteristics. These abiotic features influence such geological and ecological processes as soil formation, deposition of sediments, decomposition rates, growth rates of plants, and habitat features important for both aquatic and terrestrial life, as well as human behaviors like where we farm, build homes, build roads, and even recreate!

In this activity, there are two variations of an Investigation Walk, in which youth will experience the variety of plants on a site, and observe the interaction of plants with each other and with the environment. For an Investigation Walk, the youth should be ready and willing to learn and to research questions which arise during the walk that you cannot answer. It is not important whether you can answer all the questions posed, but it is important that you work with the youth in searching printed or other resources to find an answer. There is no one right way to conduct an Investigation Walk! Be prepared not to know all the answers when questions are asked. Help mentor the youth to research the answers to some questions once they finish the walk.

Materials

If you can obtain these:

- topographic map
- county map
- soil map(s)
- aerial photos
- shovel
- Soil pH test kit (optional)
- Dip nets for aquatic life (optional)
- Miscellaneous equipment (see pages 18–19)



Procedure:

Woods-N-Water Walk #1

Getting Ready

Scout your site in advance. You will want to find at least two very different locations within your site, so that youth can compare the two locations. Look for two locations that demonstrate changes in vegetation with respect to landform; topography (elevation—or height of the land above sea level, and aspect—direction to which a slope faces (i.e. north-facing or south-facing)) impact on vegetation present. Likewise, you could compare a low area that typically holds water for some part of the year versus the adjacent dry area (e.g., a hilltop). You could also compare the top of a drainage ditch versus the wet bottom; or compare the edge of a wetland, stream or pond with a hilltop or adjacent dry area.

Regardless of what site you have available, or what you think you may want to investigate, remember to ask yourself the following questions:

What valuable new ideas (lessons) can be investigated within the confines of the site or with interactions among adjacent sites?

How does my site fit into the bigger picture of the landscape or neighborhood?

What outside forces may be affecting the presence of vegetation and animal life on this site?

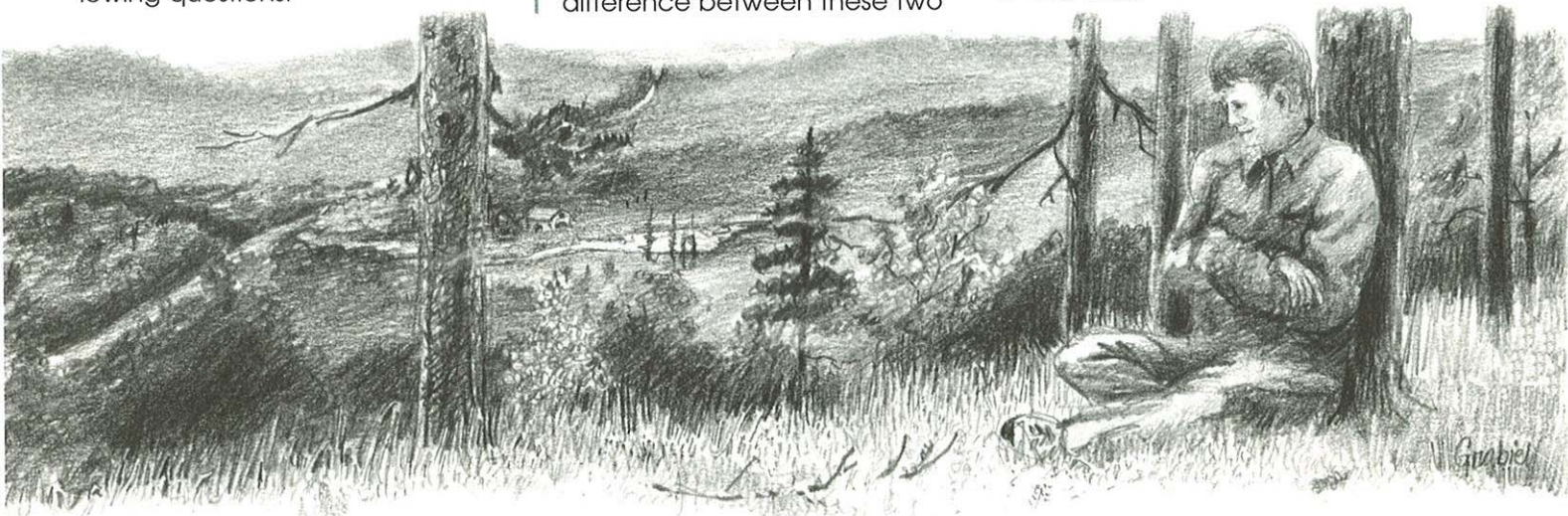
Is there anything I might be overlooking on this site?

Review the site for vegetation differences, especially herbaceous, shrub and tree species that may vary among different locations on the site. Determine the direction that water tends to flow in the area, and the potential effects of elevation, aspect and past disturbance. Ask yourself the question: Why is there a difference between these two

specific locations at this site?

Differences are often associated with the presence or absence of water. Differences can also be caused by sandy soils, amount of light and energy from the sun (solar radiation), aspect, slope, or some combination of the above. (Consult materials available on soils and vegetation from the Natural Resources Conservation Service and the local County Extension offices—see Extensions/Additional Resources, pg. 49.)

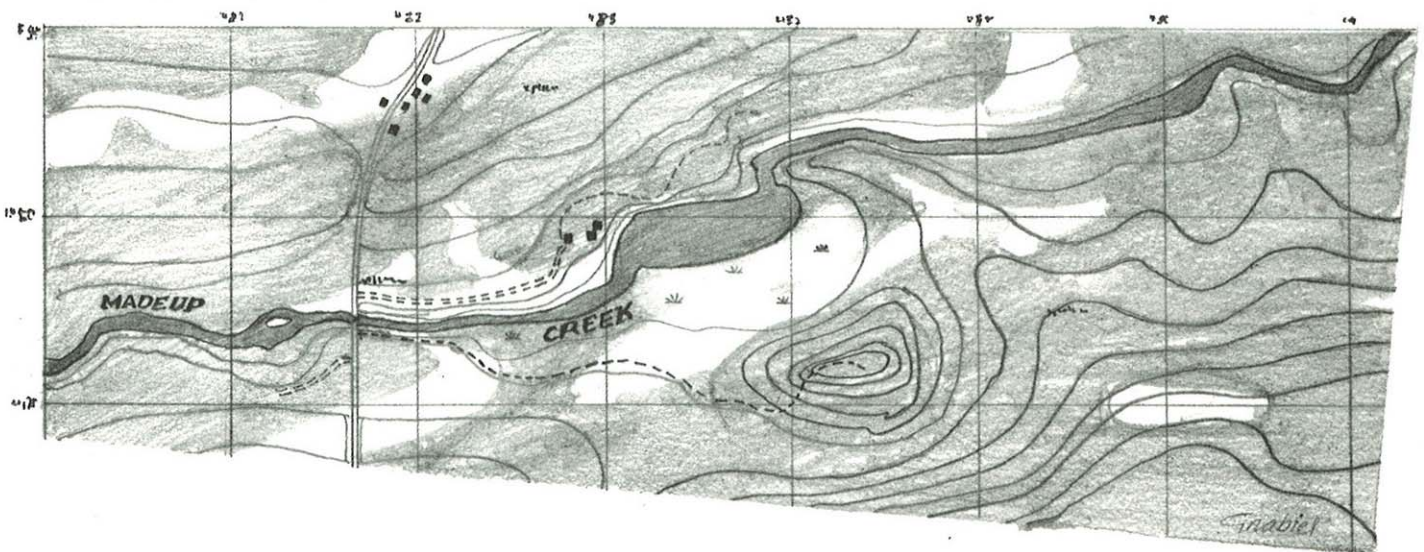
Locate a soil survey for information about the soils in the area before going into the field. Look at a topographic map of the wider area to look for hills, depressions and drainage areas. Use the aerial photos in the soil survey book to look for marshy areas, steep slopes and other features that correspond with information on the topographic map. Photocopies of maps can be used by each participant during the walk.



