

THE WALK

Taking Your Youth Outdoors for
Environmental Stewardship and Learning!
How to Get Started in Natural Resources/Environmental Education
*...for Mentors and Educators, Including
Volunteers, Teachers, Parents, Extension Staff, and others*

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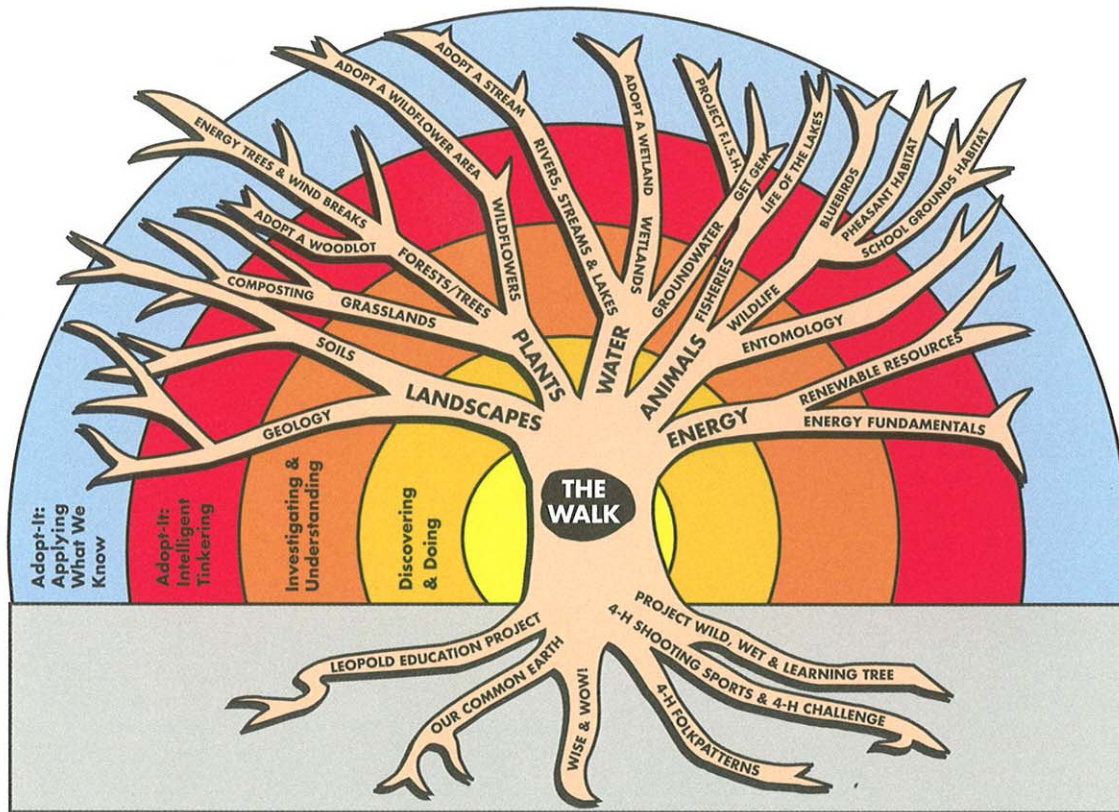
4-H 1593

4-H Youth Development
Children, Youth and Family Programs
Michigan State University Extension



Teaching Resources in Environmental Education

4-H Natural Resources & Environmental Education Curriculum



The “TREE”—Teaching Resources for Environmental Education in Michigan’s 4-H Natural Resources and Environmental Education Program*

About this publication

This publication is the core, or “heartwood,” for youth and their mentors interested in outdoor and environmental stewardship education. In addition, youth can move through many projects aimed at building complex skills as they progress. For example, activities in this guide “The Walk” are at the core of the 4-H (NREE) experience—a starting point for exploration.

Once a youth has an exploratory experience through a Discovery Walk, or other opportunity, there is a branching set of experiences that youth may choose to explore and learn about, with each branch progressing to higher and higher levels of learning:

The Roots:

These existing programs and projects are designed mainly as building environmental awareness, basic ecology knowledge, or outdoor skills.

Discovering and Doing:

These projects build overall basic environmental awareness and understanding of science and provide very active learning experiences which are important for younger youth (ages 8-13) or for youth with limited previous experience in environmental stewardship.

Investigating and Understanding:

These projects allow youth more topical specialization in learning and development of specific environmental science knowledge of concepts and investigation skills.

Adopt-It: Intelligent Tinkering:

One of the best ways to know if one understands a complex ecological system is to conduct carefully planned projects and observe outcomes. These projects are real-life, on-the-land stewardship projects.

Adopt-It: Applying What We Know:

These advanced learning experiences focus on understanding complex environmental issues, analyzing them, and taking positive, constructive and informed action.

*The design for the TREE shown above, was developed by Bud Schulz and David Schulz.

About this Guide: A Pathway to Success in Mentoring Youth in the Outdoors

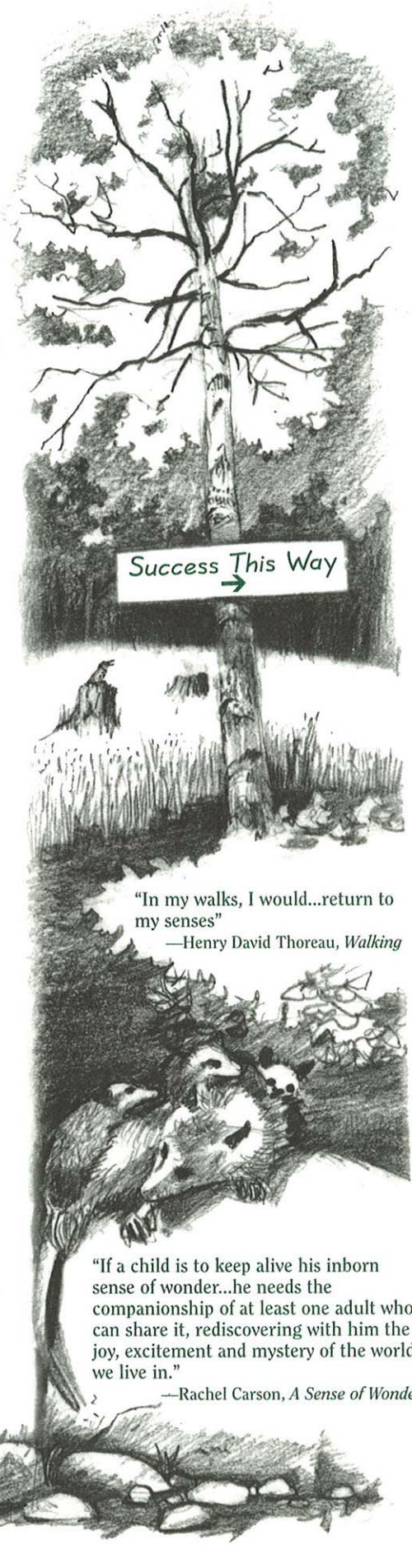
This guide is for any adult or teen interested in sharing the wonders of our natural heritage and natural resources, outdoor recreation, or environmental science and stewardship with youth, especially those youth ages 8–13. Ideas in this guide will also work well with older youth, and even adults—especially those who have had little opportunity to be in and enjoy the outdoors. In this guide, we outline a “Pathway to Success” in starting a mentoring program which provides long-term, club based learning activities for youth. We hope that as you use this guide, you choose to affiliate your youth outdoor and environmental stewardship learning program with the Michigan 4-H Natural Resources/ Environmental Education program! More about that, later...

No matter the area of interest of a volunteer or other educator, this guide is designed to share the starting steps on a “Pathway to Success.” One of the early steps in the pathway to a successful program for youth is “The Discovery Walk.” This is a learning activity designed to get your group started with simple discovery walks which can be led in any environment—rural, suburban, urban—in any season. This guide also has many other learning activities and tips for introducing parents, teachers, youth organization leaders, and teen leaders to how to plan a variety of learning experiences. These could include classroom or club experiences, field trips, visits by resource people, community events, or community service projects with environmental themes.

Why Should I Get Involved?

All young people have an interest in their environment. Youth may have interests ranging from rocks and minerals (“stone-picking” as some might say), animals, insects, collecting natural treasures such as feathers, wildflowers, pine cones, and other outdoor souvenirs, and even just getting outdoors and getting dirty! A lucky few youth find adults to help guide their discoveries and to support their interests...some do not, and develop fears or avoid outdoor settings in even urban or suburban areas.

Above and beyond all, making a commitment to take youth outdoors, no matter the environment where you live, and to explore, learn, discover and care requires a long-term vision. That’s why this book is written for the mentor—an adult or older teen who chooses to spend indepth time, over a long time span, guiding a young person’s development of lifelong observation skills, personal interests, and stewardship for their local communities.



“In my walks, I would...return to my senses”
—Henry David Thoreau, *Walking*

“If a child is to keep alive his inborn sense of wonder...he needs the companionship of at least one adult who can share it, rediscovering with him the joy, excitement and mystery of the world we live in.”

—Rachel Carson, *A Sense of Wonder*





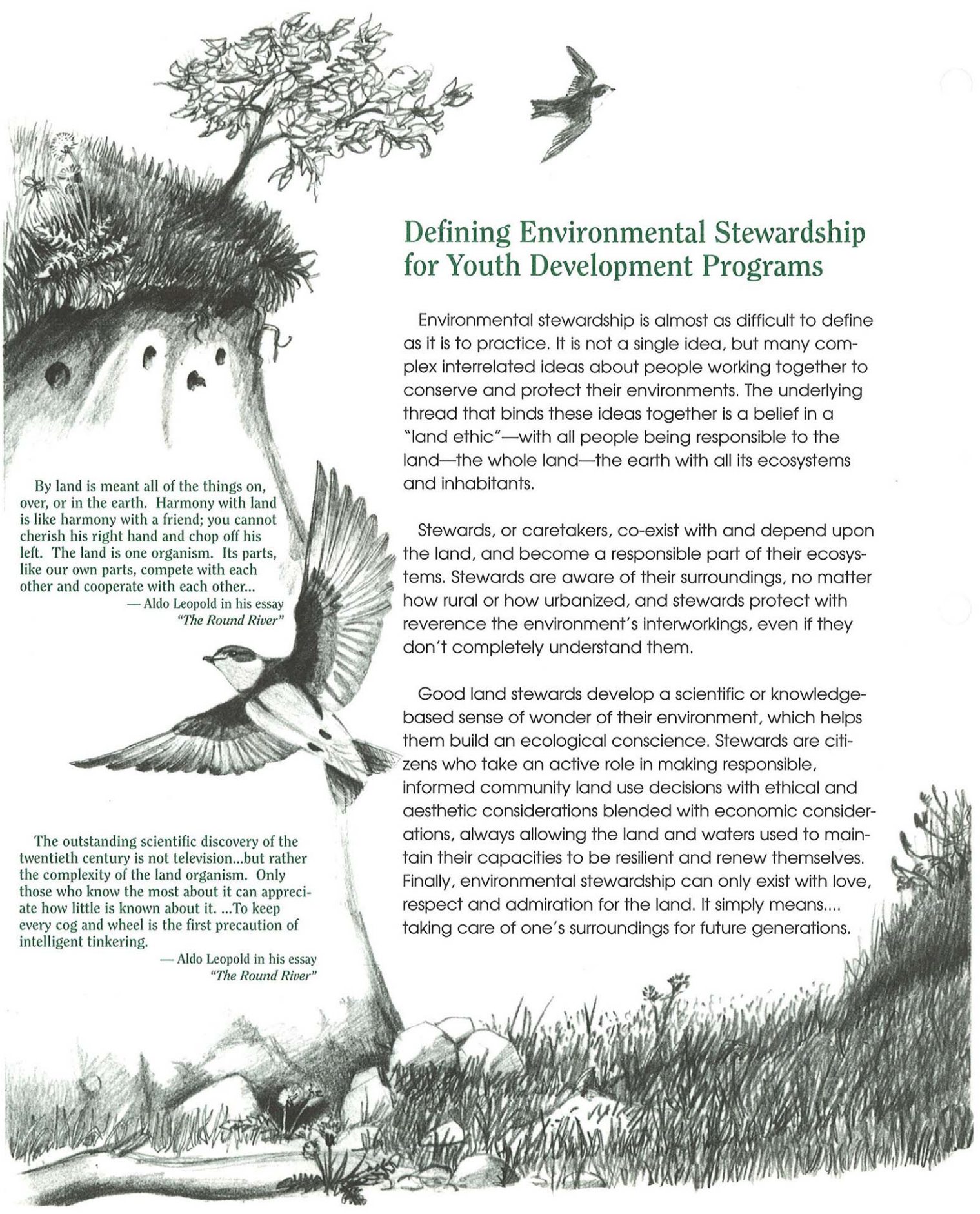
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What Is Environmental Stewardship?



Defining Environmental Stewardship for Youth Development Programs

Environmental stewardship is almost as difficult to define as it is to practice. It is not a single idea, but many complex interrelated ideas about people working together to conserve and protect their environments. The underlying thread that binds these ideas together is a belief in a “land ethic”—with all people being responsible to the land—the whole land—the earth with all its ecosystems and inhabitants.

Stewards, or caretakers, co-exist with and depend upon the land, and become a responsible part of their ecosystems. Stewards are aware of their surroundings, no matter how rural or how urbanized, and stewards protect with reverence the environment’s interworkings, even if they don’t completely understand them.

Good land stewards develop a scientific or knowledge-based sense of wonder of their environment, which helps them build an ecological conscience. Stewards are citizens who take an active role in making responsible, informed community land use decisions with ethical and aesthetic considerations blended with economic considerations, always allowing the land and waters used to maintain their capacities to be resilient and renew themselves. Finally, environmental stewardship can only exist with love, respect and admiration for the land. It simply means... taking care of one’s surroundings for future generations.

By land is meant all of the things on, over, or in the earth. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left. The land is one organism. Its parts, like our own parts, compete with each other and cooperate with each other...

— Aldo Leopold in his essay
“The Round River”

The outstanding scientific discovery of the twentieth century is not television...but rather the complexity of the land organism. Only those who know the most about it can appreciate how little is known about it. ...To keep every cog and wheel is the first precaution of intelligent tinkering.

— Aldo Leopold in his essay
“The Round River”

What's unique about this description of stewardship is that it implies more than just an awareness or knowledge of field natural history or ecology! It means more than just knowing about environmental science! It means developing a personal connection (through direct experience and service projects) with one's environments, no matter whether urban, suburban or rural. Stewardship might develop because of a tie to local natural resources and to mentors who share recreation interests with

youth, such as hiking, fishing, or shooting. We also know that family and/or long-term connections with mentors help to cement that long-term commitment and action we call stewardship. Although researchers don't fully understand all of the experiences which truly lead to stewardship, enough evidence exists to say that a wealth of connections, in a network of caring adults and mentors, will provide a youth a chance to develop in his/her stewardship actions.

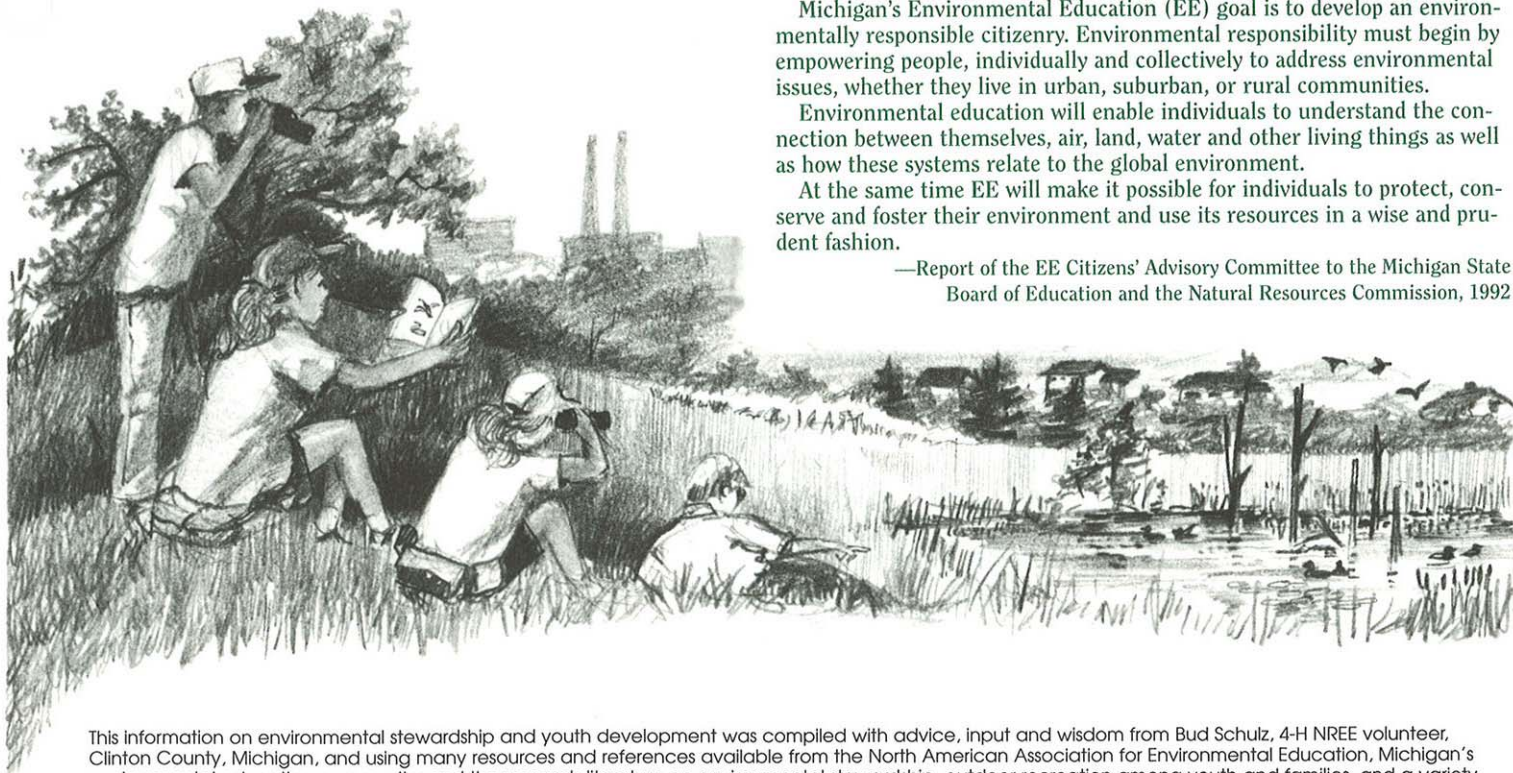
This is what this guide is for—to outline all of the important components of a program which will help set a course for youths' stewardship into the future. No other guide charts the way to direct, outdoor, learning experiences, using the program philosophies and approaches outlined here! So read on, and enjoy your journey with youth!

Michigan's Environmental Education (EE) goal is to develop an environmentally responsible citizenry. Environmental responsibility must begin by empowering people, individually and collectively to address environmental issues, whether they live in urban, suburban, or rural communities.

Environmental education will enable individuals to understand the connection between themselves, air, land, water and other living things as well as how these systems relate to the global environment.

At the same time EE will make it possible for individuals to protect, conserve and foster their environment and use its resources in a wise and prudent fashion.

—Report of the EE Citizens' Advisory Committee to the Michigan State Board of Education and the Natural Resources Commission, 1992



This information on environmental stewardship and youth development was compiled with advice, input and wisdom from Bud Schulz, 4-H NREE volunteer, Clinton County, Michigan, and using many resources and references available from the North American Association for Environmental Education, Michigan's environmental education community, and the research literature on environmental stewardship, outdoor recreation among youth and families, and a variety of other topics.

If you would like additional information about a national curriculum framework for Environmental Stewardship, read this reference: *Excellence in Environmental Education: Guidelines for Learning (K-12)*, (available from North American Association for Environmental Education, <http://www.naaee.org>). This national framework was developed mainly with teachers in mind, but it points the way to age-appropriate learning experiences for today's youth. In addition, see Appendix A for information about how communities can best structure programs and services to develop positive assets which enhance youth development.

The Outdoors, Mentors, Youth Development & Stewardship are Intertwined

Direct Connection

- Outdoor Experiences
- Scientific Nature Study
- Sense of Belonging to a Place
- Community Service
- Time to Reflect
- Recreation

Life Skills

- Communications
- Critical Thinking
- Ethical Reasoning
- Positive Belief in Self
- Resolving Conflicts

Stewardship

- Doing Service & Action Projects
- Consumer Choices
- Habitat Conservation
- Teaching Others
- Leadership
- Citizenship, Community Participation
- Careers
- Lifetime Hobbies

Mentors & Other Supporters

- Family
- Friends
- Teachers, Volunteers
- Teen Leaders
- Other Caring Adults

Knowledge of Ecology

- Nature Study
- Ecology Concepts
- Environmental Science
- Monitoring/Inventorying Environments

Action Skills

- Investigating Issues
- Planning Action Projects
- Contacting Resource Professionals
- Citizenship Skills

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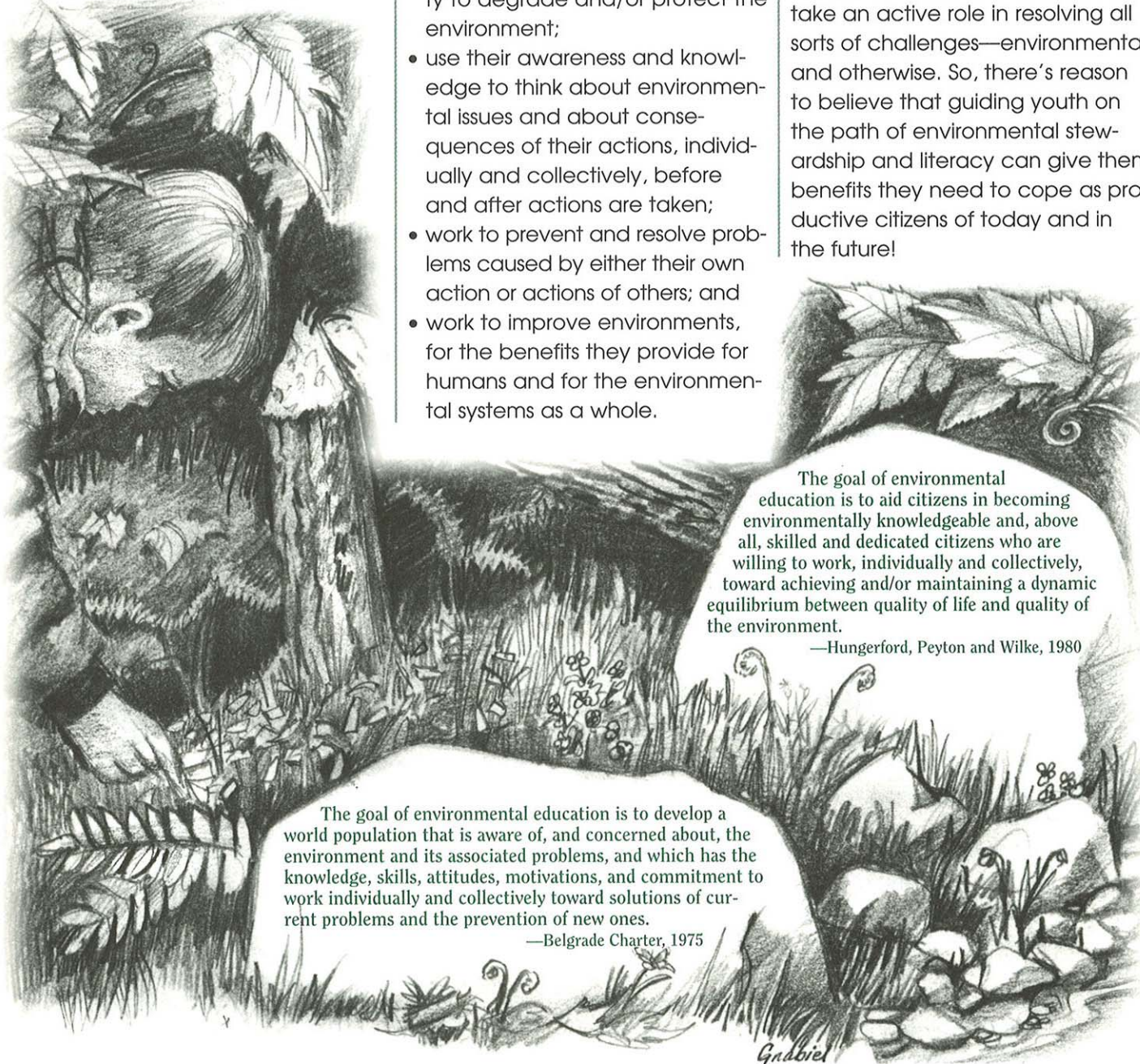
Youth Development and Environmental Stewardship

Does developing a sense of environmental stewardship in youth help in their overall development? Perhaps! Though there are many things that researchers don't know about how to help a person develop into a "responsible environmental steward," we do know a little. First, let's take a closer look at what it means to be a steward, or an "environmentally literate" person.

Environmentally literate persons:

- are connected to their environments, through direct experiences which help them hold a sincere "sense of place"—or a sense of belonging to a place;
- have awareness and concern about environments;
- work to understand, from a scientific basis, both the environment as a system and the roles humans play in these systems;
- think about how the development of technology has the ability to degrade and/or protect the environment;
- use their awareness and knowledge to think about environmental issues and about consequences of their actions, individually and collectively, before and after actions are taken;
- work to prevent and resolve problems caused by either their own action or actions of others; and
- work to improve environments, for the benefits they provide for humans and for the environmental systems as a whole.

If we work to help young people grow to become environmentally literate "stewards," we are probably helping them in many ways. Being a steward takes personal skills—like critical and creative thinking, scientific understanding, and self-reflection about lifestyles and other choices. Becoming a steward means developing interpersonal skills, too—like skills in communication, group problem solving, ethical decision making, and conflict resolution. All of these skills will be needed in our society, in order that citizens are able to take an active role in resolving all sorts of challenges—environmental and otherwise. So, there's reason to believe that guiding youth on the path of environmental stewardship and literacy can give them benefits they need to cope as productive citizens of today and in the future!



The goal of environmental education is to aid citizens in becoming environmentally knowledgeable and, above all, skilled and dedicated citizens who are willing to work, individually and collectively, toward achieving and/or maintaining a dynamic equilibrium between quality of life and quality of the environment.

—Hungerford, Peyton and Wilke, 1980

The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

—Belgrade Charter, 1975

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An Environmental Stewardship Learning Model

At the heart of positive, youth development environmental stewardship programs, is the philosophy that we meet youth “where they are”—by first providing them a setting for learning where they can focus their interests, and discuss their ideas (or even misconceptions or fears or hopes) they have to start with. Some youths may not have ever had this opportunity with regard to environments or with other areas of learning! As the youth leader helps guide the discovery learning of others, following this model (or design), can help enhance every learning session.

The youth leader’s role:

DO

Facilitate self-directed discovery and awareness-building by youth; provide a developmentally appropriate learning activity which is a common experience for all participants. General environmental stewardship objectives are to help youth to:

- Experience, discover
- Investigate
- Plan, implement
- Take action

REFLECT

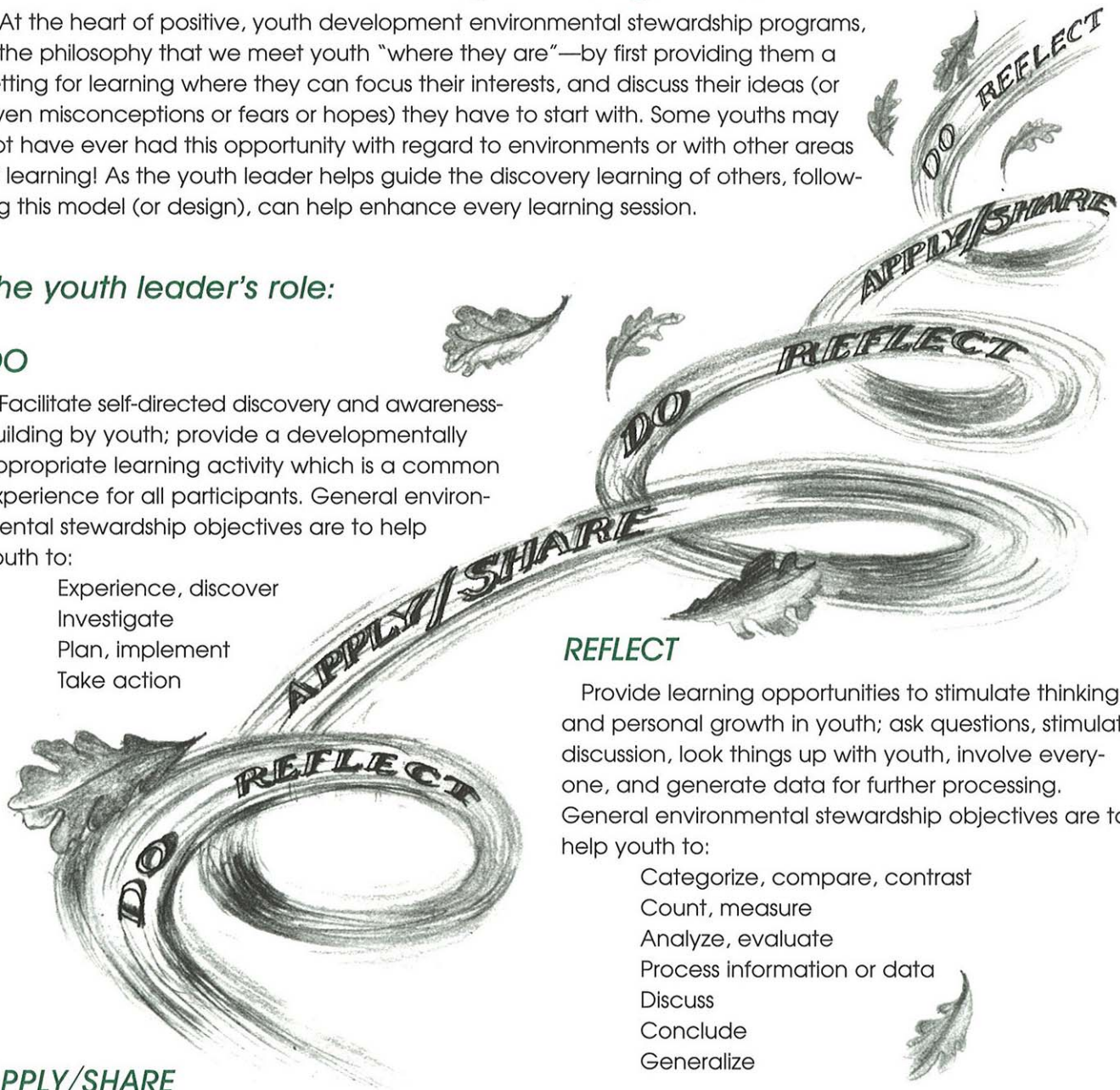
Provide learning opportunities to stimulate thinking and personal growth in youth; ask questions, stimulate discussion, look things up with youth, involve everyone, and generate data for further processing. General environmental stewardship objectives are to help youth to:

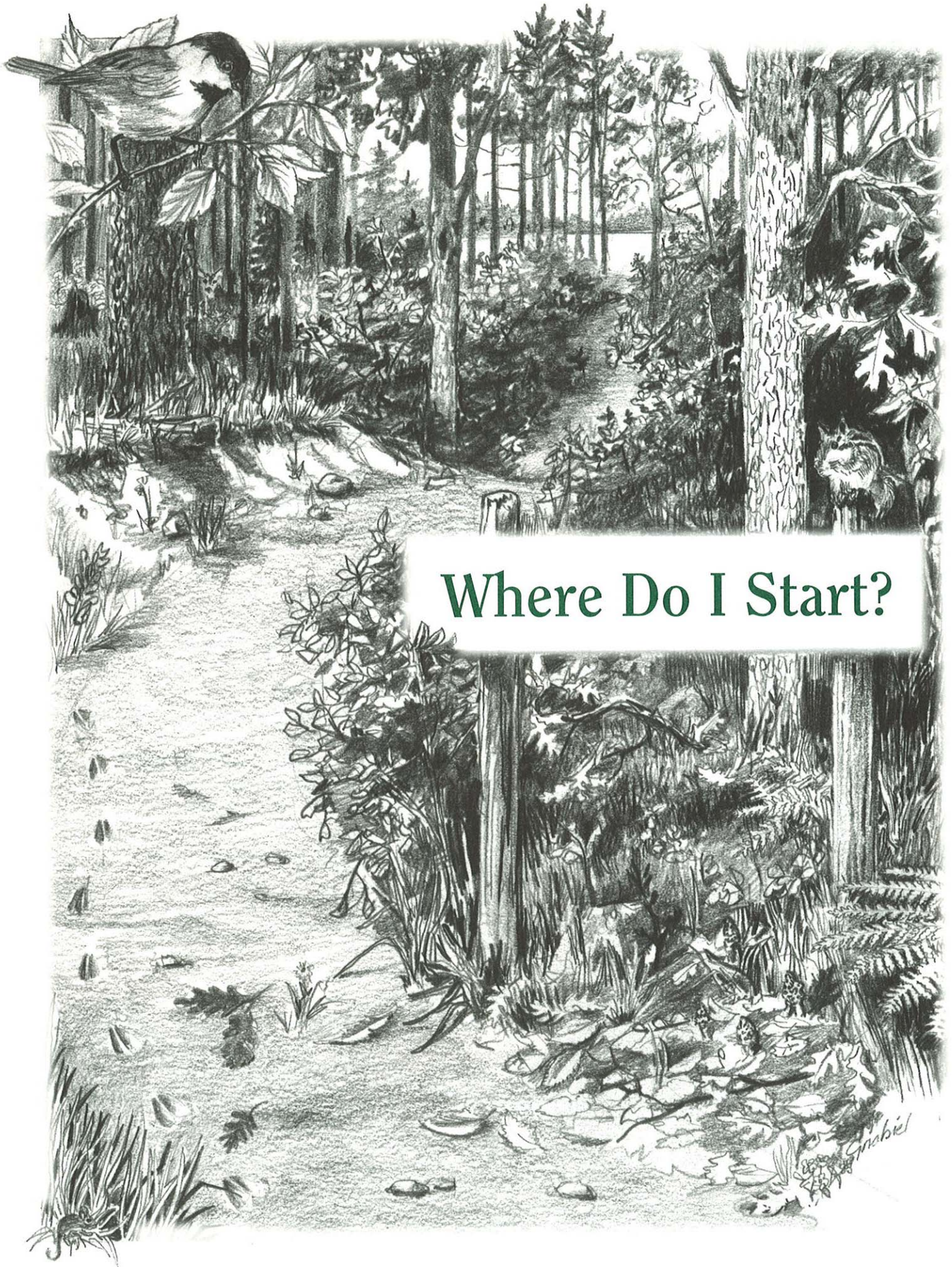
- Categorize, compare, contrast
- Count, measure
- Analyze, evaluate
- Process information or data
- Discuss
- Conclude
- Generalize

APPLY/SHARE

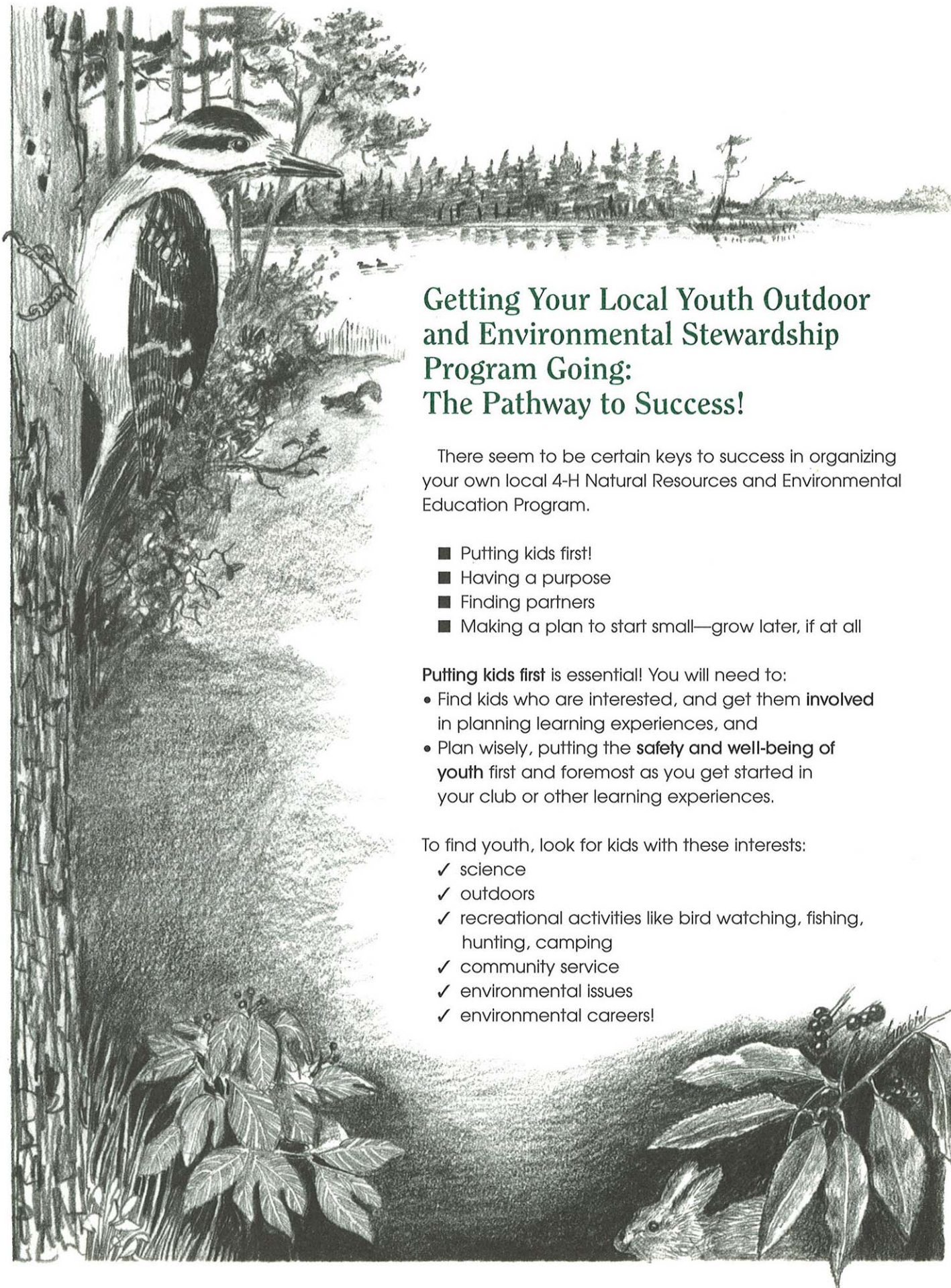
Guide participants to broader perspectives and applications for what they have learned; help youth build personal meaning for what they have observed, reflected upon, and learned; help youth make personal and group contributions to applying their learning in service and action projects which make a real difference in communities; have youth consider how their actions are connected to other tasks/events/activities/projects in the community. General environmental stewardship objectives are to help youth to:

- Apply information to new situations
- Teach, train and mentor others
- Publicize, display findings
- Anticipate or predict problems
- Solve a new problem
- Take responsible, informed action as a citizen
- Make lifestyle or lifelong learning decisions
- Plan for more learning in the short- and long-term





Where Do I Start?



Getting Your Local Youth Outdoor and Environmental Stewardship Program Going: The Pathway to Success!

There seem to be certain keys to success in organizing your own local 4-H Natural Resources and Environmental Education Program.

- Putting kids first!
- Having a purpose
- Finding partners
- Making a plan to start small—grow later, if at all

Putting kids first is essential! You will need to:

- Find kids who are interested, and get them **involved** in planning learning experiences, and
- Plan wisely, putting the **safety and well-being of youth** first and foremost as you get started in your club or other learning experiences.

To find youth, look for kids with these interests:

- ✓ science
- ✓ outdoors
- ✓ recreational activities like bird watching, fishing, hunting, camping
- ✓ community service
- ✓ environmental issues
- ✓ environmental careers!



Consider connecting your local program to these types of efforts:

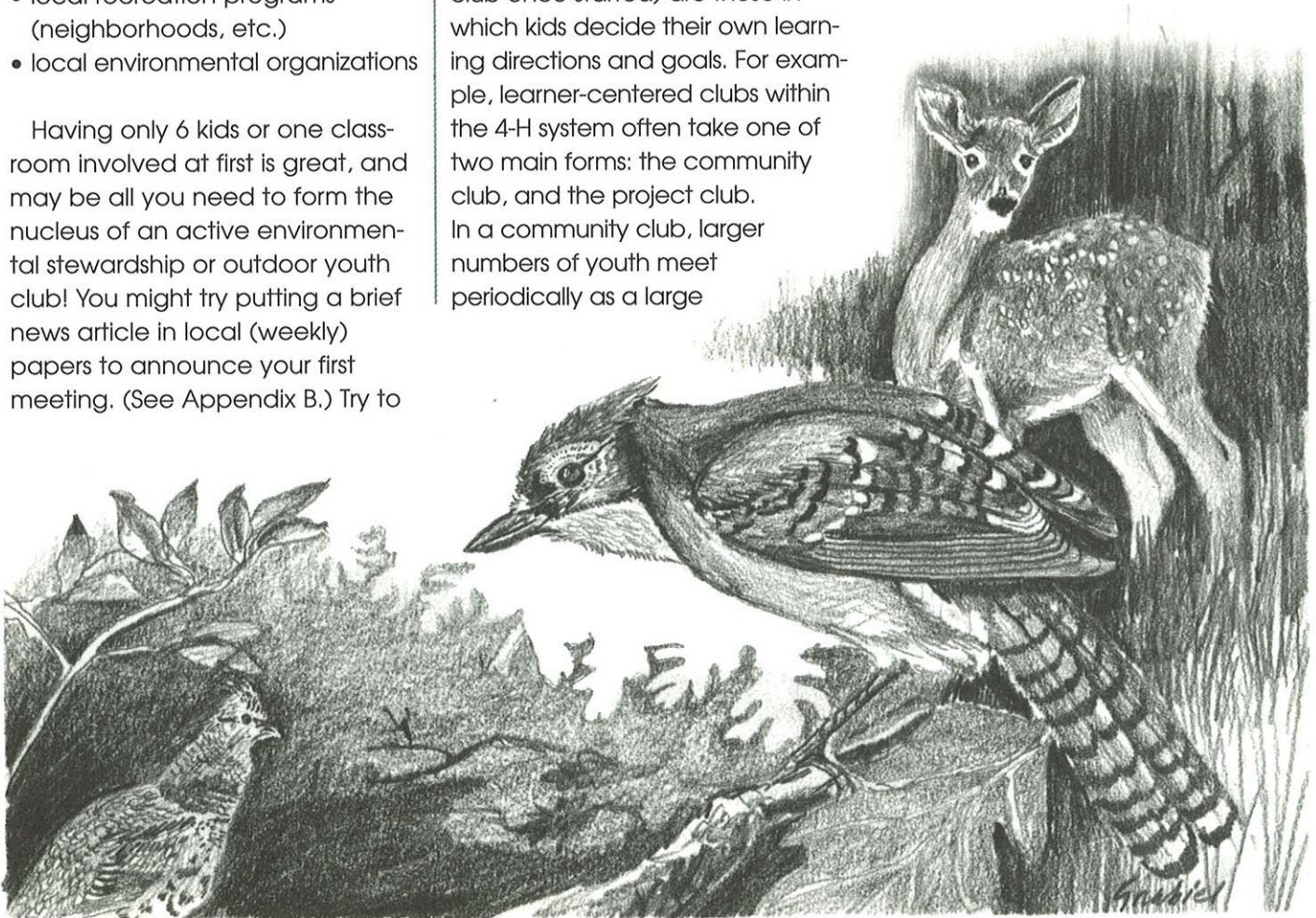
- schools
- after-school enrichment programs
- summer youth programs
- local parks or as part of camp programs
- nature center programs
- outdoor (or “sportsmen’s”) clubs for families, shooters, anglers
- local recreation programs (neighborhoods, etc.)
- local environmental organizations

Having only 6 kids or one classroom involved at first is great, and may be all you need to form the nucleus of an active environmental stewardship or outdoor youth club! You might try putting a brief news article in local (weekly) papers to announce your first meeting. (See Appendix B.) Try to

involve at least 3 families, in order to get parents in on the fun from the start. Mixed ages are fine—have the older teens build their enthusiasm by teaching the younger youth.

Remember, clubs can take many shapes and forms. The best clubs (for youth development and for organizers who wish to sustain a club once started) are those in which kids decide their own learning directions and goals. For example, learner-centered clubs within the 4-H system often take one of two main forms: the community club, and the project club. In a community club, larger numbers of youth meet periodically as a large

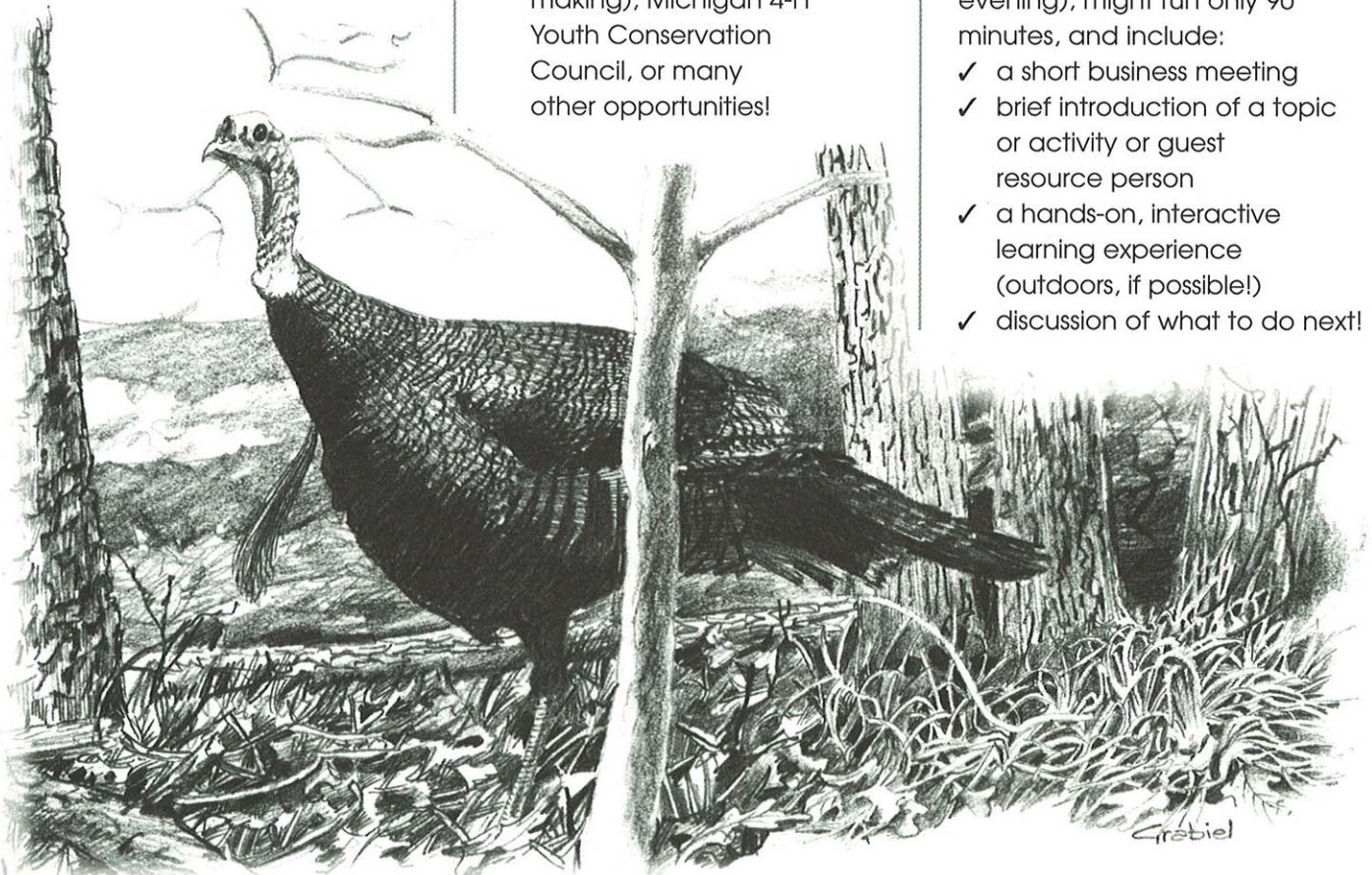
group, but each youth and small groups of youth take on a variety of very different types of projects (e.g., animal science, personal appearance, and environmental stewardship). In a project club, however, smaller numbers of youth specialize within one main project area (e.g., environmental stewardship, or sportfishing, or shooting sports/wildlife conservation).