At the site, look for differences in overstory vegetation, understory vegetation, the amount of shrubs, the thickness of the root mat on the soil surface, the amount of litter on the site, and stains on tree trunks showing old high water levels due to flooding or other site changes.

Dig a small pit (2 X 2 X 2 ft) to determine the differences in soils between two different locations of interest. Note the thickness of the root mat on the soil surface, the amount of litter on top of the root mass, the color of the soil, soil texture, horizons (layers) and thickness. Soil color is normally a darker color in wetter areas and lighter colored in dry areas (organic soils versus dry sands). You will use this soil pit to show soil differences between locations. The key is to find two locations that are obviously different.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



Doing

1. To build enthusiasm for the Investigation Walk, start by showing youth an example of two things that might be found on the walk, by showing how to use one piece of sampling equipment, or by going over a map of the area. Remind the youth that as they walk/hike, they should look up as well as down for interesting sights, and to point out anything interesting they see to you so that it can be shared with the whole group. (Then, be willing to diverge from the central concept selected for the walk if the interest of your youth appears to have moved in a new direction at some time!) If you have visited this site on a Discovery Walk, or if this is an area with which the youth are already familiar, ask youth to describe the different features

they recall from a previous visit (features of the landscape, water features, vegetation, signs of wildlife). If the youth are not familiar with the site, have them stand in one area, and just describe what they notice. Tell the youth that the overall "lay of the land" can be called the landscape. A watershed is the area of land drained by a water system.

2. Have the youth find their location on a county map, a topographic map, and/or an aerial photo (if you were able to obtain these). This may take some time! Let them orient the map by looking at the landscape and waterways they are able to see, and then determine where (according to the map or photo) their site is located. Compare the sources of information. Review the usefulness of each in defining landscapes and watersheds.

3. Take the youth on the walk. Let them view what is around them in relation to what they can see on the topographic map and aerial photos.

4. Ask the youth to describe what the characteristics of the first location and soil pit are. Have them find their location again on the map and photo. Have them spend a few minutes looking around at the landscape, the general water and moisture characteristics of the site, and the light conditions.

Then have the youth examine the soil, itself. Is the soil sandy, clayey, loamy? (If you have a soil map available, have the youth examine this information to determine which soil type should be expected according to the soil map.) Examine any plant root mat, observe the color and thickness of the soil horizons (layers), feel the soil texture, determine soil pH (if possible). Why are so many fine roots so close to the soil surface? Can you tell if this particular piece of land was farmed at one time? What plants are growing on the site? Do the plants appear to be growing well? What animal life is present? (Be sure to look for invertebrates or evidence of their presence in soil, under logs or leaf litter, near mucky edges of waterways, under bark, near rocks, etc.)

5. As you visit each soil pit, view the surrounding areas for changes in vegetation. Remember to ask questions, even if you have no answers with you! Questions could include: What effect does vegetation appear to have on soil development? Does elevation (height of the land above sea level) or aspect (whether a slight slope is facing to the north or facing to the south) appear to affect soil development? Does elevation or aspect affect what plants grow on a site? Do the topographic maps or aerial photos provide clues to differences between sites? Can you make predictions on what other sites might look like based on your experience of the sites visited?

Reflecting and Applying

1. Ask youth a variety of questions about their observations:

How and why did soils vary by location? (Soils which are organic—soils with high levels of decomposed plant material—are found in low-lying wet areas.)

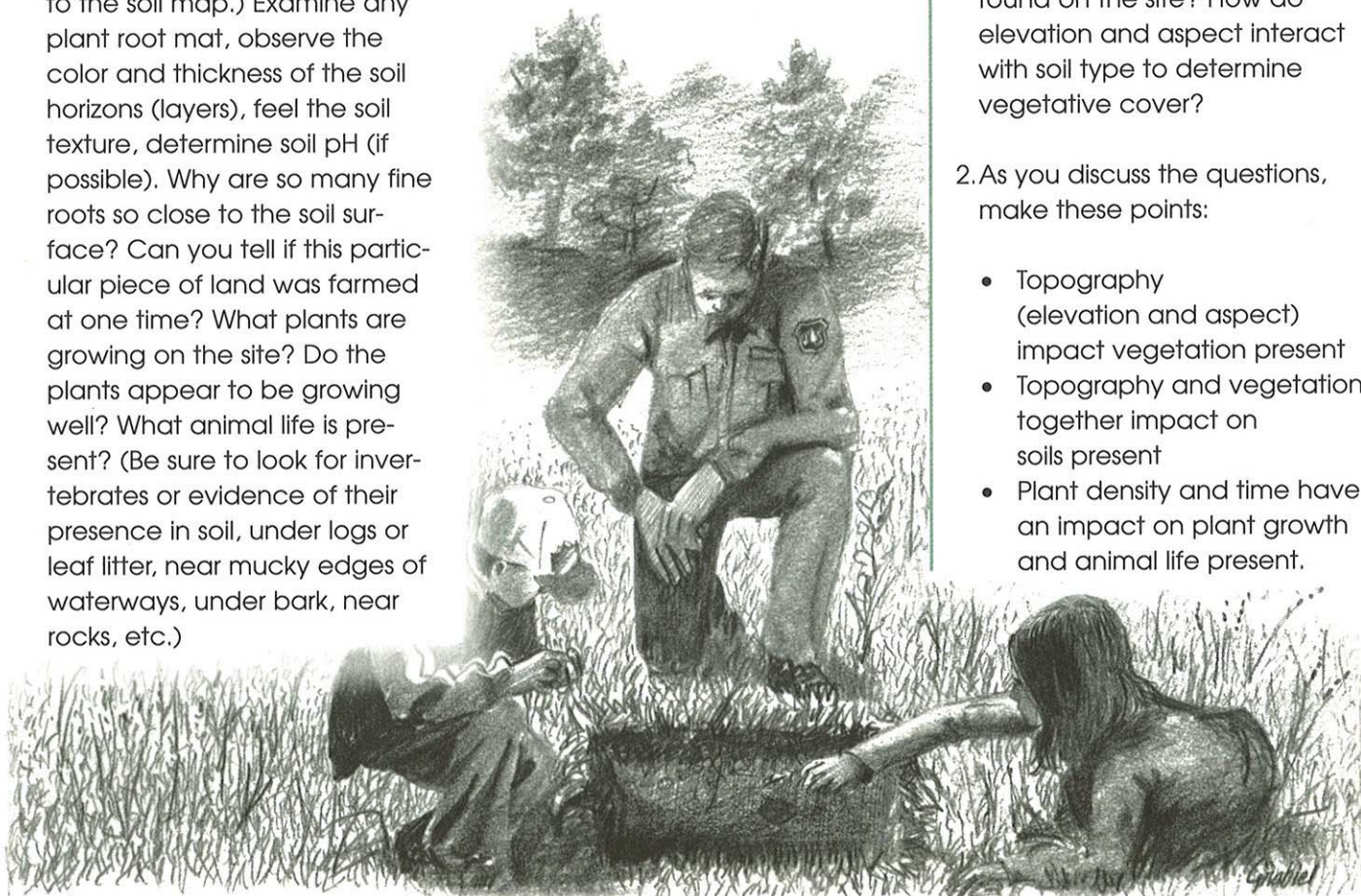
What soils are the best for agriculture, forestry and wildlife?

How would your knowledge of soils on this site help you manage (make decisions about) it? How important are elevation and aspect to soil development?

Are plants affecting soil development, or is the soil type affecting the vegetation found on the site? How do elevation and aspect interact with soil type to determine vegetative cover?

2. As you discuss the questions, make these points:

- Topography (elevation and aspect) impact vegetation present
- Topography and vegetation together impact on soils present
- Plant density and time have an impact on plant growth and animal life present.



Procedure:

Woods-N-Water Walk #2

Getting Ready

Obtain the site information (maps, soil information, aerial photos), if possible, if you choose to use a different site for this Investigation Walk.

Again, scout your site carefully. This time, you are looking for a site which may show past disturbance to the vegetation at the site. These could include: an aspen clearcut (3 to 20 years old), an over-mature pine stand with hardwood understory, a cut-over hardwood stand with large canopy gaps, unmowed edges of parks or other public land areas, city lots abandoned for short and long-terms (2 to 10 years), floodplain areas along rivers, lake edges, or streams or drainage ditches.

Review the site for vegetation types (grasses, weeds, hardwoods, conifers). Try to determine type and frequency of past disturbances to vegetation on the site(s). Ask yourself the question:

Why is there a difference in the vegetation that I find on two locations within this site? Differences can often be attributed to the time since disturbance. What materials are available on past disturbances from local city officials, landowners or state or federal land management officials?

Doing

1. Follow Steps 1–3, in Woods-N-Water Walk #1
2. Ask youth if they know about any of the vegetation differences at the site they are to study. Specifically ask if they have noticed whether or not the vegetation differs within specific locations at the site. If they have not made these observations, take them to two (or more) locations at the site: one which has obviously been highly disturbed (cleared, farmed, paved, built upon, burned, drained, channeled, or even clear-cut or harvested of its trees) in the past, and one which is less disturbed (shrubby, grown over, or even forested). If they have not already made observations about these two (or
3. What is the age of any woody (tree and shrub) species in the two locations? Can you tell by looking at the disturbed vs. less disturbed sites which species can grow in shade and which can grow only in full sunlight? (Those that grow in full sunlight are sometimes called pioneer species—the first to move into an area which has been disturbed in the process called succession, in which plant and animal species successively change over time due to changes in the site.) Which tree species are found in the understory as compared to the overhead canopy? What historically grew on these sites?

more) locations, follow steps 4 and 5 in Woods-N-Water Walk #1. Ask questions regarding soil differences and past evidence of disturbances on the site (Fire scarred stump, pasture on old aerial photo, old lawn versus filled in foundation). What might be the effect of this history on plants found at the site?



4. Count the number of different plant species on each specific location within the site (disturbed vs. less disturbed). Does the recently disturbed site have more or fewer types of plants? Would you expect to find more or less variety shortly after a site disturbance? Which of the sites has more stems per acre (is more densely populated and is showing more competition among plants for needed environmental components such as light, nutrients, water)?

5. Scrape the litter from the soil surface in several locations. Is there more or less vegetative matter on the soil surface in the recently disturbed or the less disturbed site? Is the soil surface covered with mostly new vegetative matter or is there a bed of older decomposed matter under the new vegetative matter? Why would there be a difference? (Older sites which have been disturbed less recently have had more time to accumulate leaf litter and decomposed materials.) Why would this difference be important to holding water and nutrients on a site? Where are the roots located on an older site?

6. Survey the surroundings of the two specific locations. Are there any differences in the number and type of decaying logs on the ground in the different locations? Is there a difference in the number of standing dead trees on the locations? Is there a difference in the amount of bare soil found on each of the locations?