To capture and keep the interest of schools and teachers, several very important points need to be weighed. First and foremost, schools are responsible for the overall education of our youth in particular subject and skill areas. Schools and teachers, today, are under a great deal of pressure from society to show that their approaches are working; so, student achievement scores on standardized tests are very important. It's even said that a community's economic viability sometimes rests on the quality (and scores) of local schools. Understanding how environmental stewardship can fit nicely with what schools and teachers are trying to achieve for our youth is vital to developing strong programs in schools. (For more information on connecting environmental stewardship and outdoor education to Michigan education systems, see contacts listed in Appendix C.)

To sustain your program, once you start it, it's important to have teens stay involved once they've started their journey in learning about environmental stewardship. To capture and keep the interests of teens, consider these tactics:

- have meetings at times when teens can attend...(not at times when sports, work obligations or other major events get in the way)
- send a teen or two for specialized leadership experience and training—they'll come home ready to jump-start the involvement of other teens locally! For example, consider these options:
 - ✓ 4-H Great Lakes and Natural Resources Camp (ages 13-15)
 - ✓ MUCC Camp—for younger youths
 - ✓ Other youth leadership experiences, such as: Capitol Experience (learning about state policy making), Michigan 4-H Youth Conservation Council, or many other opportunities!
- build in competition—constructively. (Prepare for an event like the Envirothon, see Appendix C for contact information.)
- check into local schools' community service requirements for graduation, and offer teens exciting outdoor community service opportunities no other organization can offer!
- have teens work toward taking a special trip—to a park, on a fishing trip, with an outdoor guide, on an interstate or international exchange, etc.
- give teens a REAL say—in planning events and learning from the start.
- share responsibilities with teens—especially getting them involved in serving as guides and mentors to younger youth.
- let youths decide the focus of their learning experiences and meetings. Let them run the meetings, with your guidance. A sample meeting (in an evening), might run only 90 minutes, and include:
 - ✓ a short business meeting
 - ✓ brief introduction of a topic or activity or guest resource person
 - ✓ a hands-on, interactive learning experience (outdoors, if possible!)
 - ✓ discussion of what to do next!



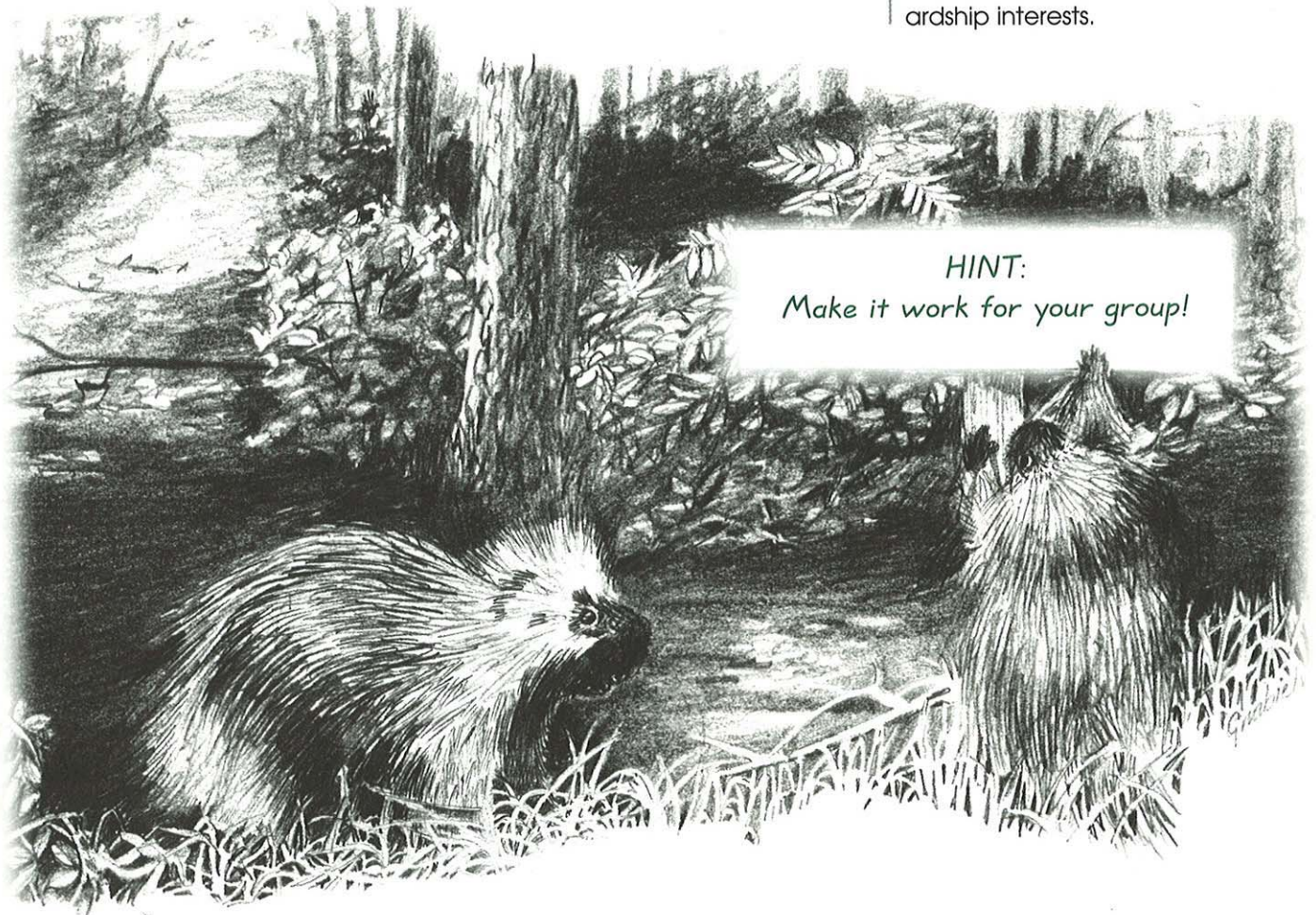
In order to put the **safety and well-being of youth first and foremost** during the learning, be sure to plan carefully for even the first gathering. Here is where the benefits of affiliating with an established youth-serving organization (such as county 4-H Youth Development Programs) are essential in today's world. (See Appendix D for reasons and benefits of affiliating with 4-H Youth Development Programs, for example.) Planning for the safety and well-being of youth involves these considerations:

- Which adults are working with youth, and how have they been selected and trained?
- Have you made appropriate plans for first aid, safety, and emergency assistance at your activities?

- Have you made plans to manage other potential risks (such as undue media exposure of youth, plans for severe weather, purchase of club or activity insurance, etc.)?
- Are the youth, their parents, and volunteers informed of what activities will occur? Are they prepared to make wise decisions about participating in or leading the activities?
- What records do you keep...of participants' arrival/departure, of parent/guardian contact information, of safety policies/procedures, or about incidents or events which occur during your meetings?
- Have you drawn upon the expertise of youth development professionals in planning your learning activities and events and in risk management planning?

For more information on risk management planning for outdoor activities, see Appendix E.

Next, have a **purpose** for your activities! The best way to get your youth started on a path of learning about local environments is to guide them on a Discovery Walk, or Investigation Walk. Exploring local environments, whether they are rural, urban or suburban, is a great way to connect youth to their outdoor interests, whatever they may be. Taking the time to carefully look at, think about and wonder about what's just outside the door can help a young person decide what they would like to know more about. Then, these interests—kid-directed—can lead to a day of further exploration, weeks or months of detailed study, and longer-term community service projects to carry out their own environmental stewardship interests.



HINT:
Make it work for your group!

Find purpose or a focus through one of the following:

- a special place—where you return to do much of your environmental stewardship learning projects—someones' land, a neighborhood park, or an adopted area (read on...).
- recreation—having fun! Connect the learning experiences to a planned fishing outing, or other outdoor adventure!
- a service and action project—to study, “adopt” or improve a special local place such as a park or part of a watershed;
- preparing for an event—such as regional and state Envirothon competitions (designed especially for high schoolers—see Appendix C for contact information)—or for a special trip.
- finding ways to share youths' work at an event—such as the county fair, a science fair, an Earth Day or other local event.
- connect environmental or conservation activities with other topic areas (at fairs or within clubs or school): posters and poster contests, writing, demonstrations, public speaking, arts and crafts, etc.

Third, find **partners!** Don't go it alone! There are many organizations and agencies which can help with your local youth environmental stewardship projects and activities. To consider these organizations and to contact them, see Appendix C to learn how to obtain the MUCC (Michigan United Conservation Clubs) Conservation Education Catalog and other useful references. To brainstorm how these groups and organizations could be involved and to start planning your local programs, at county or community levels, see Appendix F “How to Form a Local ‘Service and Action’ Team.”

The best way for a county or local program to get organized is to begin to form a Service and Action Team. This team will help draw together local resource people and volunteers who can help get a youth environmental science and stewardship program started and maintain it to help it grow. Environmental education partners from schools, industries, agencies, organizations, local clubs, and community service groups can help in many ways to build a strong program. This Local Team then will serve as a network of leadership and a support team for the many mentors who work directly with youth in conducting environmental science learning and action projects. For more information on how to get started, see Appendix F, “How to Form a Local ‘Service and Action’ Team,” read about successful programs in Appendix H, and have fun!

“Passengers on the cosmic sea
We know not whence nor whither,
'Tis happiness enough to be
Complete with wind and weather.”
— Liberty Hyde Bailey,
Wind and Weather



HINT:

Some clubs meet once per month, while others meet weekly. Some clubs have all members meet each time, while other clubs have subgroups! Do whatever works for your group!

Finally, **start small!** If your work in environmental stewardship is only with a handful of youth, that's OK! It's most important that you share with those youth an in-depth and real environmental and outdoor experience. When there are too many youth involved, (such as a huge clinic or field day), you can only achieve awareness of outdoor environments.

With a handful of youth for each mentor, the magic of mentoring happens—youth develop a life-long commitment to environmental stewardship. Allow those youth to focus their attentions on the subjects or service projects of interest. Don't get involved in too many different subject areas within environmental science or outdoor recreation too quickly!

Grow your program slowly, and add interest areas and more youth as the needs and interests arise. Soon, you'll have a network, even if only a small one, of local interest in fostering youth development through environmental stewardship and outdoor recreation.

Sample Yearly Calendar: Timeline for Success!

September

First meeting of interested adults, teen leaders and local youth development professionals (e.g., 4-H agent, recreation professionals, etc.)

- Brainstorm ideas for resource people and teaching/learning experiences (see Appendix F—"How to Form a Local 'Service and Action' Team")
- Consider how and whether to form a local Action Team
- Decide how to publicize first meeting for youth and parents
- Divide tasks, and decide how to check that tasks are carried out!

October

First youth club meeting—Make sure participants get acquainted and do a simple fun learning activity (see "Warm-Ups," page 23)

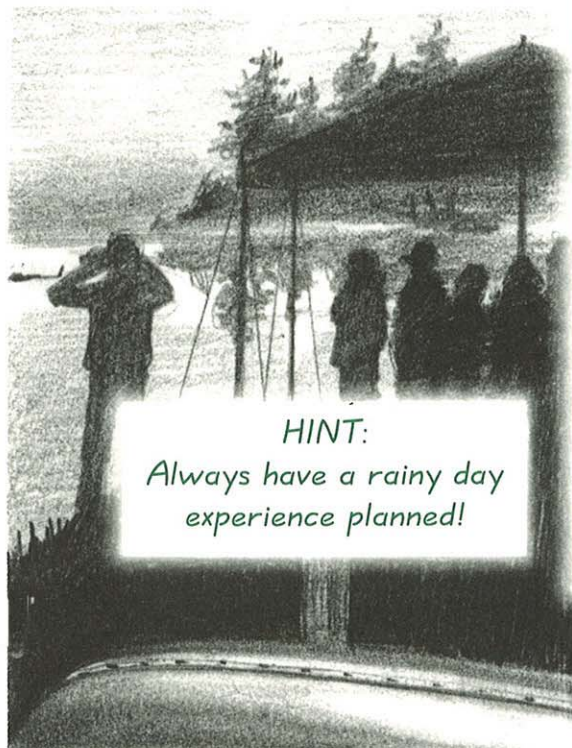
- Have kids suggest locations or topics they want to explore
- Discuss group procedures and processes (fill out group enrollment forms, permission forms, collect dues for activities and for group insurance, sign up other parents/guardians as helpers or enroll them formally as organization leaders, announce upcoming activities, training workshops, events, and meetings, etc.)

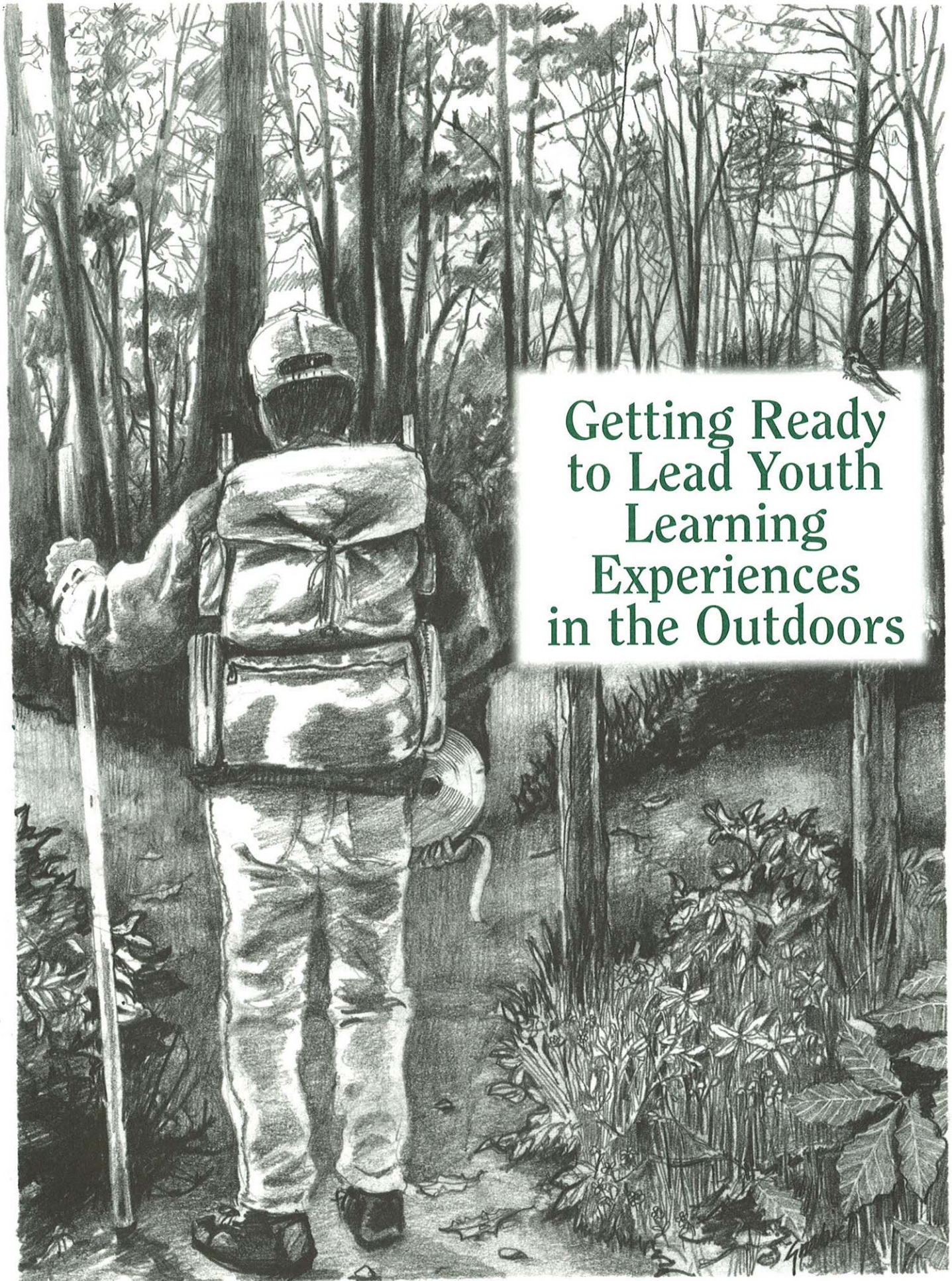
2nd club meeting—Do more warm-ups, and let kids research more information about your site

2nd or 3rd club meeting—Take a Discovery Walk (and start a field journal!)

3rd or 4th club meeting—Take an Investigation Walk (and discuss more ideas for learning)

5th club meeting—Determine an action for the year—let the kids plan actions they could take throughout the year. Would the club like to take a series of Discovery and Investigation Walks throughout the year on the same part of the site? Would they like to explore different areas within the site at each visit? How could they improve the site? What resource people could they invite in to help them explore the site? Could they plan a fun outing to celebrate the end of the year? How will they display what they have learned throughout the year (at a fair or other event)?





Getting Ready
to Lead Youth
Learning
Experiences
in the Outdoors



An Outdoor Mentors' “Kit” — What to take along!

If you're leading a group, having a small backpack with a few items for the group can really help group members feel more comfortable and be ready to explore. Check the following lists, and select the items that might be most useful for YOUR walk:

Back pack:

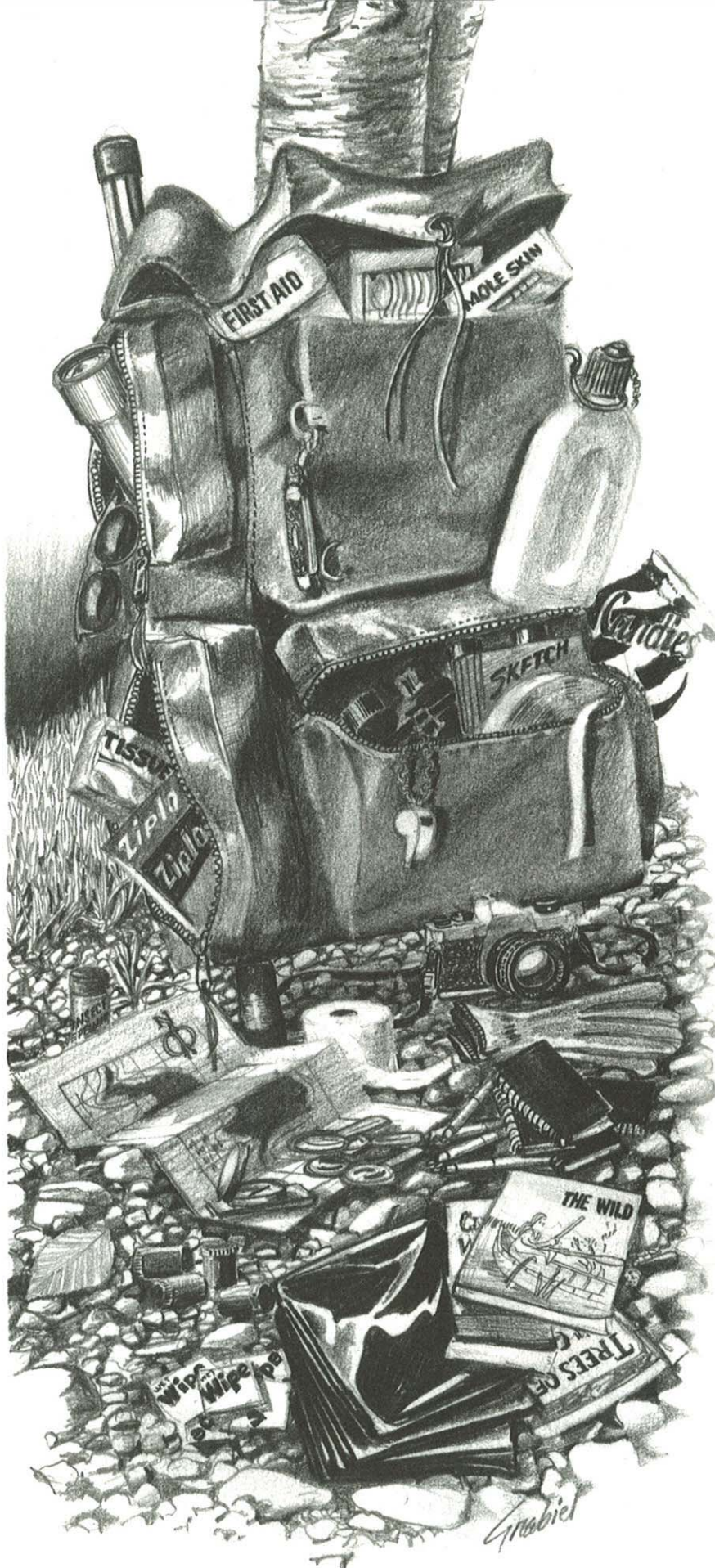
- Plenty of zippered pockets, and side pockets for water bottle! Fanny packs work well, too. Just putting on a pack will stimulate curiosity. “What’s in your pack?” will be the first question asked!

Personal comfort items:

- Tissues (perhaps even toilet tissue)
- Antiseptic wipes (if you want to clean up after handling things!)
- Insect repellent
- Sunscreen and sunglasses
- Trash bags (which can be used for rain ponchos or “sit-upons” or for picking up trash!)
- Gloves (even in spring and fall)
- Snacks, drinks (including a water bottle—or pop bottle filled with water)
- Hard candy (for “prizes” or for thirst quenching!)
- Some basic first aid supplies (including whistle for emergency signalling—3 blasts, bandages, antibacterial ointment, matches, needle)
- Be sure that everyone is comfortably dressed for the weather and the terrain—with long pants, socks, poncho, shoes that tie and can get wet or muddy, hat, etc.

HINT:
Have older youth put
together their own
“Outdoor Learning” pack!

Wipe



Exploring and Teaching Tools:

- Hand lenses/magnifying glasses
- Map of the site
- Bandanas (or other items for blindfolds)
- Jack knife or small scissors
- Zipper-type plastic bags
- Camera
- Small containers
- Compass
- Spoons
- Flashlight
- Flagging tape or other material for marking specific sites
- Writing supplies (paper, small notebooks or sketch pads, sharpened pencils)
- Basic field guides (see pages 60-61)
- Binoculars (one set, or a quantity)
- Whistle, air horn, or wildlife call (crow calls work well to gather your group)
- Idea notebook or note cards (activity ideas)

“Practitioners in every discipline rely on specialized techniques to get their work done; scientists conduct experiments, archaeologists excavate ancient sites, and...naturalists take walks...walking is a gentle art that will put you in sympathy with a piece of land faster...than any other.”

— David Pepi,
*Thoreau's Method:
 A Handbook for Nature Study*

But, I Don't Know Very Much— What if Youth Ask Me Questions?

No one person can know everything about the environment! Even the so-called “experts” are always learning new information, looking up information they have forgotten, and reviewing things they learned in the past. For example, it's very easy to forget bird songs from one year to the next; many active “birders” have to review their bird ID each spring! Even more challenging, is that there are always new discoveries being made, and just when you thought you knew it all, a new species is introduced into an area or a new observation is made!

What's most important is mentoring kids in how to become lifelong learners about their environments. Modelling for kids that you don't always know the “right” answer, helping them to ask their own questions, then helping them to seek out the information from others or from references (such as field guides) will help kids in many ways. Youth will learn more from you if you don't always have “the answer”...they will learn important life skills such as how to find information, make observations, process data, and make informed judgments—all while they enjoy the outdoors.

So, let kids ask questions...ask a variety of questions of kids...and don't worry if you don't know the answers—it's often better if you don't!