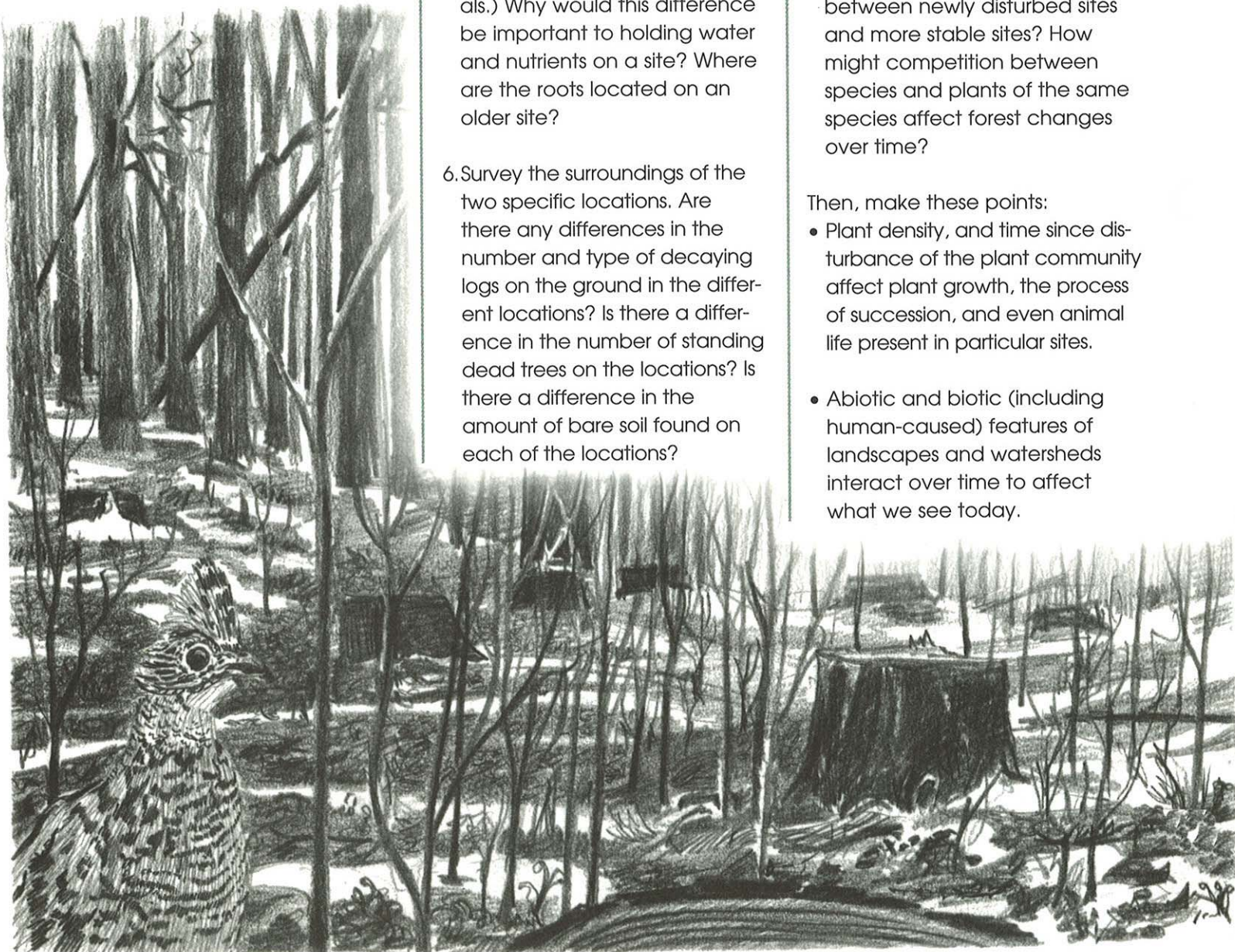
Reflecting/Applying

First, discuss these questions:

- Which locations might provide the best habitat for wildlife? (This will depend on which species and groups of wildlife are sought by the land owner or manager!) Which locations might have the greatest variety of habitats for wildlife?
- Is it necessary to know the normal life expectancy of tree and plant species to understand change in the forest? Is there a difference in the type of species between newly disturbed sites and more stable sites? How might competition between species and plants of the same species affect forest changes over time?

Then, make these points:

- Plant density, and time since disturbance of the plant community affect plant growth, the process of succession, and even animal life present in particular sites.
- Abiotic and biotic (including human-caused) features of landscapes and watersheds interact over time to affect what we see today.



Adaptations

Depending on the site and your choice of activities, youth may collect and press plant parts for identification, count specific features (e.g., plants), measure plant size, map the location of the vegetation and soils/water on the site, explore the site for evidence of animal life, and gain knowledge about the interactions within the plant community and between the plant community and the remaining resources of the site.

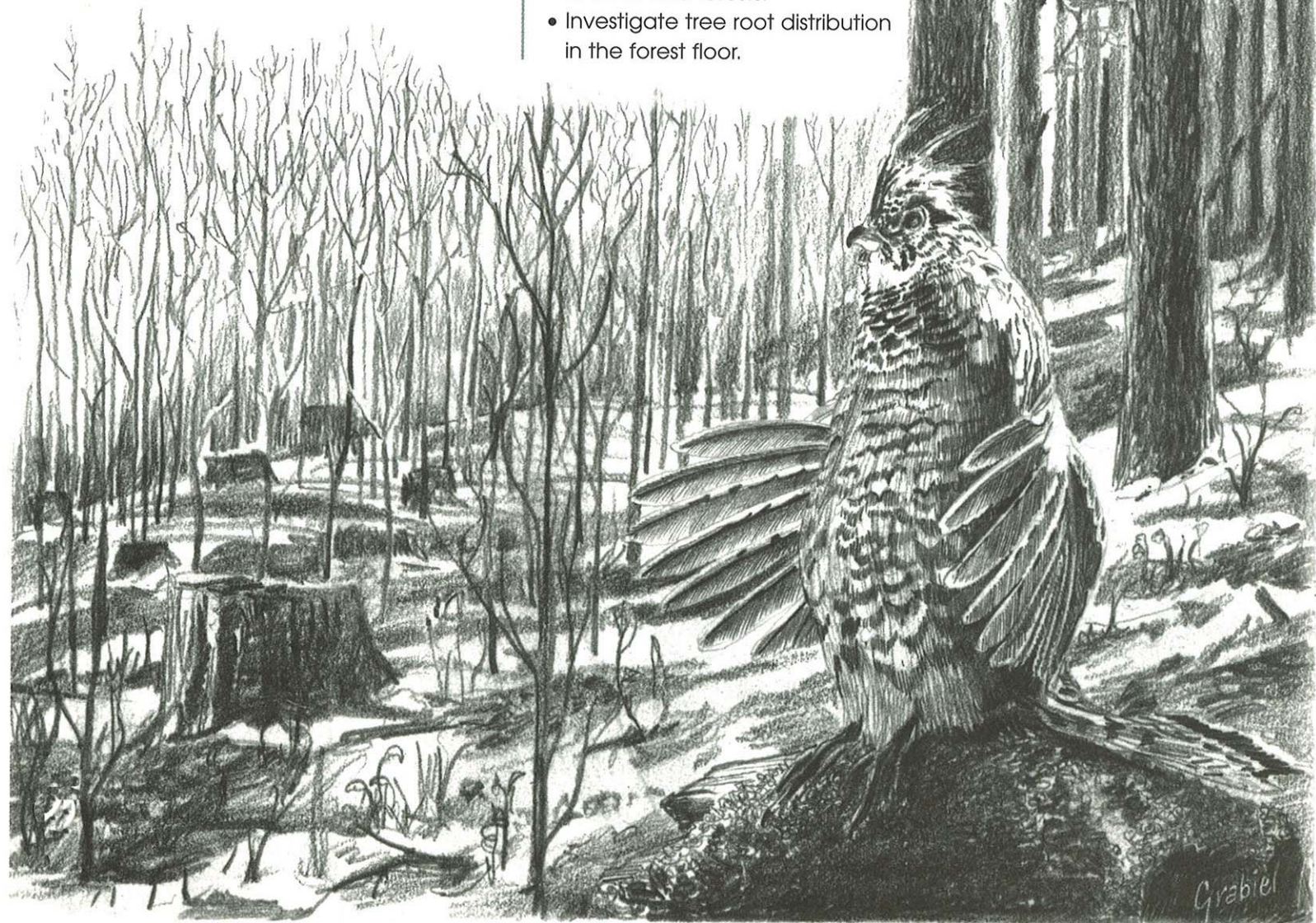
Extensions/Additional Resources

Woods examples:

- Conduct a basic plant and site inventory in the area.
- Compile a basic tree identification notebook with pressed leaves for the site.
- Measure the size and age of trees.
- Dissect downed logs to learn about tree parts.
- Identify the many ways that forest products are used in our culture. Investigate the relationship between tree size and tree age.
- Investigate old age and death of trees and forests.
- Investigate tree root distribution in the forest floor.