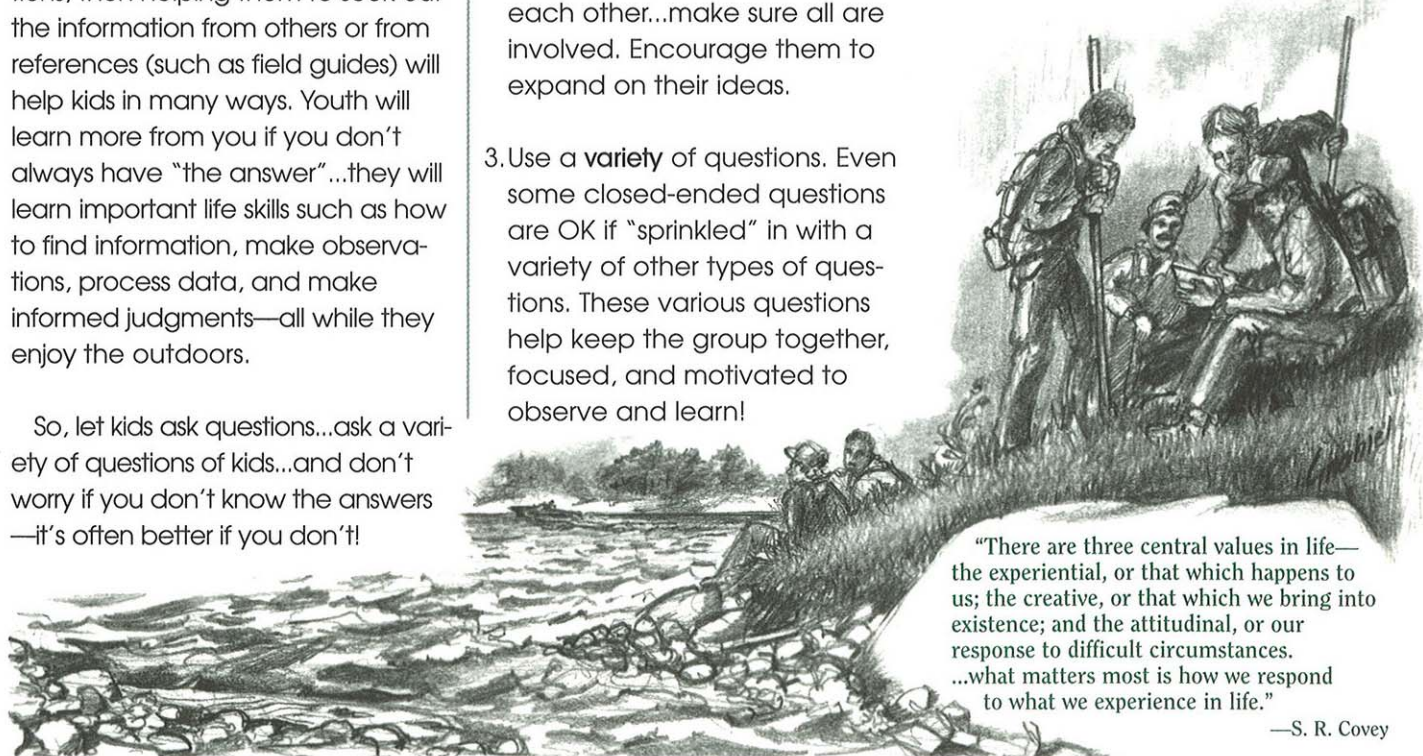
How to Ask the Right Questions (vs. Telling or Preaching to Kids)

1. **First, create an atmosphere** conducive to youth sharing their thoughts, ideas, and honest questions. Tell the group that there will be no personal put-downs. Hold yourself back from always providing an authoritative answer to every question kids ask. Kids need to learn there is uncertainty, especially as they inquire and explore. Don't underestimate the value of remaining silent—wait for 3–5 seconds after you ask a question or a youth asks a question, especially if your goal is to stimulate discussion among kids!

2. **Open-ended questions are best!** These questions have a wide range of possible answers. Draw on learners' past experiences, but ask them to give opinions and reasons for their answers or to infer or to make judgments about something. Try to get kids listening to and interacting with each other...make sure all are involved. Encourage them to expand on their ideas.

3. Use a **variety** of questions. Even some closed-ended questions are OK if “sprinkled” in with a variety of other types of questions. These various questions help keep the group together, focused, and motivated to observe and learn!

4. **Be ready for anything to come up!** Have paper on hand to record questions (for which you don't know the answers or don't know how to address), so that youth can look up information later. Be ready for youth development issues to come up while there is casual conversation. Teens interested in the outdoors and the environment may admit to being called “nature geeks” or “nature nerds” or “science geeks.” They may ask you personal questions about your environmental decisions (i.e. did you use disposable diapers for your kids?) or tell you about how their emerging environmental values conflict with those of parents. These are important musings; most of all, serve as a listener. If there are questions you can't handle, be sure to consult with a child development specialist (such as your local 4-H agent or a teacher). And, enjoy the freedom of ideas and expression that come with serving as a mentor with youth in the out-of-doors.



“There are three central values in life—the experiential, or that which happens to us; the creative, or that which we bring into existence; and the attitudinal, or our response to difficult circumstances. ...what matters most is how we respond to what we experience in life.”

—S. R. Covey

Some Ideas...Questions to Ask

Managerial questions: to keep the group going

- "Does everyone have their coats on?"
- "Can you hear me in the back of the group?"
- "Who hasn't seen/handled/touched/smelled this yet?"

Rhetorical questions: to reinforce or emphasize a point; usually an answer is not expected

- "The white pine has 5 needles in each group, right?"

Question to stimulate recall or memory

- "If water is acidic, what is its pH?"

Questions to encourage convergent thinking (encouraging everyone to reach one answer); (may include questions which encourage learners to classify items, or to identify similarities and differences among items)

- "What species of bird made that call?"
- "What do you see at this site?"
- "How many types of conifers do you see at this site?"

Ask questions such as who, what, when, where, and name?

Try to avoid yes/no or narrow questions

Not so good:

- "Is this a white pine or a red pine?"

Better:

- "What pine do you think this is?"

Not so good:

- "Is this a white pine?"

Better:

- "How would you tell if this is a white or red pine?"

Questions to encourage divergent thinking

- "What species of tree might this be?"

Questions to encourage evaluative thinking

- "Should we pick this wildflower? Why or why not?"

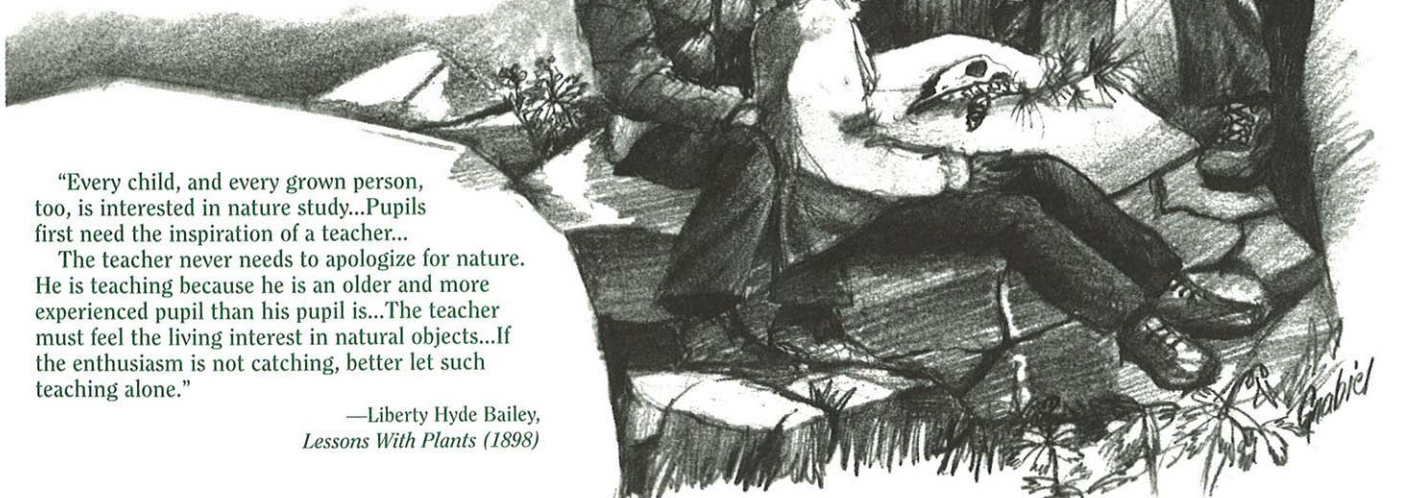
Questions to discuss, interpret, explain, evaluate, compare, or to ask "if, or what if?"

Use at beginning of an experience to help stimulate interest:

- "Do you have ideas on what we might see?"

Use questions at the end of experiences to help youth consider things to investigate or related areas to explore

- "What do you think this area looks like in the winter?"
- "Should we come back?"
- "How would you explain what we saw?"
- "How many explanations do you have for this fallen log?"

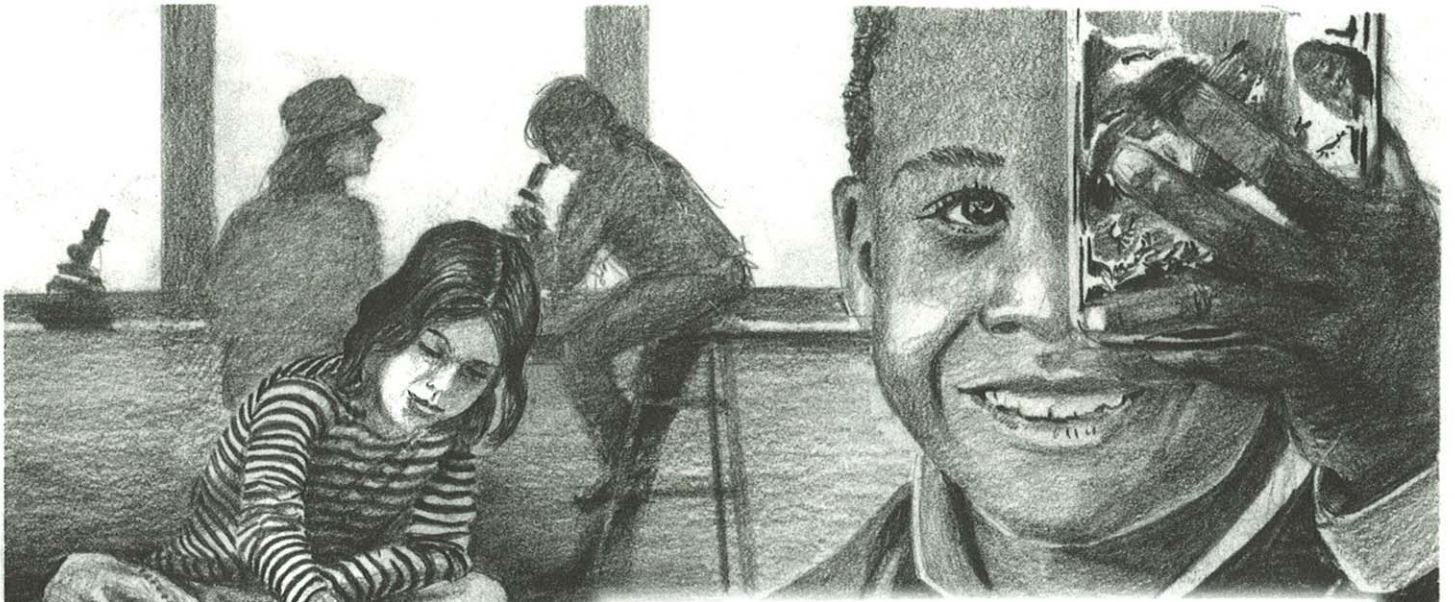


"Every child, and every grown person, too, is interested in nature study...Pupils first need the inspiration of a teacher..."

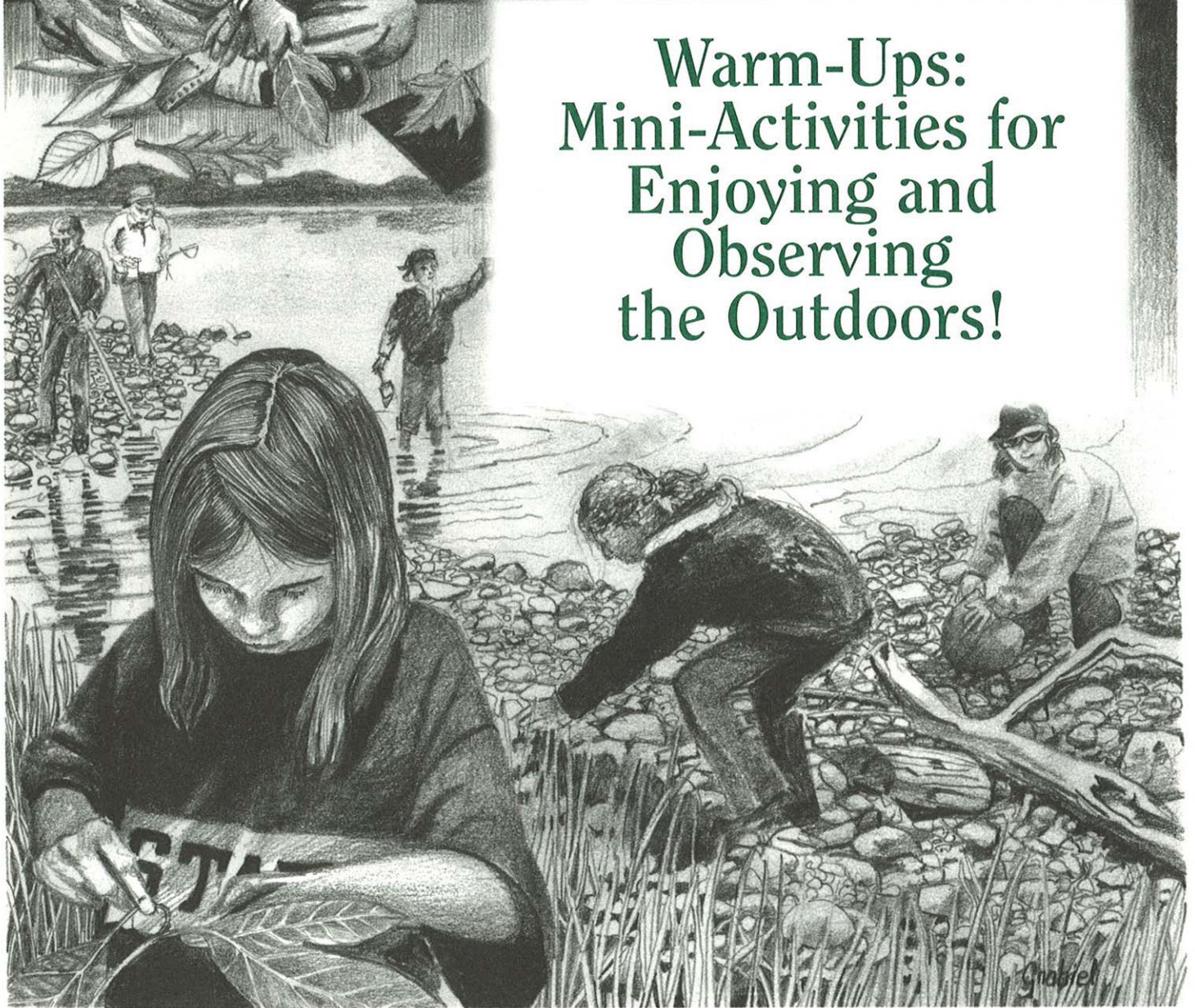
The teacher never needs to apologize for nature. He is teaching because he is an older and more experienced pupil than his pupil is...The teacher must feel the living interest in natural objects...If the enthusiasm is not catching, better let such teaching alone."

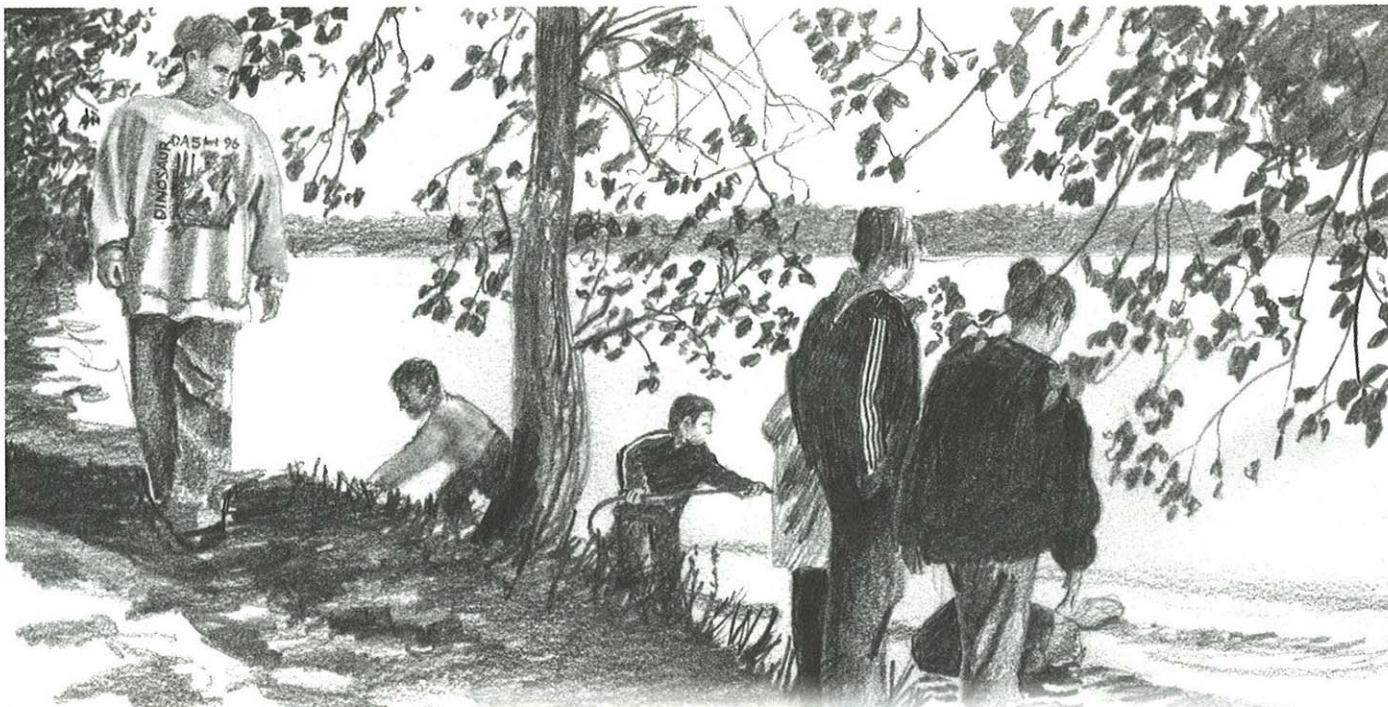
—Liberty Hyde Bailey,
Lessons With Plants (1898)

(Adapted from: Blosser, P. E. 1975. *Ask the right questions*. National Science Teachers Assoc., Washington, DC.)

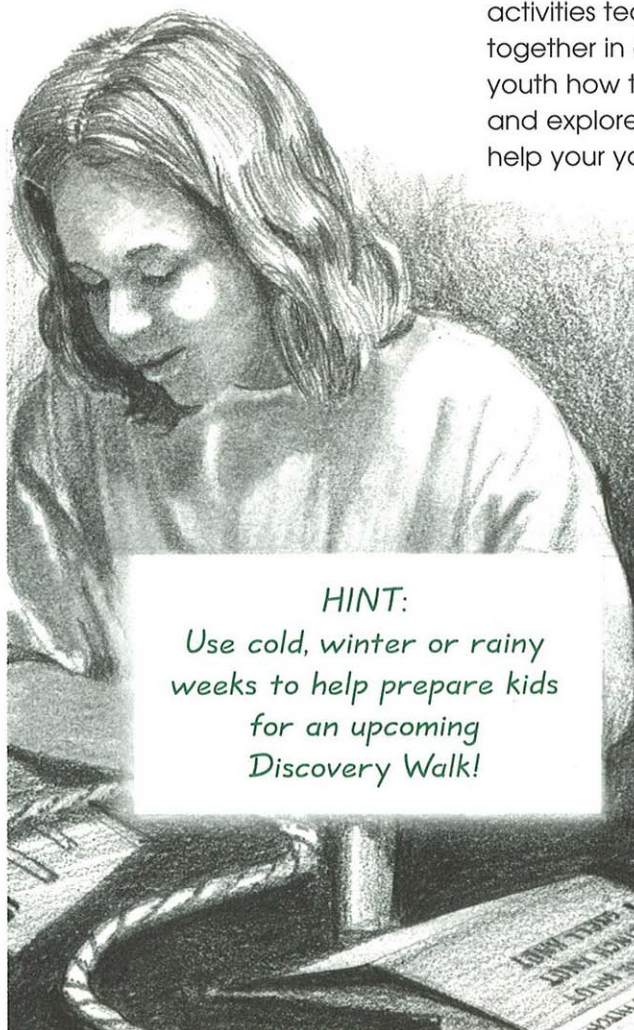


Warm-Ups: Mini-Activities for Enjoying and Observing the Outdoors!





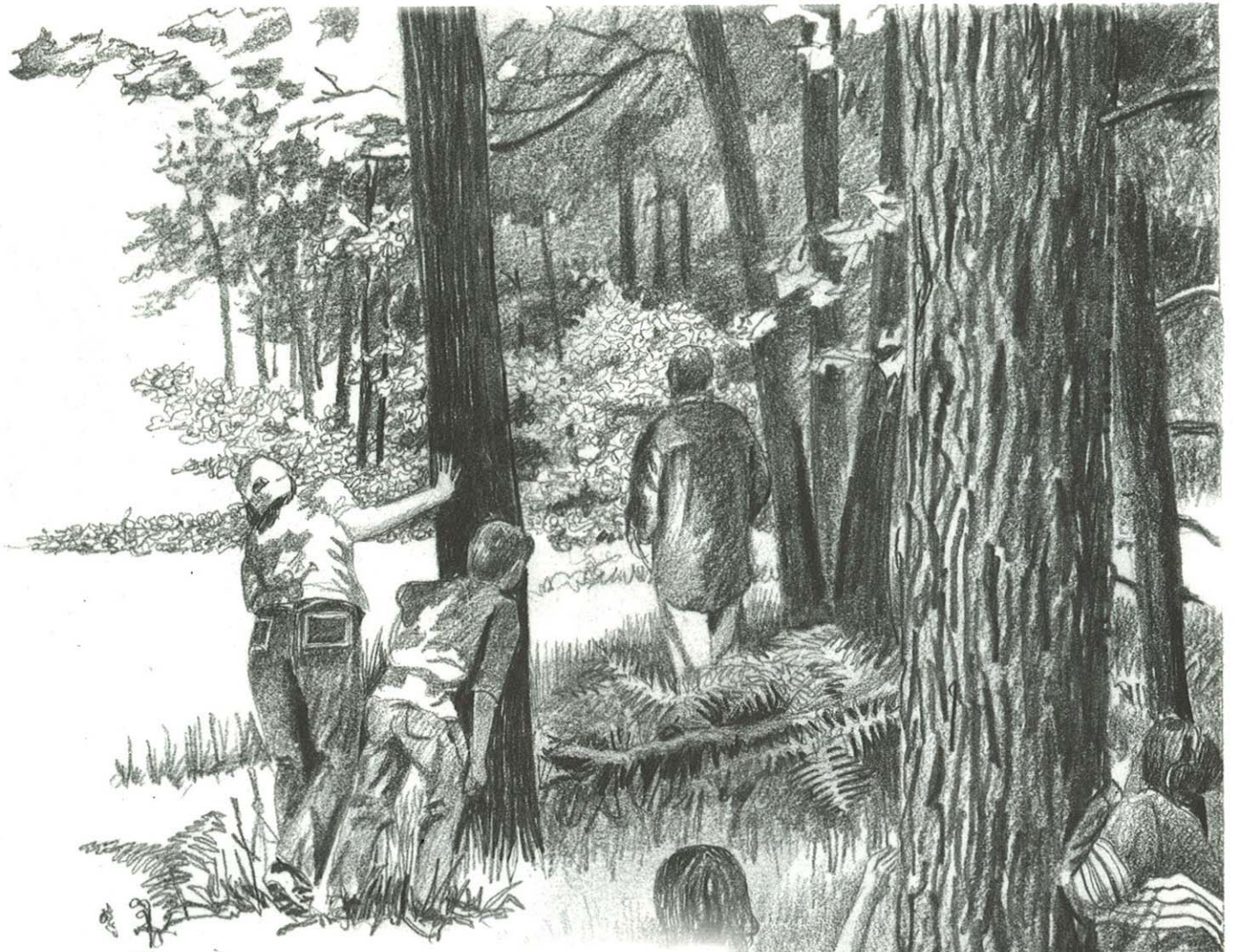
Mini-activities will help you get your group ready for more in-depth learning about the out-of-doors. The following activities can be done as a warm-up to a longer walk, or may be expanded to a full activity! Some of these mini-activities teach important skills (such as how to walk quietly together in a group). Others are sensory warm-ups—showing youth how to be observant (with many senses) as they walk and explore. Yet others serve as “ice-breaker” activities to help your youth to begin working together as a group.



HINT:
Use cold, winter or rainy weeks to help prepare kids for an upcoming Discovery Walk!

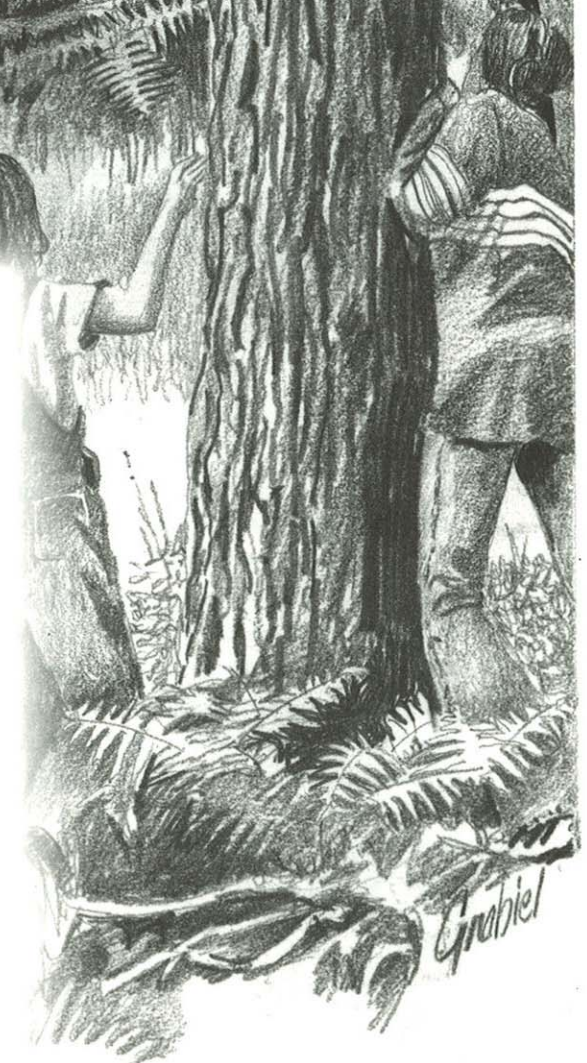


HINT:
If outside at dusk or at night, remember to bring flashlights!
(You don't have to use them!)



Walking Softly...

Line up your youth shoulder-to-shoulder facing you (and approximately 30-50 feet from you). Demonstrate how to walk quietly through dry noisy leaves or rustling grasses; show them how not to scuff their feet, and how to walk slowly and quietly. Describe the foot motion used to “walk softly” as being like the steps of a Great Blue Heron—which carefully lifts its feet, one-by-one, then places them softly back into the water and mud with hardly a ripple! Exaggerate your demonstration. Next, play a simple game with the group. Tell the group that their job is to see who can walk toward you and reach you first, without you hearing any noise. Turn your back to the group. At the slightest sound, turn quickly and point in the direction of that sound. Tell the whole group to start over, and remind them of their task—that the whole group must be quiet in order for one or more of them to reach you! Play several times, until the whole group can reach you without you hearing a sound!



Walk-In-A-Bag

What do you do if it is raining, sleeting, or snowing so hard that it is difficult to lead a walk? Bring the walk indoors, of course! Select 5–10 items with varied texture or to represent certain themes. Some examples might include: interesting rocks, bones, feathers, branches, leaves, etc. Place each item in its own grocery bag, and staple the bag shut so that there is only enough space to reach one hand into the bag to feel the item. Along each bag, place a large piece of paper, with the following 3 sentences written:

"It feels...."

"It could be...."

"I wonder..."

Place a pen or pencil with each bag. Let the youth walk the walk-in-a-bag "trail," exploring the objects in each bag, and writing their reactions onto the large paper. When all are done taking the indoor walk, have a youth read the reactions written on the paper, and discuss the reactions. Finally, reveal what was in each bag, and discuss the items.



Blindfold Trail (or "Trust Walk")

Prior to conducting a trust walk, scout a site, and string a rope along a path. Have the youth work in pairs—one person with a blindfold on, and the other with no blindfold. Tell them that during the activity, they should remain quiet, listening to the sounds around them and the gentle, guiding voice of their partners. Bring each pair to the start of the walk (rope). Have them travel the length of the rope, with the help of their guides. Encourage them to move slowly, feeling the textures of items they come into contact with, and sensing their environments (temperature, light intensity, smells, etc.). When everyone is done (and after each youth has served as guide and walker), discuss what they felt, heard or visualized in their minds. Ask: were there any surprises? You might have them re-trace their steps, to see what they had experienced while blindfolded.





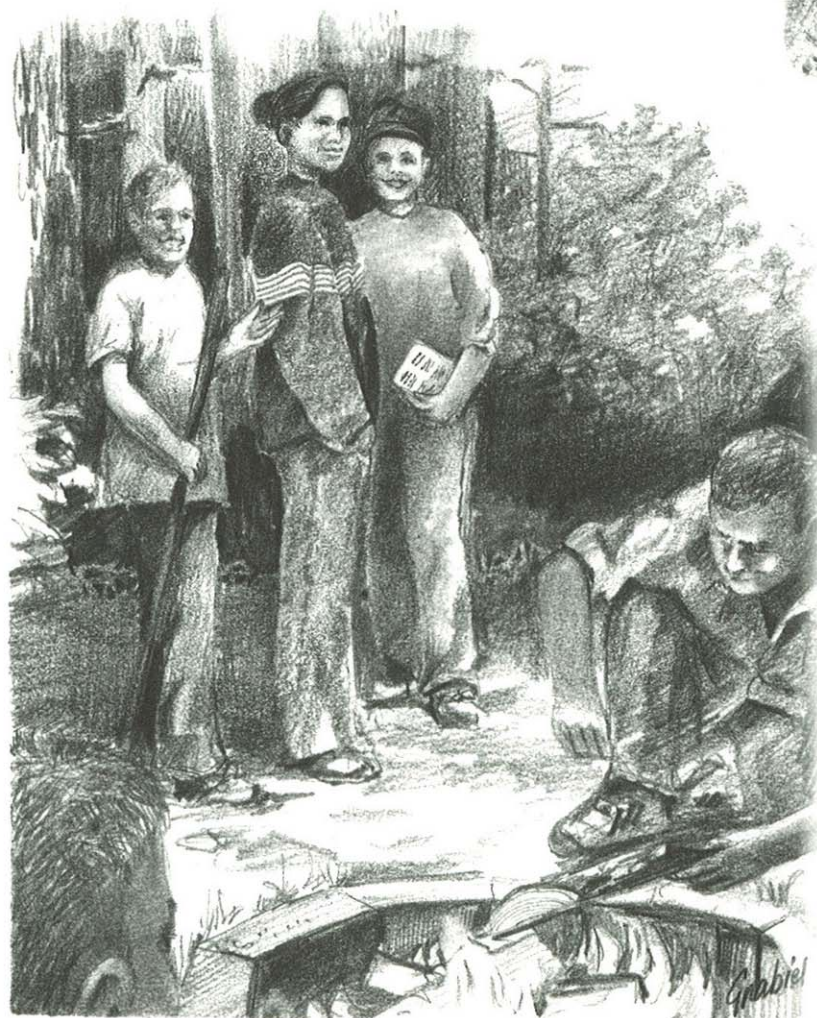
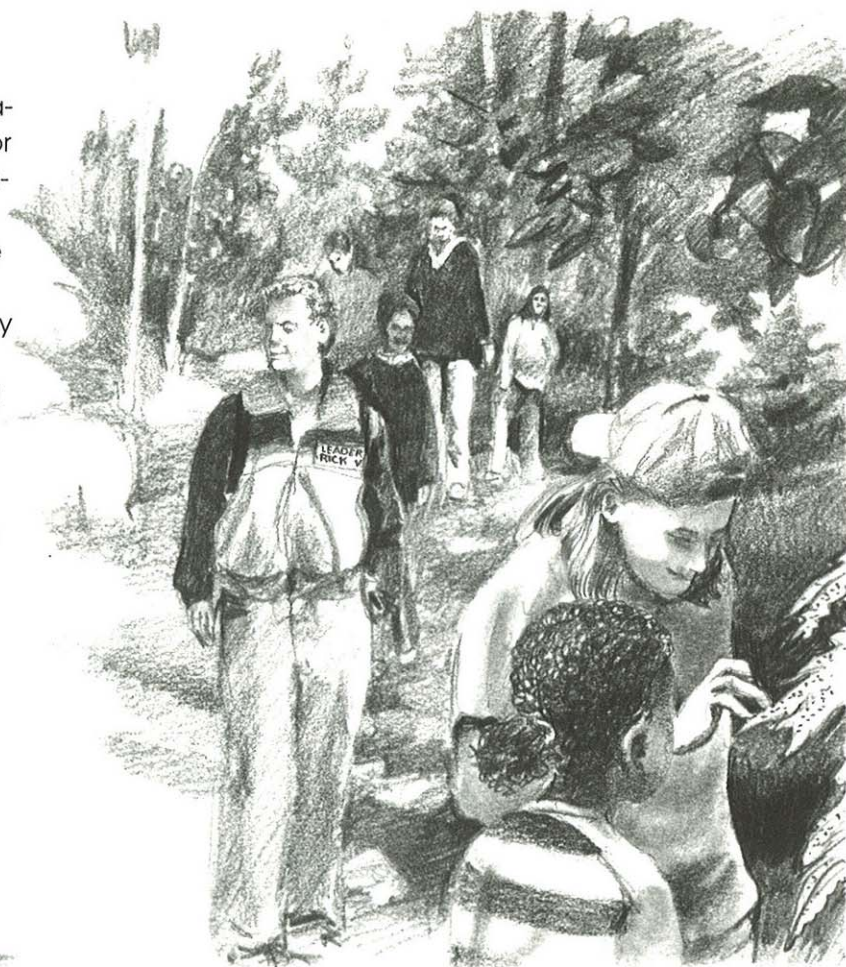
Bingo Hike

The Bingo Hike is a method for an organized discovery hike. A game board can be created by the youth while they are participating in a hike or prepared by teens and adult leaders prior to the walk. The game board includes pictures and one or two word clues of plants, wildlife, or other interesting discoveries that could be found during the outdoor walk. To design the game board, walk the area and choose 24 ideas. For example: animal home, decomposing leaf, insect activity, see a bird, bird nest or feather, mammal, amphibian, wildflower, tree seed, specific species of trees, animal scat or animal track. Find or draw pictures of each idea, and make the pictures approximately 2 inches square. Add the word clues. Arrange the pictures 5 down and 5 across (leaving the center space a "free space")

under a five letter heading. Suggestions for headings include "BINGO," "PLANT," "TREES," "FIELD," "WOODS," or "WATER." Make multiple copies of the game board, but be sure to arrange the pictures differently for each board. If you make your picture ideas general enough, the game could be used at many outdoor walk locations. The game board could also be displayed as a fair project! Now you're ready to lead the hike...Have youth work either individually or in pairs, looking for the objects on the game board. First team to place stickers or markings in a complete horizontal or vertical line—WINS! (NOTE: an easier variation of this hike for younger children would be to create the game board in a Tic-Tac-Toe pattern—3 squares across and 3 squares tall.)

Follow-the-Leader

Follow the Leader is a method for a spontaneous discovery hike. After selecting a site for the walk and preparing the group for a comfortable outdoor experience, introduce the activity as an opportunity for everyone to be the leader during the hike. The leader walks in front of the group and has the responsibility to find evidence of animal activity (animal scat, feather, animal home, bird nest, animal track), or an interesting plant (fungi, tree, wildflower, unusually shaped plant), or anything they find fascinating, and show the group while giving a brief explanation of what they observe and why it's interesting. The explanation could be factual (if they know what they are seeing) or creative. The group could follow up the activity by using field guides or reference books to look up factual information about their discoveries.



Common Ties

Divide the group into smaller groups of 2s, 3s, etc., depending on the size of your group. Give each group member a piece of paper and something with which to write. Have them divide their paper into two halves; in one half, write "Can See," and in the other half write "Can't See." Have each group make a list of all the things that are common among ALL their group members. Examples of things they can see are hair color, eye color, etc. Examples of things that can't be seen are: speaking the same language, family size, like to go fishing, etc. Describe how this activity helps group members get to know each other and start building important observation skills that might be useful outdoors! As a variation, once you know the commonalities of small groups, you can use this information when you form small groups in the future!

(Based on *Quicksilver* by Karl Rohnke & Steve Butler, Project Adventure, Hamilton, MA, <http://www.pa.org>)



Scavenger Hunts

Before leading a scavenger hunt, scout your learning area. Look for items that are common, and those that are rare. Decide on boundaries for this activity. Decide on a theme for the scavenger hunt (e.g., colors), or on specific items to be observed or collected. For older teens, you might identify items that could be “collected” to represent important ecological principles (e.g., ask them to find evidence of parasitism). Be sure to decide your “rules” for what is to be collected (common items) vs. what is to be left alone and flagged. Write out the scavenger hunt list (you don’t need many items for a fun activity). Divide your youth into teams, give the group your “rules” and the list, and start them on their way. When they return, have the teams describe their “finds” to the rest of the group, and defend their “answers.” Compare and contrast the findings. Be sure to recognize all who participated enthusiastically in the activity!

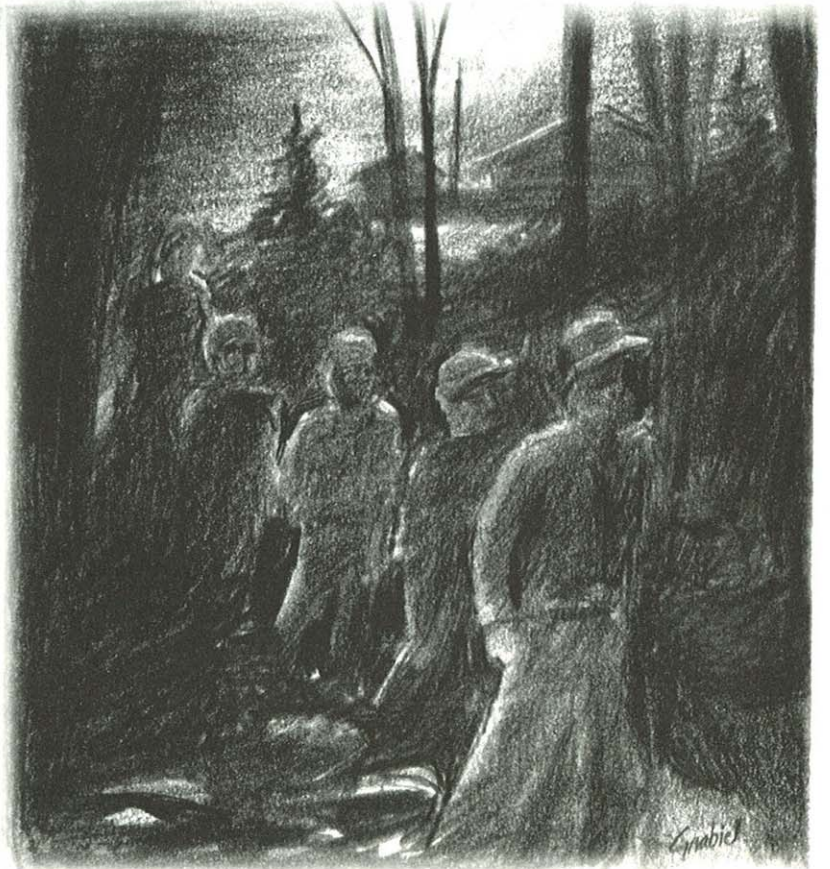


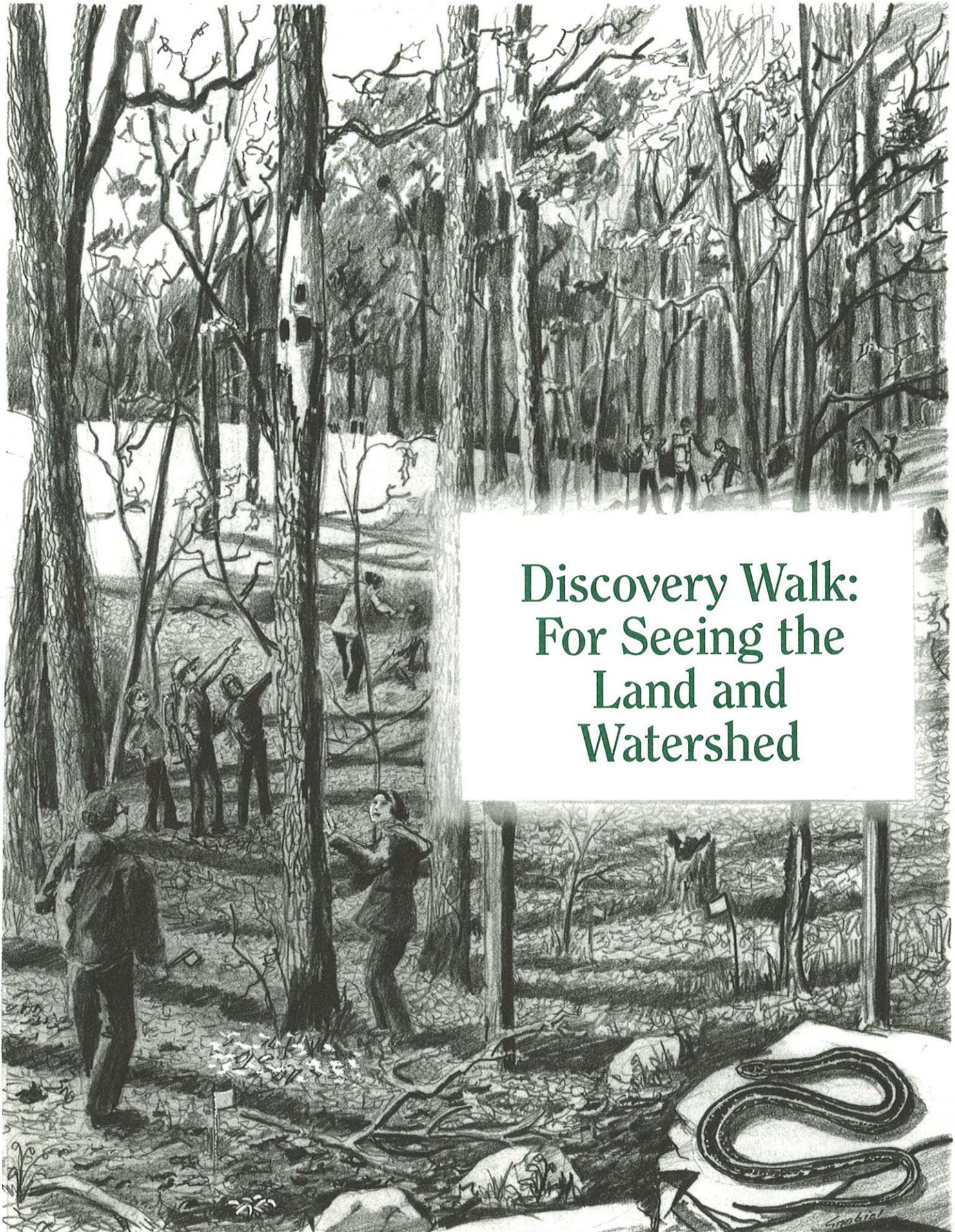
Night Hikes and Night Vision

Much happens in the outdoor world while we are asleep! Be sure to think about how you could develop comfort in youth in taking walks during the evenings. Choose safe places (with some lighting) to start developing that comfort. Describe to youth how their eyes work in the dark—that the rod cells in their eyes are most sensitive to light. Before starting a walk, have the group stand for awhile looking away from the light, to let their eyes become accustomed to the darkness. The group members will be amazed at how they can see shadows, outlines, and silhouettes better after doing this for a few minutes. Lead the walk. If participants will feel more comfortable, have them walk with one hand on the shoulder of the person in front of them, or hold onto a rope that stretches from the leader to the back of the group. For more helpful tips, see the reference: *Knowing the Outdoors in the Dark*, by Vinson Brown (Collier Books, New York, 1972).

Dawn/Dusk Watch

Many youth have never had the quiet pleasure of watching the sun rise or set. Prior to setting out, tell the group to remain silent until the whole group reconvenes after the “watch.” To do this activity, simply walk a pre-planned route, and place youth to sit silently, alone, in areas with a view of a particular area (a meadow or grassy area, a stream, a pond, a wooded spot). (Note: take safety precautions by choosing a safe area, and having several adults to help.) After about an hour, after the sun sets or rises, walk the route, and ask each youth to follow you back to a meeting/discussion spot. Have them discuss what they saw, how they felt, what they would like to explore or learn about next. You might also have them share entries made in a simple field journal while they were on “watch.”





**Discovery Walk:
For Seeing the
Land and
Watershed**



For Seeing the Land and Watershed

Timing

On a warm sunny day, for a positive experience; in early spring or later fall to avoid insects which are only a problem in some regions; in the early morning or an hour before sunset, to see more wildlife. Once you feel “at home” in your place, repeat the walk at night using flashlights, or on a rainy day with ponchos, or after the first snowfall. Compare or contrast your visits; take one walk in the spring and another in the fall.

Duration

50 minutes, or more! Remember to leave plenty of time to accomplish what you want to explore. Don't be rushed; it only takes away from the experience.

Location

Any of these: a city, township, county or state park; school grounds; an urban “river walk”; golf course; a local farm or nature area; cemetery; fair grounds; a small pond, creek edge, or beach front; your neighborhood; your own backyard. Is the area convenient and safe? Is there easy access? Are there pathways for easy walking? If the site is by the water, do you need life jackets? Do you have shelter, if a storm comes up? Do you have permission from private landowners?

OBJECTIVES

After participating, youth will be able to:

- explore, directly, on their own or with a mentor, a place in a particular environment.
- discover—components of the place, new things, new relationships.
- practice new observational skills as they explore and discover community places.
- be able to think reflectively and creatively about their experiences and their observations. Why are certain components there? What patterns exist there? Why do those patterns exist? What do those patterns mean?
- be able to summarize their observations of the environmental features of a particular place.
- comfortably visit a special area more than once, in order to learn more and develop a lasting sense of place—a vested interest in a place and a sense of belonging to that place.
- see environments and learn more about them with the help of a mentor who is willing to learn along with youth, and help youth make their own decisions about what to learn.
- identify interests...decide what features of a site, what topics, or what specific areas are of interest for further in-depth exploration, study, learning, and improvement.

Life Skills

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

Age/stage

All ages—5–8 year olds through 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,

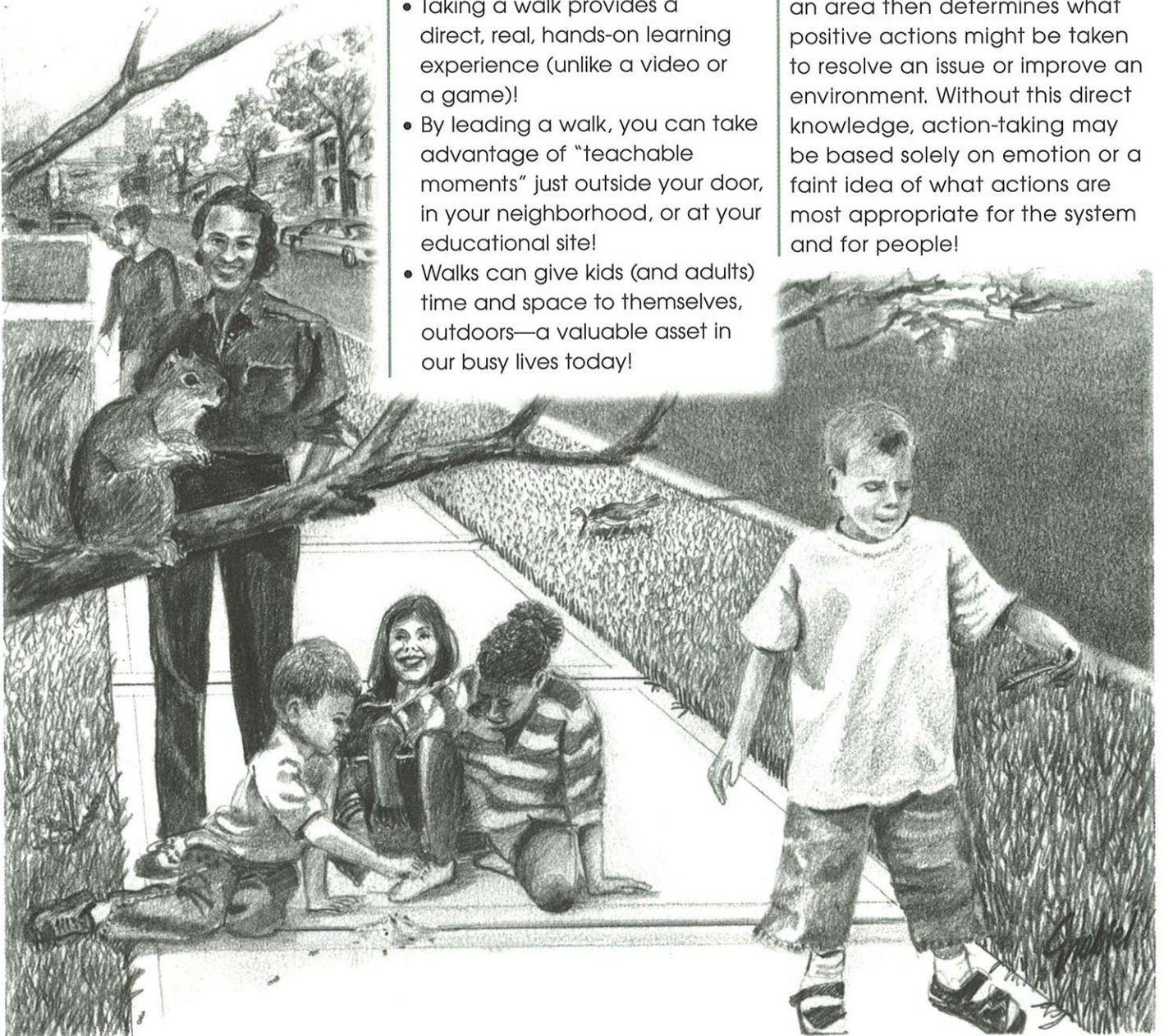
Background

Some of the best known thinkers and lifelong learners striving to understand their environments developed the fine art of the “walk”Henry David Thoreau, Rachel Carson, and Aldo Leopold took walks almost daily, recording their observations, their thoughts, and their musings about how things had changed and would change into the future. Anyone who cares about mentoring youth toward better understanding of environments can lead a walk.