Water examples:

see Project F.I.S.H., (<http://www.projectfish.org>), a Michigan aquatic ecology, fisheries and fishing teaching guide and training workshop system for mentors of youth!



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- Pritchett, W.L. and R.F. Fisher. 1987. *Properties and Management of Forest Soils*. 2nd edition. John Wiley and Sons, New York. 494p.
- Project Learning Tree Environmental Education*, available from MUCC. (see Appendix C).
- Topographic Maps and County Map Book available from MUCC (see Appendix C).
- Aerial Imagery Archive, Center for Remote Sensing and GIS, Michigan State University, 204 Manly Miles Bldg., 1405 S. Harrison Rd., E. Lansing, MI 48823
Phone: (517) 355-3771
<http://www.crs.msu.edu>
- Natural Resource Conservation Service Soil Survey books. To contact Michigan offices of the NRCS, find their locations at: <http://www.info.usda.gov/NRCS/mi/directory/index.htm>
See also the Michigan Association of Conservation District offices, by contacting these addresses:
<http://www.nacdnet.org/resources/MI.htm>
<http://www.macd.org/macdset.html>
MACD
PO Box 539, Lake City MI 49651
Phone: (231) 831-6161,
Fax: (231) 839-3361

Community Service

Adopt a site; replant then observe your plantings. Plan a backyard or schoolyard habitat improvement project on a disturbed site. Improve a senior housing area for forest, meadow and wildlife benefits.

Exhibits/Sharing

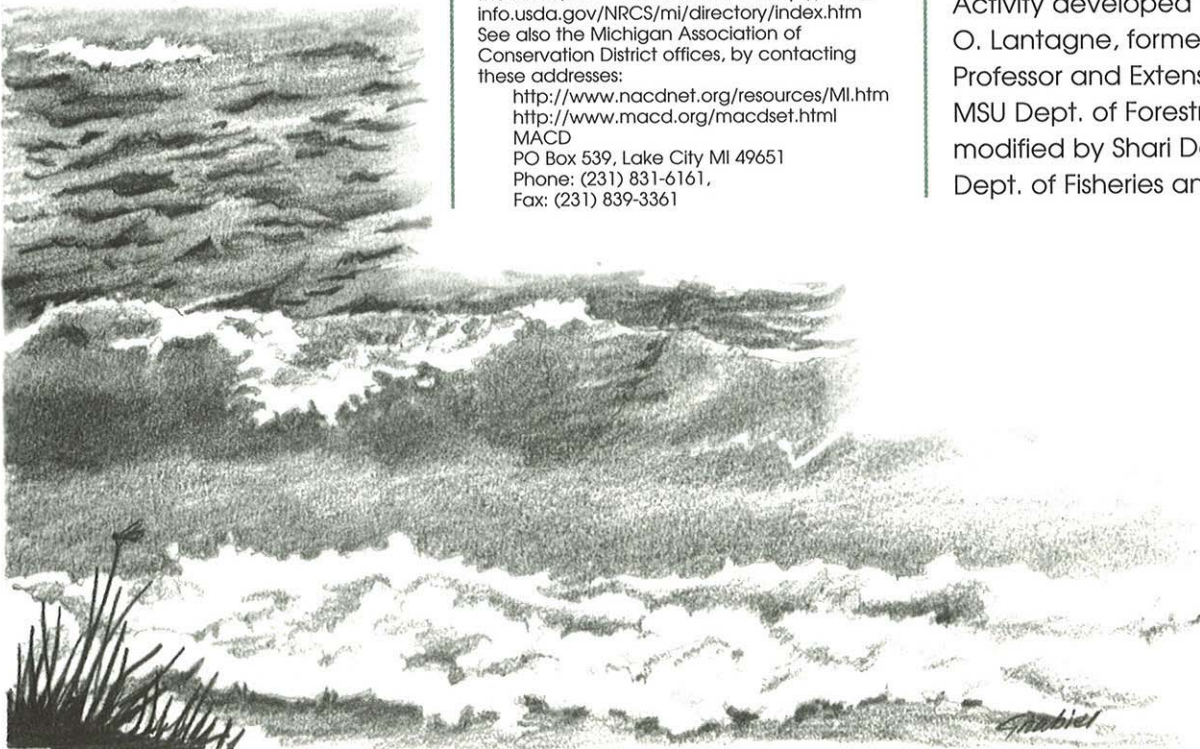
Make a display of the biotic and abiotic features on two very different sites, and explain some of the possible reasons for these differences. Find a highly disturbed area (such as a small clearing, abandoned parking lot, or other such area), and return over time to take pictures to make into an exhibit.

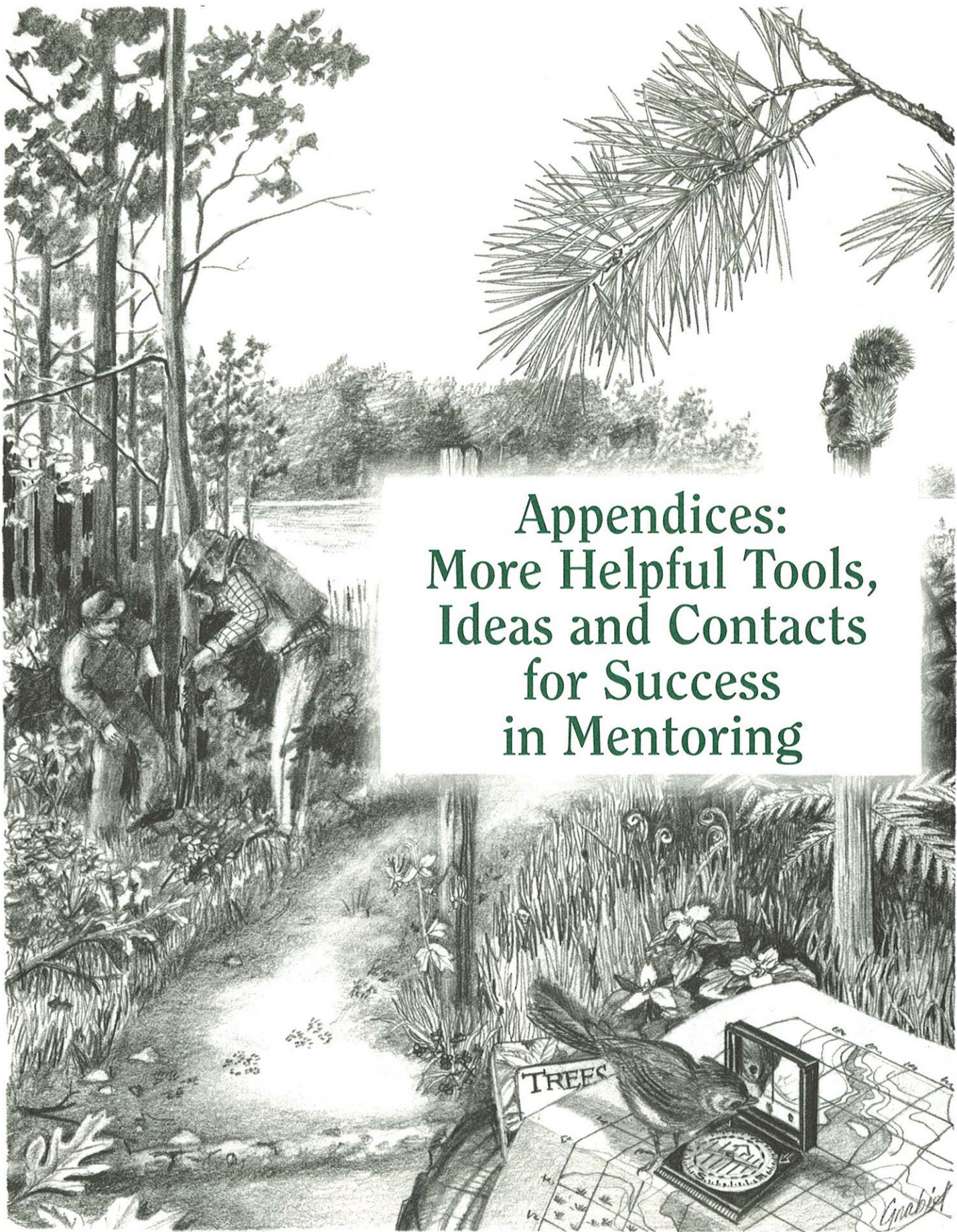
Career Opportunities

Forest manager, wildlife manager, city or regional planner, parks manager, naturalist, environmental scientist

Source

Activity developed by Dr. Douglas O. Lantagne, formerly Associate Professor and Extension Specialist, MSU Dept. of Forestry; edited and modified by Shari Dann, MSU Dept. of Fisheries and Wildlife.





**Appendices:
More Helpful Tools,
Ideas and Contacts
for Success
in Mentoring**

Appendix A

What We Know About Youth Development, Outdoor Interests and Environmental Stewardship

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Introduction

Research on developmental changes of children and teens has a long history. More recently, those concerned with outdoor recreation, environmental education, and (more specifically) outdoor recreation (e.g., fishing) recruitment and retention have been active in research and education. This fact sheet summarizes some of the most useful youth development research. As all youth development specialists would caution, it's important to note that not all people develop in the same way at the same age. But, what we do know, is that there are certain patterns to youth development—certain “ages and stages” that are commonly experienced by most people!

Ages and Stages of Youth Development

Pre-school Years (up to age 5)—Although most 4-H and other organized youth programs rarely start with pre-school aged youth, it's important to start our focus on youth development and outdoor interests at this young age. During this time, the primary influences on the pre-schooler are family members and caregivers.

Physical development during this period is tremendous; young people are developing fundamental large motor skills, movement skills, and language skills. Outdoor play may contribute greatly to the acquisition of these motor skills.

Thinking (or cognitive) skills are also developing rapidly. Thinking processes at this time are intuitive, and depend on perceptions rather than truly logical thought (Schiemberg 1988). Yet, pre-school children are learning to categorize, classify, and organize things into categories (Piaget 1963). Children this age are curious, and ask many questions (Henderson and Moore 1979).

The child's emerging self-concept is based on what he/she is capable of doing (physically, and cognitively). By age 4 or 5, children describe themselves in relation to their possessions, and are



starting to use their peers' evaluations in refining their self-image. They also are able to talk about themselves in terms of "likes" and "dislikes," and see themselves in terms of categories such as gender, age, or activity likes/dislikes.

Since many of today's adults report that they first started their outdoor or environmental interests and activities during these early years, these patterns of early development are important to understand. Encouraging preschoolers to try a variety of outdoor activities, such as exploring or fishing, providing them their "own" outdoor equipment, responding to their curiosity about the environment, practicing important motor skills associated with outdoor activities, and talking about their interests may help incorporate outdoor activities and environmental stewardship into the child's early self-image.

Childhood Years (ages 5-10, grades K-5)—During these years, the child is much more involved with people outside the family. Although physical development is slower and more gradual than during pre-school years, this is still an important time for completion of development of fundamental motor skills (Schiamberg 1988). Children still have limited mobility, and parents limit their "travels" exploring the neighborhood (Rejeski 1982).

During this time, development of the child's thinking abilities is remarkable! For much of this stage, thinking is logical and concrete (Piaget 1963). As this stage ends, (or by about age 11 or 12), thinking becomes more flexible, and the child is able to deal with more abstract concepts, to solve more complex problems, to test hypotheses, and to see multiple viewpoints.

As an example of this cognitive development, children's conceptions of death change. At first, children do not recognize that death is irreversible; they view it as magical and occurring for odd reasons. Later, children view death in concrete terms, but by age 11 or so, they can understand the more abstract concepts of death (Keecher 1975).

As another example of cognitive change in childhood years, consider these changes in interest in the environment (Rejeski 1982). At about age 6 or 7, children are fascinated mostly with the most common and widespread (obvious) features of their environments. Children may not understand complex environmental concepts, because children this age are very "me-centered" in their views of the environment. For example, they may attribute human emotions to inanimate objects (or fish and wildlife).

Between the ages of 7-10, children are the least informed about animals (Kellert and Westervelt 1983). Later (around ages 9-10),

children begin to incorporate both direct, hands-on experience and indirect experiences (e.g., reading) into their ways of understanding and making sense of their environments. During this stage, children are using their new thinking skills to classify objects and use symbols (language, pictures) to describe their world (Rejeski 1982). Now they are able to be aware of human impacts on environments.

Childhood is also an important time for social and personal development. Children's impulsive behaviors are decreasing, and their attention spans are increasing! It is during this stage that feelings of self-competence emerge. In fact, children may define themselves as "I am what I learn" (Erikson 1959). Being successful and receiving positive feedback are important to this age group. By age 8, the child already evaluates him or herself in comparison with others (Schiamberg 1988). This has important implications; how to handle competition (or whether to make an event or learning experience competitive) should be carefully considered.

Later in childhood years, the child becomes less "me-centered" and can understand better the thoughts and viewpoints he/she holds and those held by others (Schiamberg 1988). Also late in childhood, the youth is starting to emerge from the time when they perceive that rules are clear-cut, made by authority figures, and have to be followed for those

reasons. Instead, they are beginning to make decisions on more complex moral issues based on mutual respect for others. (Around the start of adolescence, the young teen takes into account their own more abstract moral/ethical values, principles, and ideals for specific situations.)