What are some good reasons for leading a walk with youth?

- Walking is a simple activity (and inexpensive)!
- Any leader can lead fun, interesting and thoughtful walks (or “nature hikes”).
- Walks are easy to do—in any environment—suburban, urban, or rural.
- Taking a walk is a good use of time outdoors with youth.
- Youth can get fresh air, exercise, sunshine, and learn about their environment!
- Taking a walk provides a direct, real, hands-on learning experience (unlike a video or a game)!
- By leading a walk, you can take advantage of “teachable moments” just outside your door, in your neighborhood, or at your educational site!
- Walks can give kids (and adults) time and space to themselves, outdoors—a valuable asset in our busy lives today!

Guiding youth on a walk can provide a prologue to any other learning experience about environments, environmental sciences, or environmental issues. Taking a walk can develop a sensitivity to a specific area or topic (such as wetlands), and help one make direct connections with a topic or area of interest. Once a youth has experienced an environment directly, only then will he or she be an informed action-taker, who carefully and critically studies an area then determines what positive actions might be taken to resolve an issue or improve an environment. Without this direct knowledge, action-taking may be based solely on emotion or a faint idea of what actions are most appropriate for the system and for people!



What is a Discovery Walk?

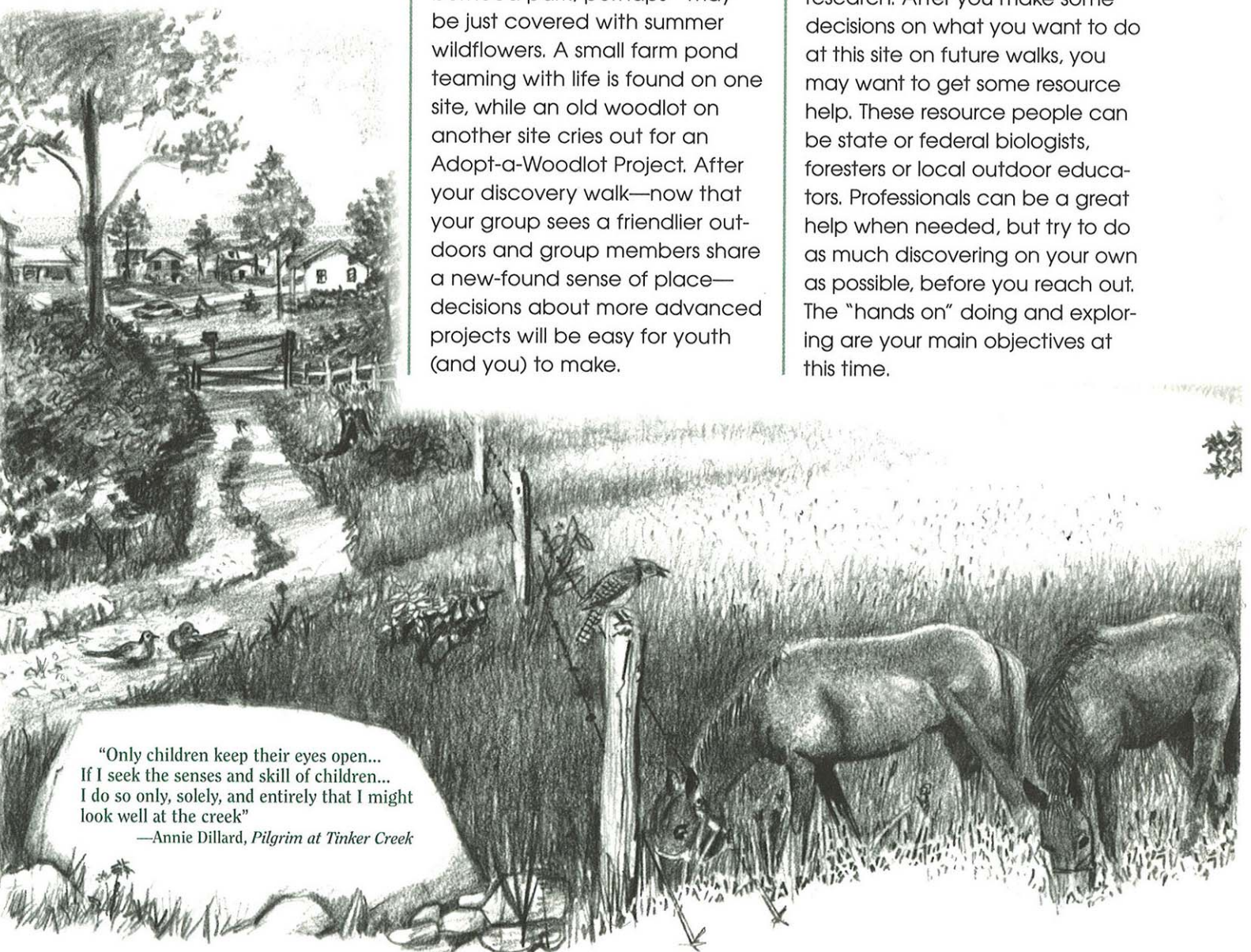
A Discovery Walk is nothing more than a simple hike, where you and your youth group explore an outdoor site using your combined senses—seeing all that’s there, looking at the land, smelling its changing scents, feeling the wind in your hair and the sun on your face, while listening for new and different sounds. This walk is like meeting someone for the first time and wanting to get better acquainted, slowly becoming more comfortable and making the land yours.

Why do we take a Discovery Walk first?

You take this Discovery Walk in order to see where your group’s interests lie. What areas of study does your new space present? Does it make sense to do a tree project, if there are only three different trees on the site? These are the type of questions that a Discovery Walk will help answer. Maybe the group will decide to do a pheasant habitat project after you hear several calls and see a pheasant flying. Another site—an open field in a neighborhood park, perhaps—may be just covered with summer wildflowers. A small farm pond teeming with life is found on one site, while an old woodlot on another site cries out for an Adopt-a-Woodlot Project. After your discovery walk—now that your group sees a friendlier outdoors and group members share a new-found sense of place—decisions about more advanced projects will be easy for youth (and you) to make.

Who should go on this first walk?

Everyone in your youth group including leaders, parents and teen leaders, should go! The young naturalists can be from one age group or a mixed group with teens helping with the younger members. Remember, you know your group best and how many adults you will need for a successful activity. On this first walk, try it without any outside help—just you and your group exploring on your own. Don’t worry about not knowing all the answers to questions. Just write them down for further research. After you make some decisions on what you want to do at this site on future walks, you may want to get some resource help. These resource people can be state or federal biologists, foresters or local outdoor educators. Professionals can be a great help when needed, but try to do as much discovering on your own as possible, before you reach out. The “hands on” doing and exploring are your main objectives at this time.



“Only children keep their eyes open...
If I seek the senses and skill of children...
I do so only, solely, and entirely that I might
look well at the creek”
—Annie Dillard, *Pilgrim at Tinker Creek*

Materials

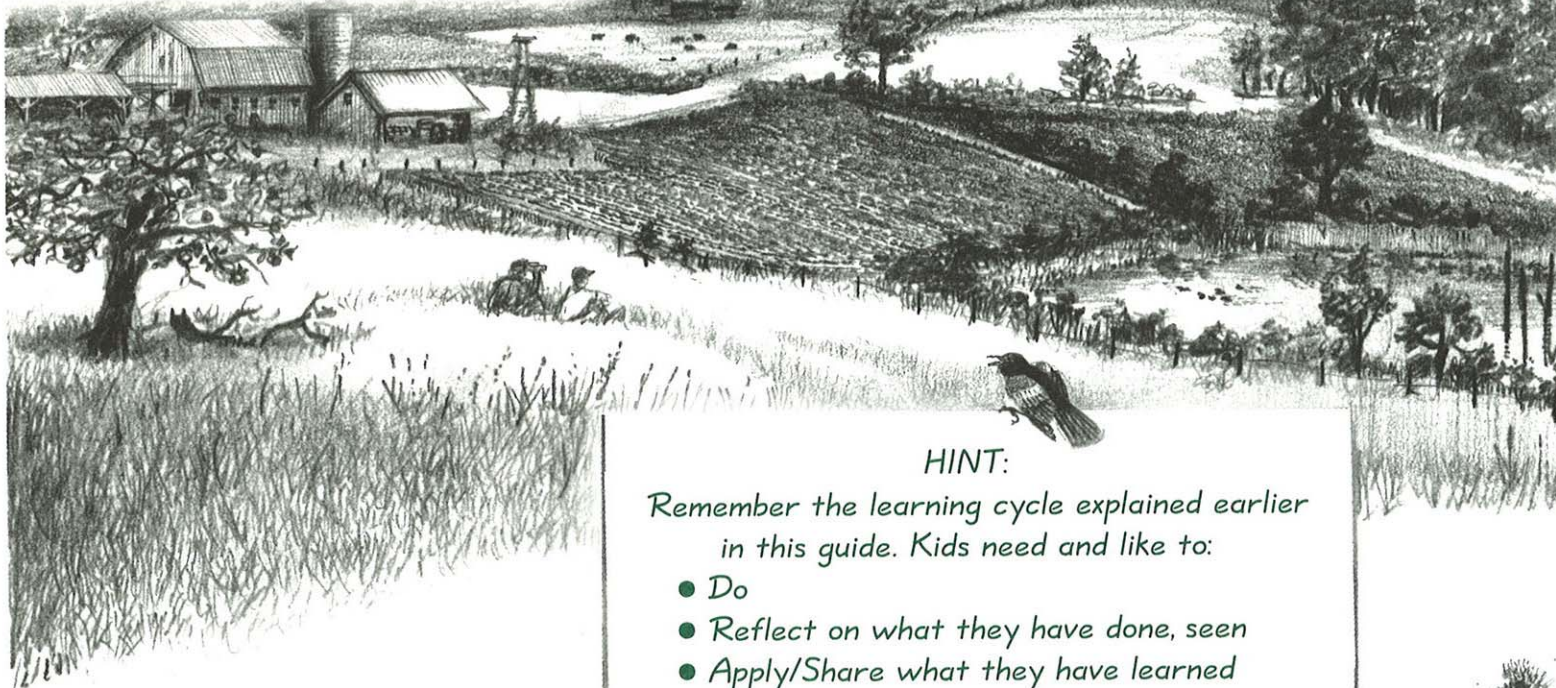
Flagging tape or bright small marking flags (or other means of marking interesting “finds”—such as bandanas, bright streamers).

Optional: pencils, index cards or simple field journals, hand lenses, field identification books, zipper-type plastic bags or other small containers for looking at things collected temporarily. Also, see pages 18–19, “Mentors’ Kit.”

Procedure: Getting Ready

Choose an area for your group’s walk. Then, scout your place by doing a solo “prewalk” at the same time of day as you plan to do your group walk; look for interesting features, things to wonder about, and signs of change. In short, look for “teachable moments and places.”

- What features do you think youth will find interesting? What is happening in your place (is anything happening now and only now—e.g., blooming wildflowers, tree leaf buds opening, leaves falling, wildlife moving, birds singing)? Will the place lend itself to further study? Is it a place that, once youth “know” it, they will want to return to it?
- Will the participants need warm jackets, boots (old shoes), or long pants for going off the trail?
- How much time is needed to slowly walk the site exploring, not just walking? There is a big difference!
- Can you find out some history or stories of the area? You might look for an old map or photos showing the site, or talk to long-time residents of the area.
- Does the place require any special planning for safety? (For example, will human use patterns and traffic patterns determine the best time of day to visit the site? If the site is near water, will youth need life jackets?) How will youth need to dress for the walk? (What outerwear will be needed? Will they need to wear shoes they can get muddy? Will they need a hat, long sleeves, and long pants in order to stay warm or avoid biting insects?) Are there insects, poisonous plants, bee hives or other safety/comfort issues?



HINT:

Remember the learning cycle explained earlier in this guide. Kids need and like to:

- Do
- Reflect on what they have done, seen
- Apply/Share what they have learned

Be sure to consider your group carefully; youth who have had limited outdoor experiences will find even average mosquito densities or moderate dampness extremely uncomfortable. You may need to revise your choice of sites depending on the general comfort-level and experience of your group! Consider taking another volunteer and one or two youth on your scouting walk, to see if the site is interesting from their perspectives!

In leading a Discovery Walk, there are many “doing” activities which could be included to keep the walk lively for youth. These activities are simply what kids like to do—and provide very basic “hooks” to capture youths’ interests!

These activities include:

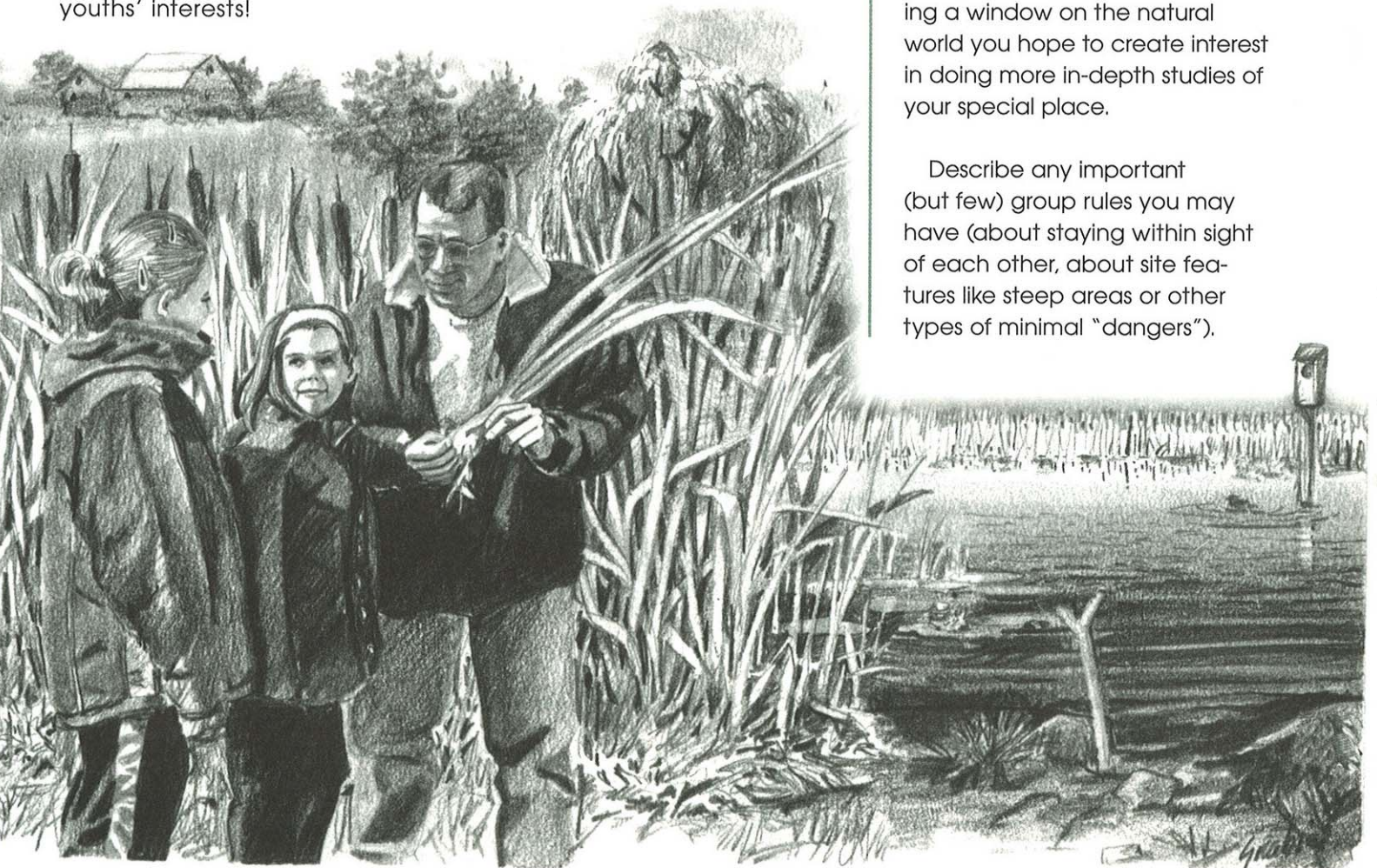
- observing (writing in a journal)
- catching/collecting things
- drawing/sketching
- taking photos
- taking an inventory, listing what’s there
- building (e.g., nestboxes, feeders)
- simply exploring or travelling
- getting dirty
- building and “living” in something (e.g., a temporary “fort”)
- recreating...canoeing, fishing, etc.

Decide which of these activities you might be able and prepared to do with youth at your site, then scout the site with these activities in mind.

Doing

1. Tell your group that you’ll be going on a Discovery Walk. (Or use some sort of creative label for the walk that you think might appeal to your youth, such as “Adventure Hike,” or “Wetlands Are Wild and Wonderful” Walk!) Also, for older youth, you might read the group a short quote (such as something from Aldo Leopold’s *Sand County Almanac* essay “January Thaw”) to set the stage for your walk.
2. Tell the group members that you want to introduce them to an outdoor site with all its natural components. You want them to have fun, and in turn, become more comfortable with the outdoors at this new place. By opening a window on the natural world you hope to create interest in doing more in-depth studies of your special place.

Describe any important (but few) group rules you may have (about staying within sight of each other, about site features like steep areas or other types of minimal “dangers”).



3. Tell the group that you will be doing something like a scavenger hunt on your new site. Give each pair of youth a colored flag or other type of non-permanent visible marking item (such as a bandana, bright streamer, etc.). Instead of having everyone picking up everything they find, tell the pairs that they are to explore their area, then use the marker when they discover something interesting. Besides the environmental reasons for not collecting everything, often the area surrounding where something interesting was found is just as important as the find itself!

Location will usually help you identify the object in question or at least tell the story of what happened at the discovery site. A single feather may be just the beginning of a larger story only a few feet away. Was the pheasant killed by a hawk, or is the feather from a nearby nest? Was the bird killed by a predator (a broken bloody feather), or did a bird just drop the feather?

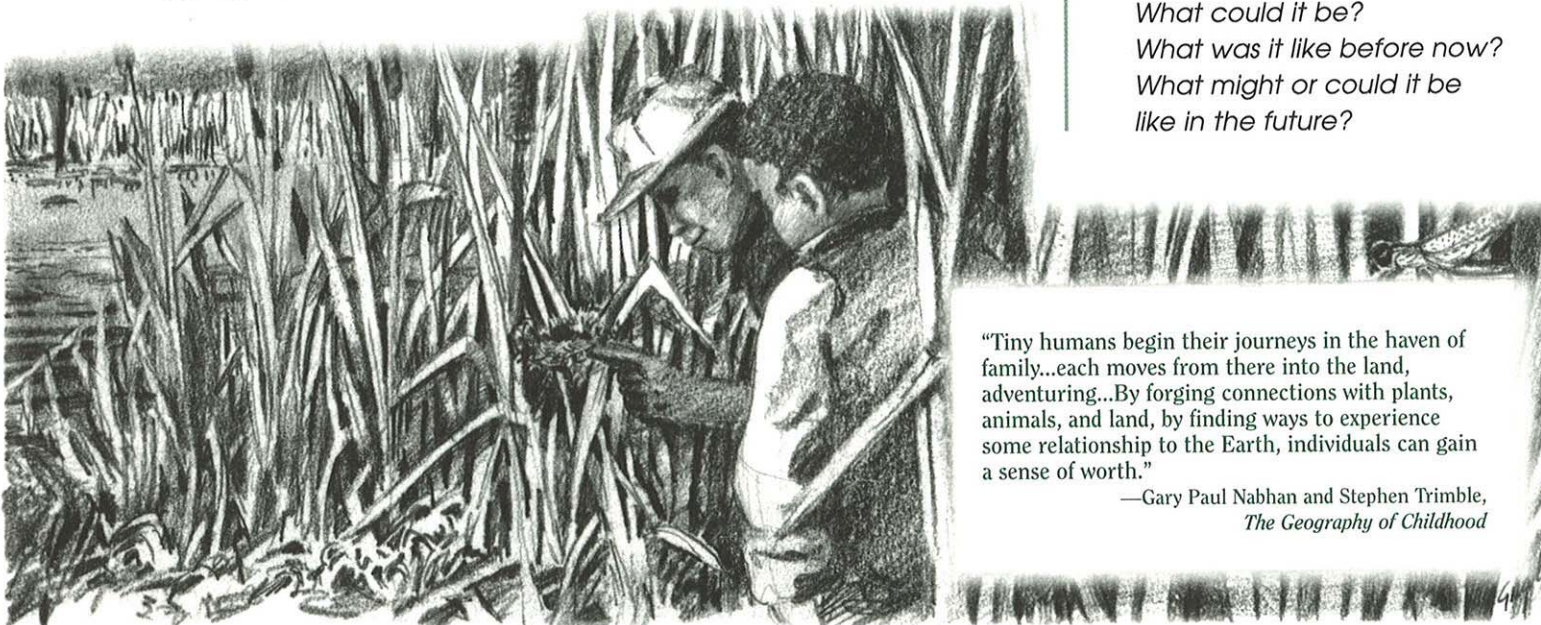
Encourage the youth to look high, and to examine low spots...to look at big features, and to look at the tiniest of features—whatever is of interest!

4. Give the youth plenty of time to roam (within the area you define, and for younger youth, within view of adults). Remember, there is no fixed way to explore. Your group members must decide how they want to do it. Kids love to discover for themselves. Encourage each pair, using phrases and questions such as “What’s out there?” “Let’s see what we have here.” “Gee—I wonder what that is, too.” “You’re right, that’s very interesting—I didn’t notice that before!” It is at this time that you might encourage youth to write a field journal entry or brief notes (see optional step #5, below). Or, your youth could photograph, sketch, or “do” the activities suggested in the Background section of this activity.

5. (Optional—Activity alternative format) Instead of having each pair of youth pick their own locations to explore, you could (from your earlier scouting activity) have the group stop at six to eight spots you determine in advance will probably catch their attention and interests. For example, stop the group at a place with wildlife sign (tracks, droppings, feeding evidence), at a dead tree (called a “snag”), among a quiet grove of planted pines, at an area of an old homesite now grown over with shrubs and trees leaving only some small evidence of a foundation and yard plantings, in an open area with a wide panoramic view, at an area that has had some human disturbance over time, etc.

At each spot, ask these 4 very open-ended questions (allowing time for pairs of youth to discuss and possibly write their answers on an index card or in a journal):

*What do you see?
What could it be?
What was it like before now?
What might or could it be like in the future?*



“Tiny humans begin their journeys in the haven of family...each moves from there into the land, adventuring...By forging connections with plants, animals, and land, by finding ways to experience some relationship to the Earth, individuals can gain a sense of worth.”

—Gary Paul Nabhan and Stephen Trimble,
The Geography of Childhood

Reflecting: Talking It Over

6. Reflecting on what your group members have seen and applying/sharing their learning are important final steps in a Discovery Walk. Bring everyone back together, and visit each special feature identified as interesting by the youth. Let the pair of youth share what they flagged, and share why they noticed it; let them describe what they see, and what they think the feature could be. Ask others in the group what they notice about someone else's site.

It is at this point that you can gradually introduce terms, concepts or even identification characteristics with which you might be familiar. You can be guaranteed that youth will see things you did not notice on your scouting trip and with which you are not familiar! Don't worry—use the questioning skills outlined earlier in this mentor's guide, consult any field guides you might have, and most importantly, be ready to encourage the youth who is most interested to go further in looking up and learning more about the feature they have discovered!