So, all of these changes mean that childhood is a great age for development of a lifelong interest in outdoor pursuits and/or environmental stewardship. Children this age are naturally interested in the outdoors, animals and in developing competence in the activities they enjoy. Several recreation researchers have observed that childhood participation in activities may lead to lifelong interest and involvement (Yoesting and Christensen 1978; Kelly 1977).

During childhood, physical abilities make it easier for youth to stay still longer and to use the particular skills necessary in a variety of outdoor pursuits (e.g., walking, using observation blinds, using binoculars, fishing). Yet, their young age and still relatively-short attention span necessitate active learning (with hands-on or group activities). Learning experiences should be fun, trips should be short and planned with children's needs in mind, and the likelihood of success (e.g., seeing animals, seeing animal signs, catching at least some fish—not necessarily large ones or many fish) should be high.

Just what activities are youth exposed to as they grow and develop? Although there are various estimates of how youth participate in outdoor and environmental studies, research in fisheries and wildlife participation sheds some light on this matter.

For example, research in Michigan has shown that by grade 6, up to 90% of youth have had the opportunity to go fishing at least once (Wong-Leonard 1992). Other surveys suggest that the proportion of kids who have tried fishing is slightly different from state to state (probably depending on the amount of fishing opportunities accessible) and may be lower in highly urbanized areas. Yet, consistently, most anglers nationally report that they started fishing before their teen years. Among Michigan's most active anglers, over 91% say they started fishing before age 11, and a surprising 46% started even before age 5 (Dann 1993). So, taking young children fishing and exposing youth, early, to outdoor recreation and environmental study is important!

Adolescence (early adolescence ages 11-15, grades 6-8; later adolescence ages 15-18, grades 9-12)—Adolescence is a time of transition—teens change from depending wholly on family to a life of more freedom, conflicting values, and many influences on their own views and values (Steinberg 1980). Early adolescence (from about age 10 to age 15) in particular is characterized more by change than by stability! There is also very wide variability between teens in their rates of development; some teens may seem like they are 15 years old, "going on" 20, or they may seem more like children!

This time of change in the teen years is, of course, brought on by the dramatic physical changes of puberty. These changes lead to new feelings about one's self, and greater interest in dating/courtship (Hill 1980).

Changes in thinking abilities are also dramatic. Whereas children focus on the concrete, and the "here-and-now," teens are learning to consider possibilities and hypothetical situations, abstract ideas and concepts, and perspectives of others (Hill 1980, Steinberg 1980).

These abilities raise new issues for teens. This age group no longer accepts parents as always being correct (Steinberg 1980), and relationships with parents change. Early adolescents also become more reflective and introspective in thinking about themselves, and concerned about what others think about them.

Peers are increasingly important at this age. Most of a teen's time is spent with friends or classmates (Csikszentmihalyi and Larson 1984); in fact, the most popular leisure activity of teens is spending time with friends. Peers provide teens with companionship, share knowledge, provide status, provide norms to guide behaviors, provide an "escape" from family, and serve as a testing ground for behaviors, emotions, feelings, values and lifestyles (Hartup 1984, Williams and Stith 1980).

The peak time for teens to feel "peer pressure" (the pressure to conform to what other teens expect of them) is around 8th or 9th grade; later, this pressure is lower (Moschis 1987, Steinberg and Levine 1990). The pressure to conform to sex role stereotypes ("traditional" ways of acting based on whether you are male or female) may be especially strong during adolescence, and this pressure may be stronger for girls than for boys (Hill and Lynch 1983). In spite of strong peer pressures, most teens report that they would like to

spend more time talking with parents than they do (Steinberg 1980, Steinberg and Levine 1990).

Identity (identifying with certain goals, ideals) is an important issue for teens. Teens may become more concerned with ethics, career development, and other issues of identity (Schiemberg 1988, Steinberg and Levine 1990). They are more idealistic and future-oriented than children, and are increasingly able to understand complex issues, such as those related to government and politics (Gallatin 1980, Schiemberg 1988).

Research has shown that among today's most active outdoor enthusiasts in angling (and presumably some of the most ardent environmental stewards), most had the opportunity to become even more deeply involved in fishing during teen years (Dann 1993). Anglers reported that several factors may have contributed to their own increased fishing during teen years: access to a car or other transportation, more free time, friends who fish, and changing interests and preferences (Dann 1993). So, retaining youth in their chosen outdoor/environmental activities (e.g., fishing, outdoor exploration) becomes critical during the teen years for developing lifelong interest in the activity!

Similarly, consumer researchers have noted that the attitudes and behavior patterns established during adolescence may carry over into adulthood and become part of a person's way of life (Moschis 1987). Since early adolescence is a key time for trying new hobbies and interests, outdoor activities such as fishing could be a positive experience for teens. These activities and learning experiences through organized clubs help youth adjust to adulthood and are

important links to experiencing enjoyment in activities pursued into the adult years (Caldwell and Bence 1993).

Since teens are gaining mobility and separating from parents, they may, in fact, have a greater opportunity of venturing out to experience outdoor activities with peers. Yet, there may also be barriers to participation in teen years. Since cliques are popular, and a large amount of time is spent socializing, if outdoor pursuits are not perceived as "cool" by a group, even a teen with a good introduction to the outdoors or environmental stewardship during childhood may "quit" perhaps permanently. For example, many anglers reported that work, school and family obligations, and other recreation activities (e.g., sports) prevented them from fishing more often in teen years (Dann 1993). Girls, in particular, may have many more constraints than boys (e.g., lack of transportation, lack of skill, peer pressure to do "girls' things").

One opportunity which exists in the teen years, especially, is that of building on a teen's emerging sense of social responsibility to involve them in community service projects with environmental stewardship outcomes. In fact, in recognition of this development of more interest in social issues and in recognition that social action and citizenship skills are important coping skills for all to develop, many schools require or strongly encourage community service by graduating students. Environmental service projects may allow teens to combine their earlier interests in outdoor and environmental topics with their needs for independence! Working with small groups or even alone on service projects may serve to reinforce young adults' emerging commitment to positive social and commu-

nity participation. More research is definitely needed in this area to understand teens' participation in environmental service projects.

Presently, more research is being conducted to understand some of the complicated patterns of how youth interests in environment and outdoor recreation are influenced by mentors and club involvement. Clearly, programs which specifically attract and keep teens involved are needed (perhaps much more than the one-shot outdoor clinics, derbies or "conservation days" which simply "get kids started" in fishing, camping, or other environmental pursuits) (Dann 1993). There is some evidence that teens seek different elements of their outdoor experiences than do other age groups. For example, in fishing, teens may be quite interested in adventurous fishing (catching lots of fish, catching large fish, as on a charter), or in quiet reflective fishing (as in stream fly fishing alone). So this information, and other background on youth development is vital to those of us offering learning experiences to this age group!

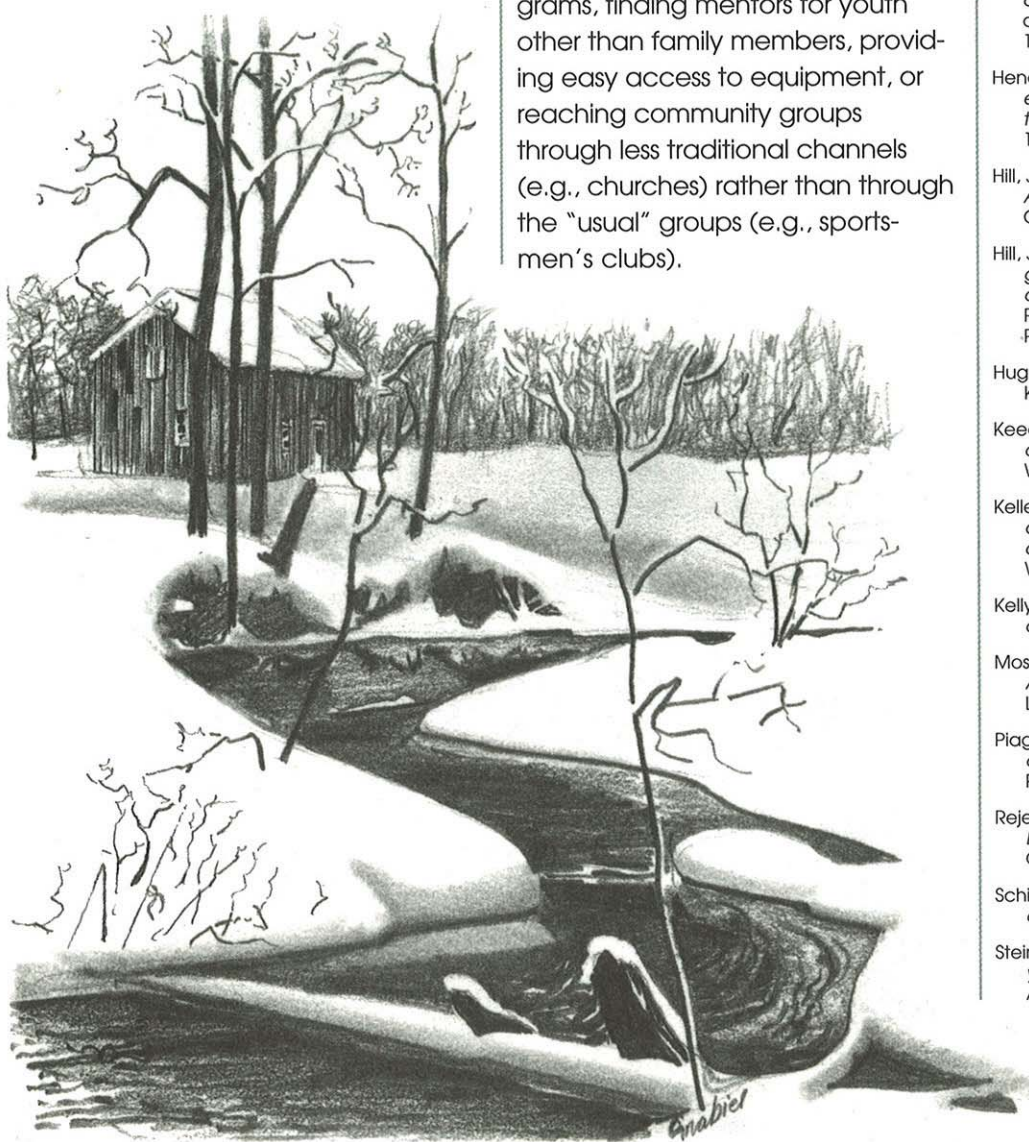
About Youth At Risk

This term usually refers to youth "at risk" of not having the developmental experiences necessary for success in adulthood. Risk factors are usually defined as things that may increase a youth's vulnerability to having problems during the "usual" developmental stages or to display problem behaviors (such as drug use, sexual activity, etc.).

On the other hand, "protective factors," or "developmental assets" are those experiences or environments which promote a youth's healthy development and competence.

Much has been written about youth at risk, and a growing body of information exists on how communities can foster internal (personal) and external (community-based) developmental assets in and for youth (Bensen 1997). Certainly, many youth today lack many of the factors or experiences described in this fact sheet which may help a youth develop lifelong interest in natural resources. It is easy to see how involvement in activities such as outdoor study and recreation may be a low priority for families and young people just "struggling to get by."

Constructive use of leisure time is certainly related to the risk factors and the protective factors faced by today's youth. So, there is indirect evidence that outdoor activities (such as fishing, exploring, stewardship) can help a young person develop constructive habits for his/her free time! It's always essential to consider that among any population of youth and families, some might be considered "at risk," and thus have other concerns than whether or not they go fishing on a particular day. Targeting specific outdoor and environmental learning experiences for at risk audiences may mean: providing special transportation, working with neighborhood associations or parks programs, finding mentors for youth other than family members, providing easy access to equipment, or reaching community groups through less traditional channels (e.g., churches) rather than through the "usual" groups (e.g., sportsmen's clubs).



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Appendix B

Sample Press Release: “New Outdoor Club for Youth to Start at Local Park”

A press release such as the one shown can be shared with local/county weekly newspapers, outdoor writers for daily papers, and editors of local newsletters. Also consider making a flyer (with information similar to the main details of this press release) and posting it at local schools, day care centers, or other places where groups of youth meet.

Press Release—For Immediate Release
Contact: Susy B. Mentor, and Billy B. Volunteer

New Outdoor 4-H Club at Sunnyside Park

Join in the fun! A new 4-H club is forming, with meetings to be held at Sunnyside Park. This new 4-H club will focus on outdoor fun and learning activities for youth from 5–19 years old.

If you and your child or teenager would like to learn about fishing, outdoor activities (hiking, camping), wildlife, conservation, birds, insects, or anything else to do with the outdoors, join in the first meeting for this new club. Come to Sunnyside Park (on Grand Ave. in northwest Villageburg)—on Saturday, September 23, from 2–4 p.m. (Families will need to pay a small park entry fee to enter the Park.)

At this meeting, the youth will play outdoor/conservation games, prepare a tasty treat for your bird feeder area, meet each other, and talk about interests. Parents will learn about how the 4-H club can be organized and what it will involve. Monthly meetings after this will focus on specific outdoor, conservation or environmental interests the youth and families share!

Be sure to come ready to go outdoors for a brief time, if weather permits! Wear boots, hats, gloves, a warm coat, snow pants and scarf. We'll share hot cocoa and a snack afterwards.

For more information or to RSVP for the meeting, call Susy B. Mentor at 000-555-1212; Billy R. Volunteer at 000-555-1212 (evenings) or Jean B. Youthstaff at the County MSU Extension (4-H) office at 000-555-1212. Youth from all areas surrounding Sunnyside Park are welcome. Parents or guardians are strongly encouraged to attend this and other meetings and activities with their youths!