Some additional tips for doing and reflecting on this experience:

- Keep a lively, interested outlook, no matter the conditions, the weather, or your level of experience with the area.
- Don't be afraid to say "I don't know—what do YOU think?" This helps stimulate youths' curiosity and helps them see you as a mentor willing to learn with them.
- Be sure to leave time for "down time" or "play time." Youth who have spent little time outdoors and experienced youth alike gain pleasure and heighten their curiosity by goofing around in a creek, building forts in the bushes, gathering near a special tree to chat, and making use of environments in their own special ways.
- Let kids lead! From time to time, make sure youth take the lead! Some have never had the opportunity to "be the leader" for a group.
- Know your group! Sometimes, teens and younger youth in one group won't mix. You may need to split up your group by age or by interests. Or, be ready to handle very different types of interests and attention spans while on the walk.



HINT:

Remember...

- Dress lightly in layers
- Pre-time your walk
(with kids it's twice as long)
- Make your first walk comfortable!

Important Note for Mentors:

Be careful about encouraging youth to collect interesting “treasures” they discover. Many items are great for collecting—examples of items which can easily be collected include: walnut shells left behind by squirrels which have eaten the nuts, pine cones or needles, flowers which are not protected by law, insects and other invertebrates. Kids love to collect things, and having items such as these can truly seem like having “treasures.” However, feathers of most birds, parts of birds or animals, and rare or endangered or threatened species are not to be possessed—check with the Michigan Department of Natural Resources Wildlife Bureau (<http://www.dnr.state.mi.us>) on what species of plants and animals are protected. If you wish to do much collecting, you will need to apply for a Scientific Collectors’ Permit from MDNR Wildlife Bureau and/or Fisheries Bureau. Finally, be sure to help foster a “take only pictures,

leave only footsteps” ethic over the long run with youth—do let them collect the treasures they can, and DO LET THEM ENJOY the many “keepsakes” our environments have to share, but encourage them to think about the impacts they may leave in a highly used area or with rare features if too much collecting occurs.

Applying: Using What We Know and Sharing What We Learned

Apply what was learned by having the youth decide what they want to learn about next! And consider sharing what was learned through making a group display (for a county fair, science fair, or Earth Day event)!

Adaptation

At a wet, wooded site walkers could focus on noticing all of the many types of wetlands in just a short distance. For example, walkers could explore bogs, lakeshore swamps, small swamps, and other sites, all close together! Or the group could visit a variety of wildlife habitats, such as a meadow, wetlands, hilltops, older forests, and a younger aspen cutting! At a more urban or suburban site, there are just as many opportunities (if not more) to discover many things with your group within a short distance. At a schoolground, look for asphalt, street trees (Tree of Heaven, etc.), weed patches, plants (such as chicory, knotweed growing through sidewalk, moss, smartweed, algae, vines, plantings, etc.), animals or animal signs (look during day, dusk, or night), and water (watch the



rain, watch where water accumulates after the rain, trace water from rooftops and parking lots to where it goes, watch puddles, learn about where drinking water comes from and wastewater goes). Take your walks early in the school year, throughout the year, or visit one space at several seasons. Don't forget the wide range of places you have to explore: schoolgrounds, rooftops, church lots and grounds, vacant lots, parks, community centers, doing street surveys, or visiting building structures (throughout the city scape), or even walking in cemeteries.

Extensions/Additional Resources

Take several varieties of this Discovery Walk, by:

- looking at all things in general
- discovering things in a general category (e.g., wildflowers, or wetlands, or types of wildlife habitats)
- exploring your place to brainstorm opportunities for study or management of it.

Ideas for this activity and for further study include the following:

Dudderar, Glenn R., Denise Wecker-Seipke, Dale K. Elshoff, Shari L. Dann and C. A. Boucher. 1996. *School Ground Habitat for People and Wildlife*. MSU Extension Bulletin E-2583, E. Lansing, MI.

Knapp, Clifford E. 1995. *Lasting Lessons: A Teacher's Guide to Reflecting on Experience*. ERIC Clearinghouse on Rural Education and Small Schools, Charleston, WV.

Knapp, Clifford E. 1996. *Just Beyond the Classroom: Community Adventures for Interdisciplinary Learning*. ERIC Clearinghouse on Rural Education and Small Schools, Charleston, WV.

Project Learning Tree activities, including: "School Yard Safari" and "Peppermint Beetle Walk." See also the *Leopold Education Project* for many more activities, especially for teens and older youth. Contact: Michigan Project Learning Tree and Leopold Education Program Coordinator at: MUCC, 2101 Wood St., Lansing, MI 48909. (<http://www.mucc.org>)

Pepi, David. 1985. *Thoreau's Method: A Handbook for Nature Study*. Prentice-Hall, Inc., Englewood Cliffs, NJ.

Russell, Helen Ross. 1973. *A Teacher's Guide: Ten-Minute Field Trips, Using the School Grounds for Environmental Studies*. J. G. Ferguson Publishing Company, Chicago, IL.

Shaffer, Carolyn and Erica Fielder. 1987. *City Safaris: A Sierra Club Explorer's Guide to Urban Adventures for Grownups and Kids*. Sierra Club Books, San Francisco, CA.

VINE: *Volunteer-Led Investigations in Neighborhood Ecology*. For more information, contact North American Association for Environmental Education, 410 Tarvin Rd., Rock Spring, GA 30739 (<http://www.naaee.org>).

Community Service

From the start, consider having your youth do this activity at a site where you intend to have youth plan and conduct some sort of community service activity later. For example, this activity could lead into such community service projects as: Adopt-A-Park, Adopt-A-Forest, Adopt-A-Neighborhood, or Adopt-A-Roadside projects.

Exhibits/Sharing

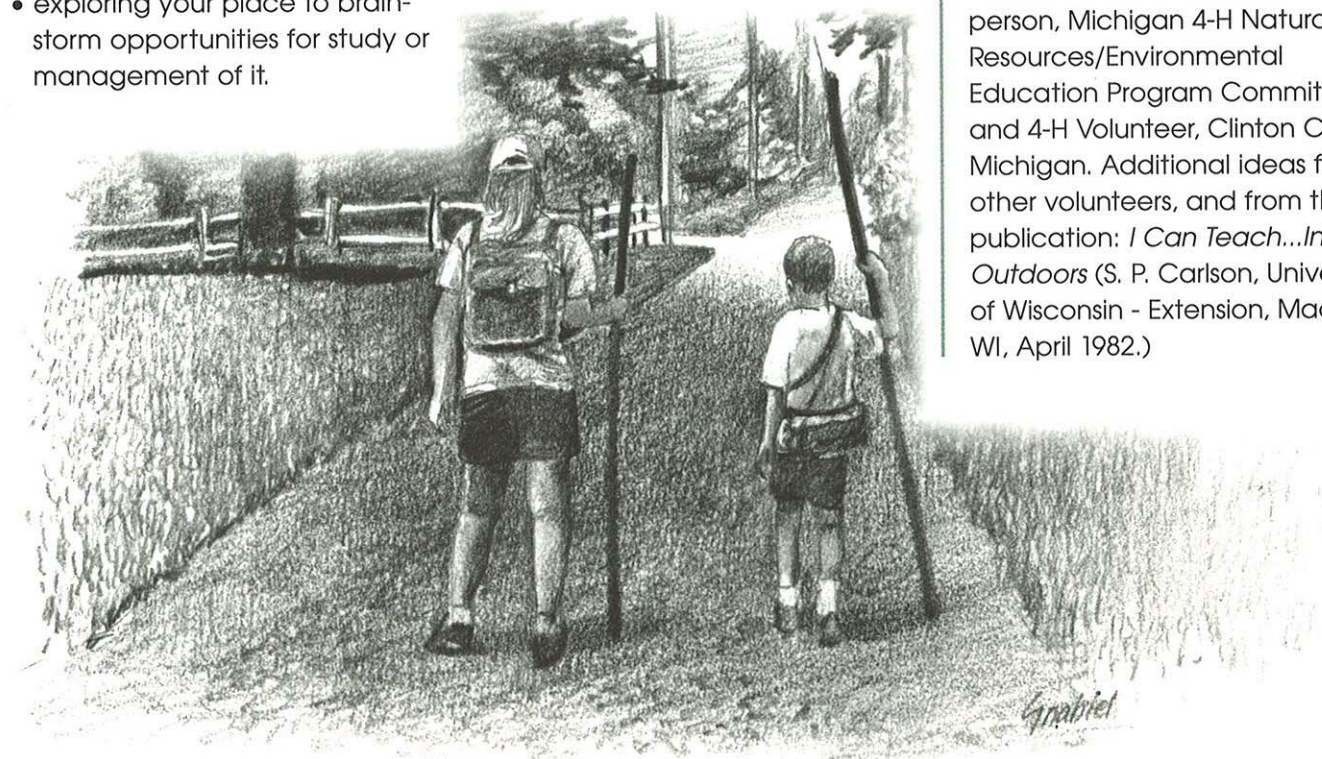
Have youth share: field journals, sketch maps, sketches, photos, or small collections of items seen while on their explorations. Prepare a display of how the area changes throughout the day, or over several seasons.

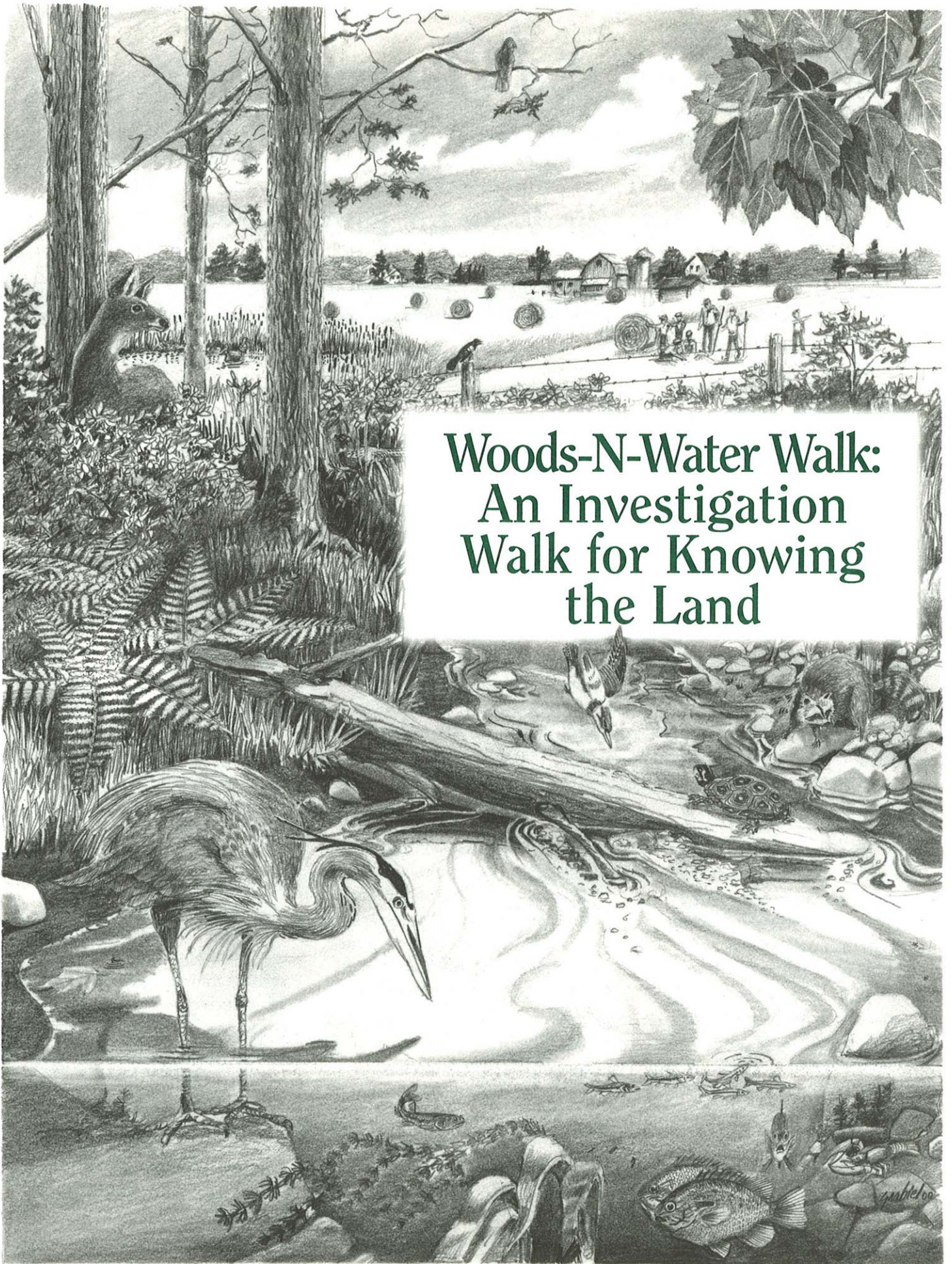
Career Opportunities

Naturalist, science teacher, outdoor writer, outdoor guide, natural resource manager

Source

Written by Bud Schulz, Chairperson, Michigan 4-H Natural Resources/Environmental Education Program Committee, and 4-H Volunteer, Clinton County, Michigan. Additional ideas from other volunteers, and from the publication: *I Can Teach...In the Outdoors* (S. P. Carlson, University of Wisconsin - Extension, Madison, WI, April 1982.)





**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.

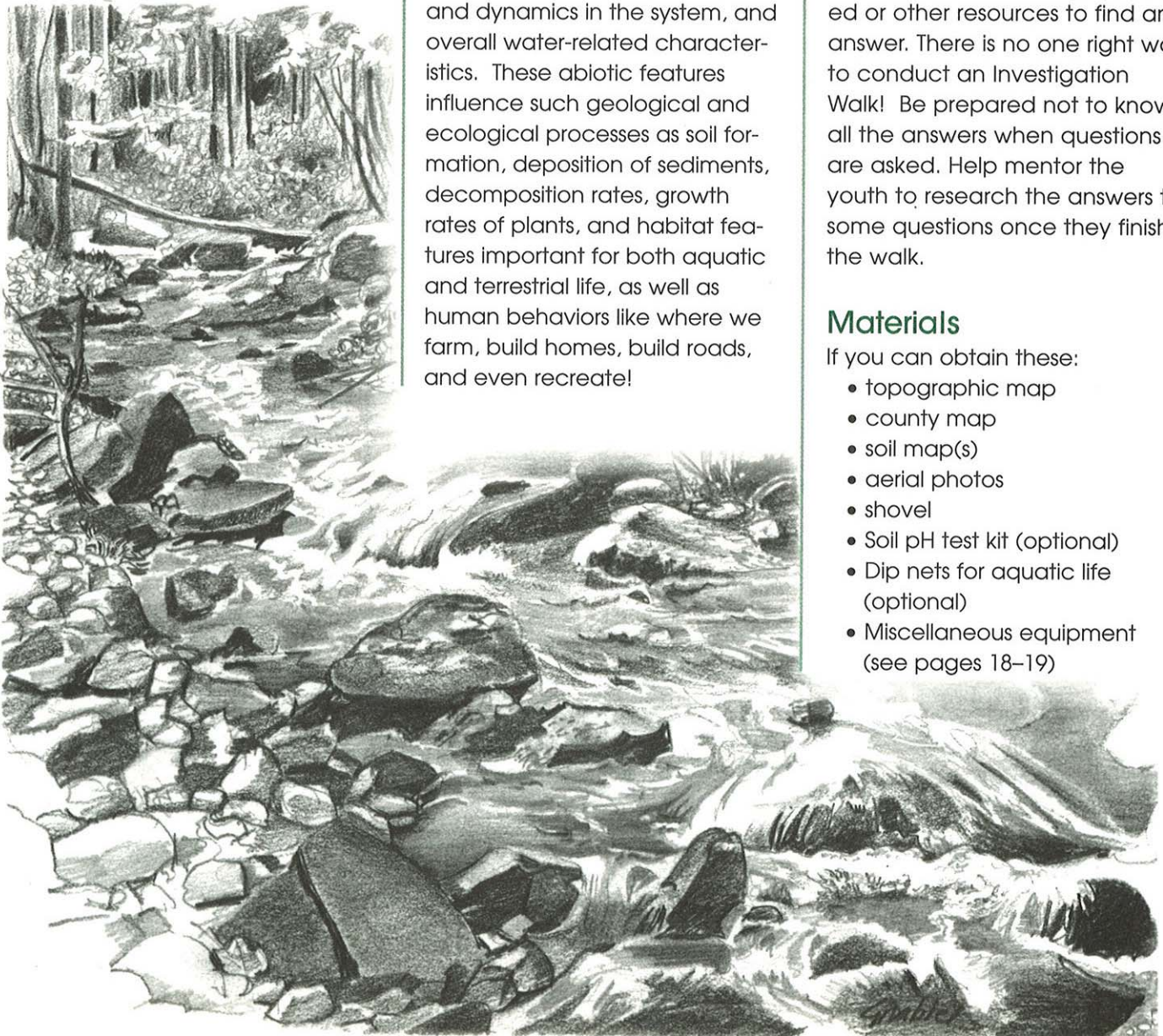
Landscapes are the broader areas of land encompassing both living (biotic) and abiotic (non-living) components. A watershed is the land area drained by a particular network of water bodies such as rivers, streams and lake systems. Abiotic features important in landscapes and watersheds include: soil (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?

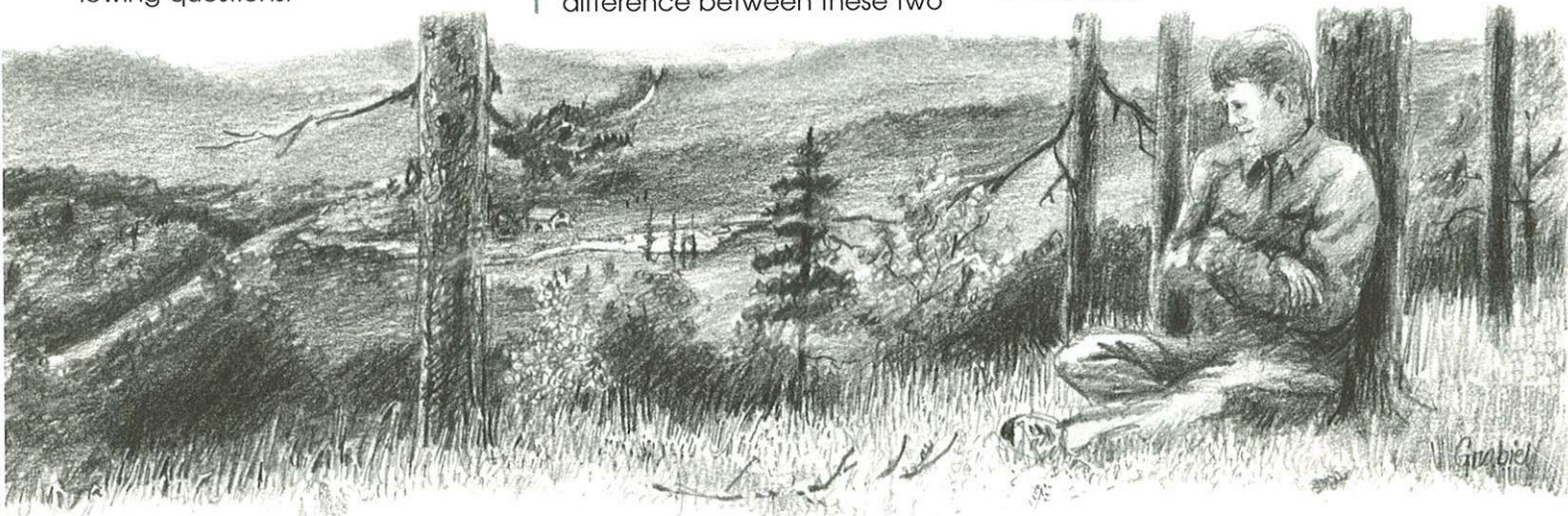
Is there anything I might be overlooking on this site?

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.)

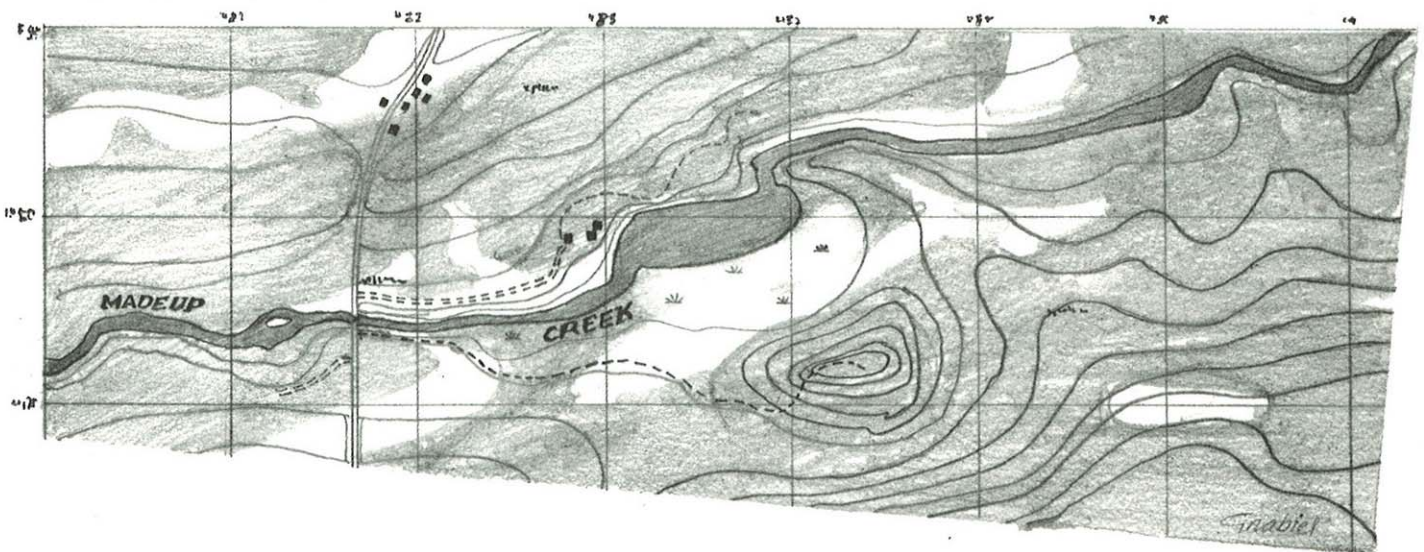
Locate a soil survey for information about the soils in the area before going into the field. Look at a topographic map of the wider area to look for hills, depressions and drainage areas. Use the aerial photos in the soil survey book to look for marshy areas, steep slopes and other features that correspond 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.)

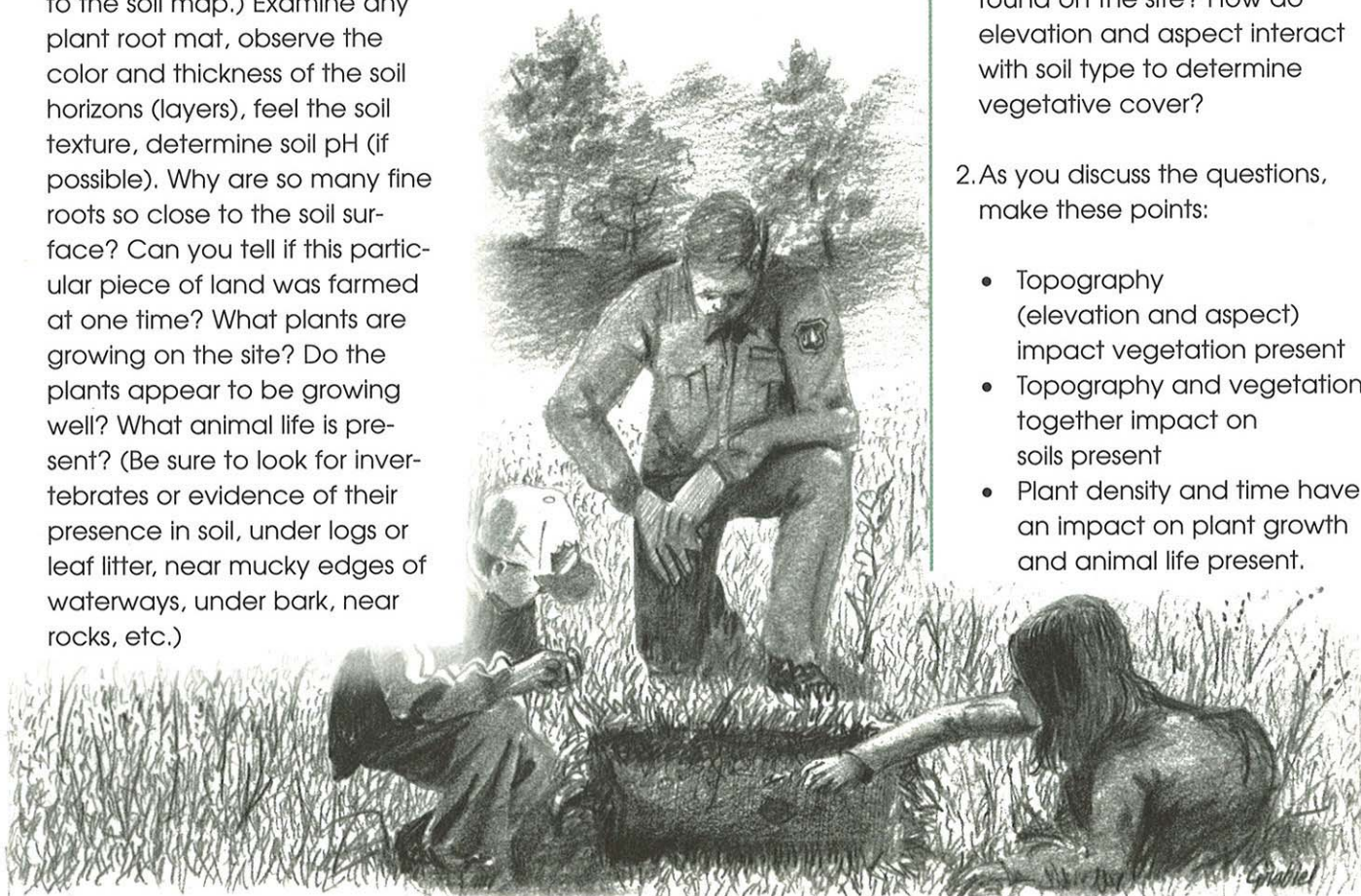
What soils are the best for agriculture, forestry and wildlife?

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?

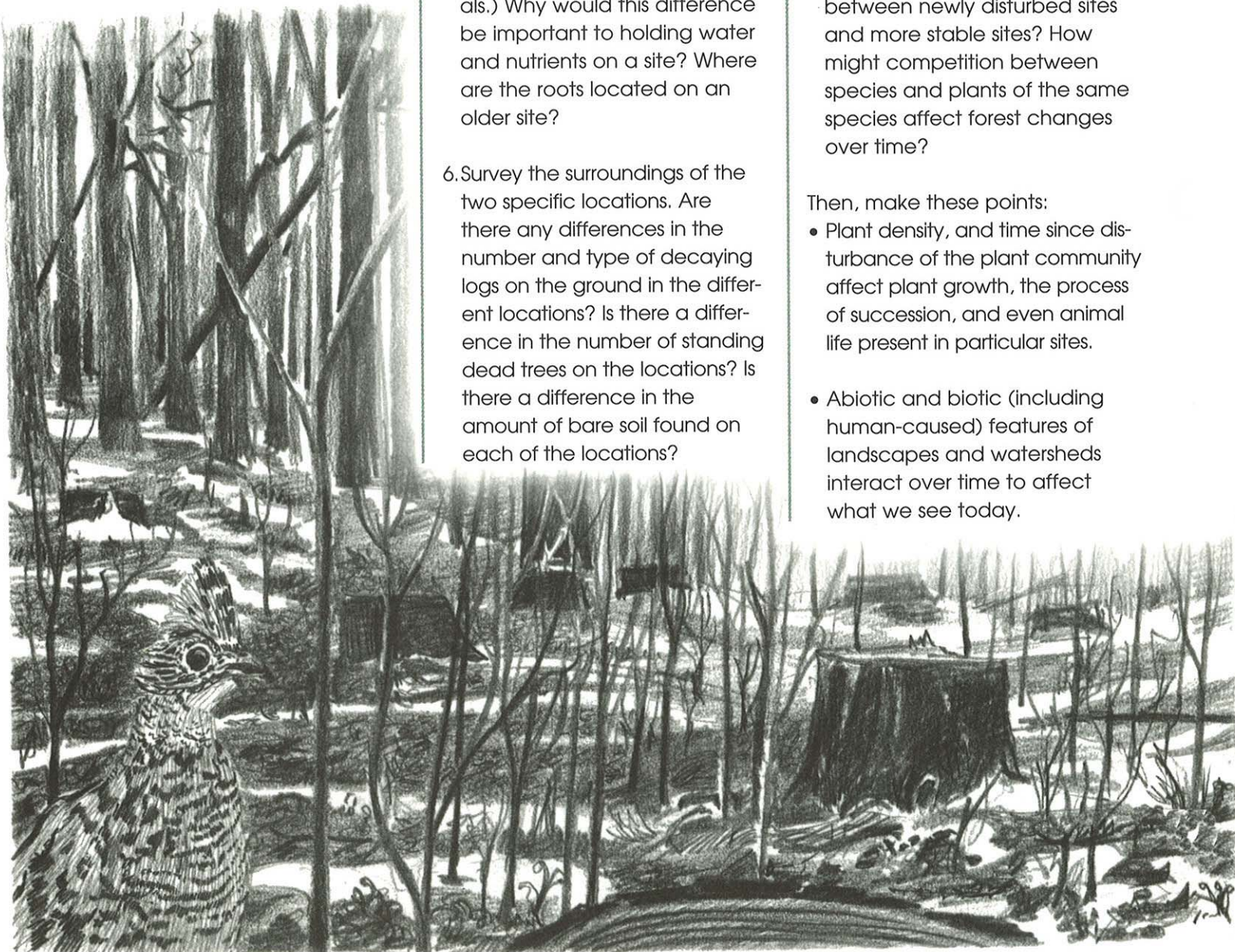
Reflecting/Applying

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.

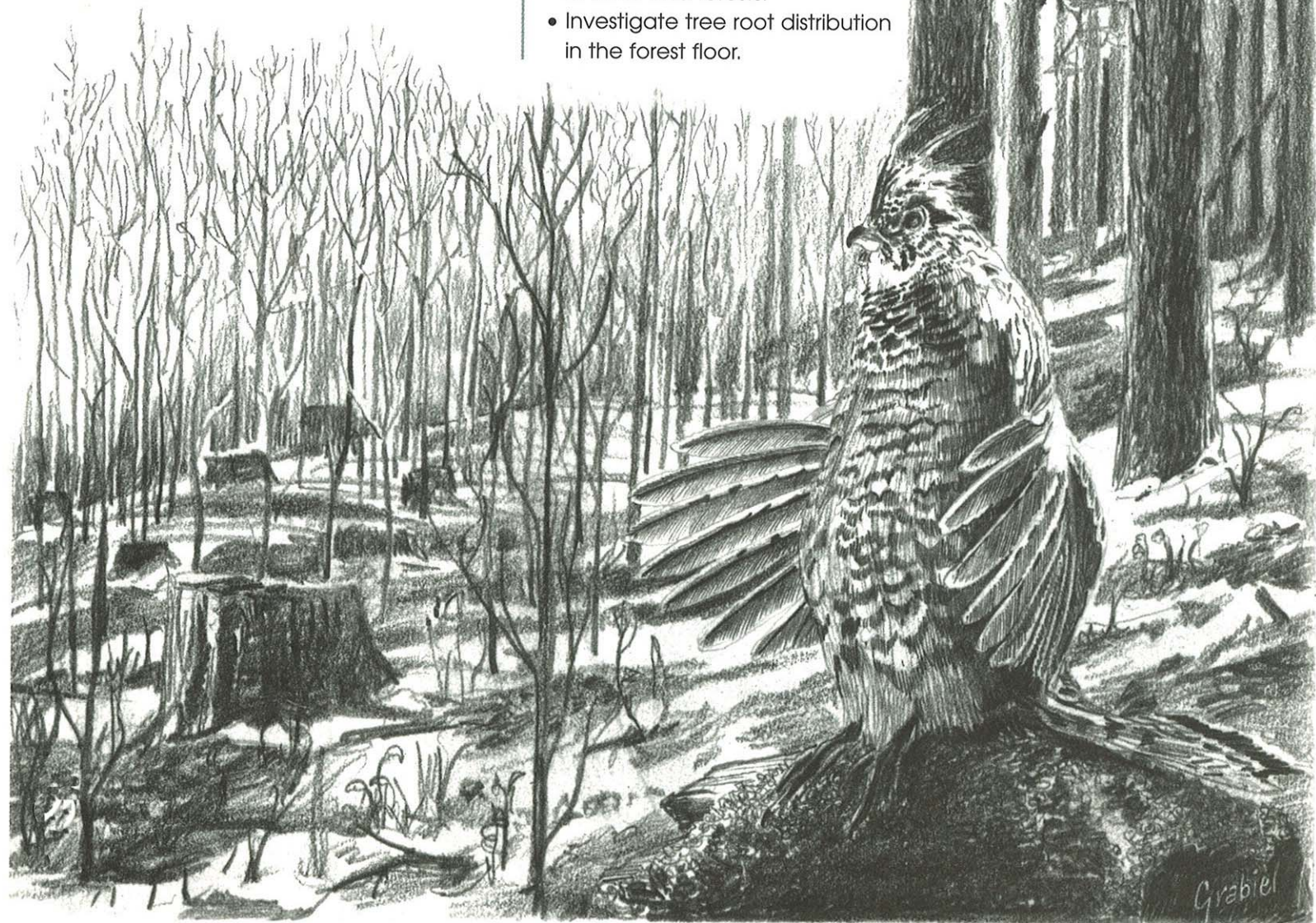
Extensions/Additional Resources

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

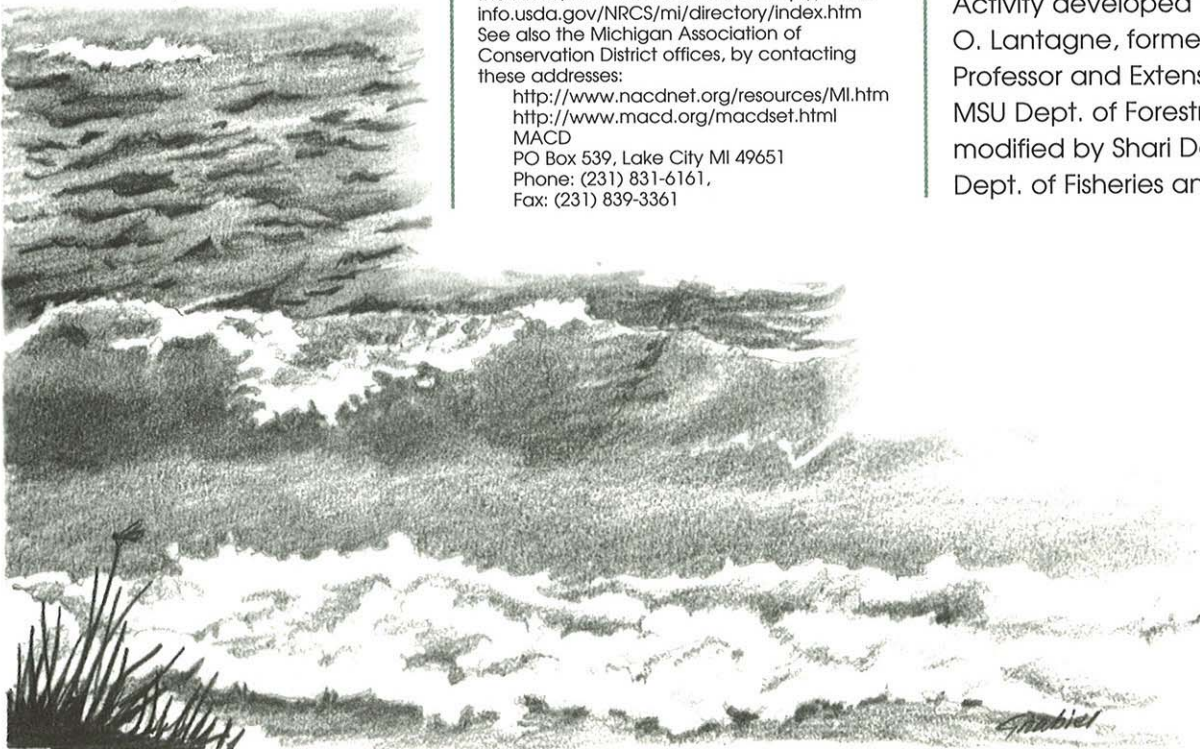
Make a display of the biotic and abiotic features on two very different sites, and explain some of the possible reasons for these differences. Find a highly disturbed area (such as a small clearing, abandoned parking lot, or other such area), and return over time to take pictures to make into an exhibit.

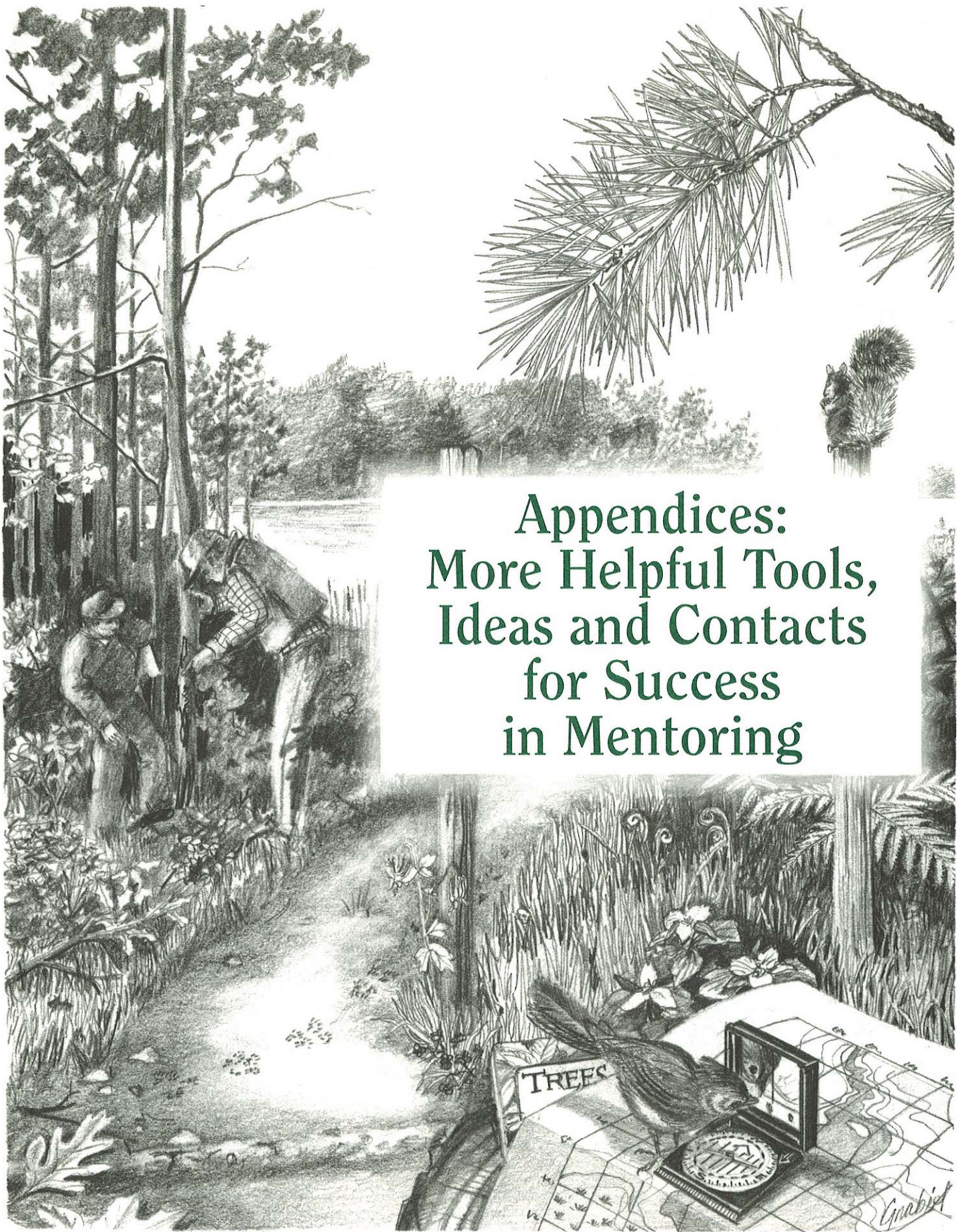
Career Opportunities

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

Shari L. Dann

Associate Professor and Extension Specialist

Dept. of Fisheries and Wildlife,

Michigan State University, E. Lansing, MI

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!

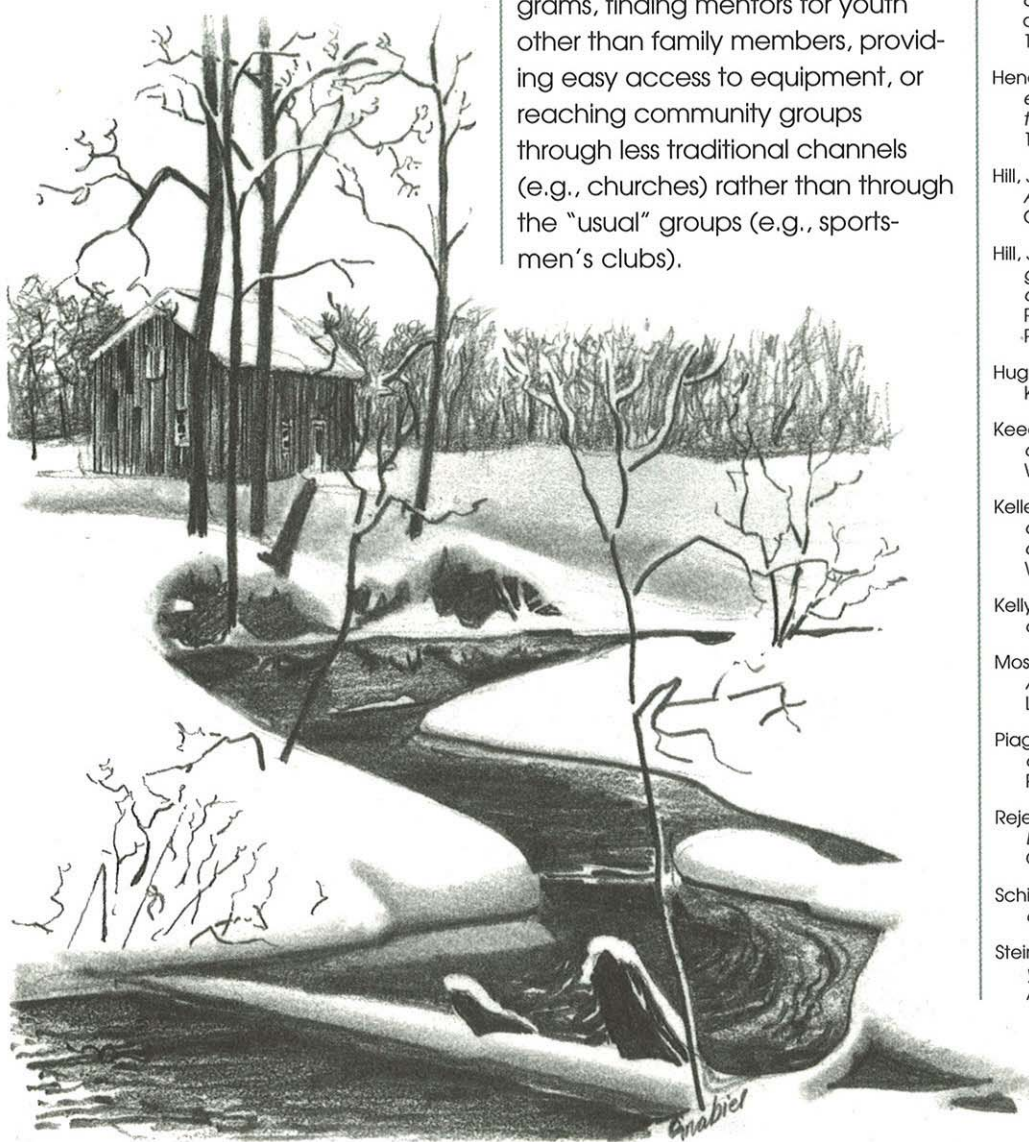
About Youth At Risk

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!



Appendix C

Finding Partners: Useful Contacts, References and Materials for Mentors

Programs and Organizations

Michigan State University Extension

4-H Natural Resources and Environmental Education Program

4-H Shooting Sports Program

Project F.I.S.H. (<http://www.projectfish.org>)

4-H Great Lakes and Natural Resources Camp (for 13-15 year old teen leaders; in early August) annual teen leadership development opportunity for 4-Hers and other teens from throughout the state.

4-H NREE Publications can be found at

<http://ceenet.msue.msu/bulletin/ctlgmast.html>

Other 4-H publications can also be found at this web site, including:

Shared Space: Our Common Earth (4H1497)

Shared Space: Ways to Learn More Packet (4H1499)

(Field Journals, Sketch Maps, Field Trips, Business Letters, Debates and Panel Discussions, Experiments, Exploring Your Ideas, Interviews, Pen Pals, Questionnaires and Surveys)

Plan It: Your Personal Guide to Making a Plan and Carrying It Out (4H1501)

Contact: Your county MSU Extension office

Michigan United Conservation Clubs

The Conservation Catalog—lists sources for teaching materials, nature centers, parks, and other useful contacts in Michigan and throughout the country

MUCC Youth Camps

Conservation Service Projects Booklet—ideas and resources for doing local environmental stewardship projects

Project Learning Tree and the Leopold Education Program

The Great Lakes WISE (Waste Information Series for Educators) Project

WOW—Wonders of Wetlands

Tracks—magazine and materials for younger youth

Wildlife and Wildlife Encounters—live animal programs

Topographic maps and lake maps, county map books

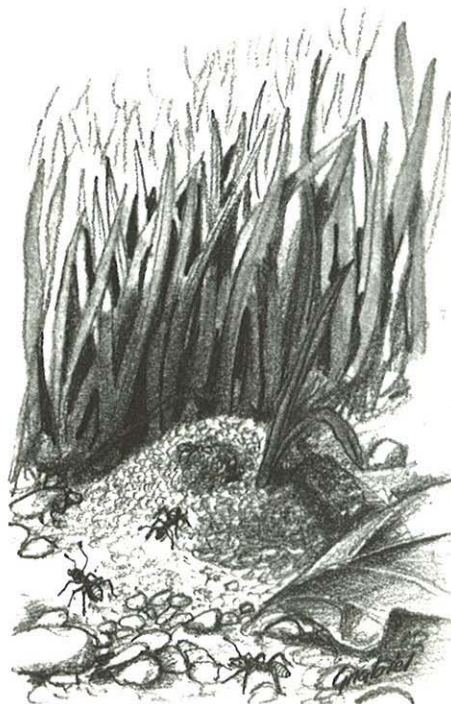
Contact: MUCC

PO Box 30235

Lansing, MI 48909

(517) 371-1041

<http://www.mucc.org>



Project WILD

Teacher training programs and curriculum materials; specialized training (e.g., Wild about Elk!) available, too.

Contact:

Michigan Project WILD
409 Ag. Hall
Michigan State University
E. Lansing, MI 48824
(517) 355-1712
<http://www.canr.msu.edu/projectwild>

Purple Loosestrife Project

K-12 and club based activities to rear beetles which help remove the exotic wetland plant, purple loosestrife

Contact:

Mike Klepinger
(517) 353-5508 or
Doug Landis
(517) 353-1829
Michigan Sea Grant
College Program
Michigan State University
E. Lansing, MI 48824
<http://www.msue.msu.edu/seagrant/pp>

Michigan Department of Natural Resources

<http://www.dnr.state.mi.us>

Michigan Department of Environmental Quality

<http://www.deq.state.mi.us> and
<http://www.deq.state.mi.us/enved>

Michigan Envirothon

Annual team-based competition for high-school-age youth. Participation in the state event can lead to participation in the National Envirothon, where scholarships and out-of-state trips are awarded!

Contact:

Michigan Envirothon
c/o Michigan Association
of Conservation Districts
201 N. Mitchell St., Suite 301
Cadillac, MI 49601
(231) 876-0326
Fax: (231) 876-0372

Michigan Association of Conservation Districts

Contact the offices at:
<http://www.nacdnet.org/resources/MI.htm>...or <http://www.macd.org/macdset.html>

Natural Resource Conservation Service

To contact Michigan offices of the NRCS, find their locations at:
<http://www.info.usda.gov/NRCS/mi/directory/index.htm>

Adopt A Part of Michigan

Michigan Community Service
Commission
111 S. Capitol Ave.
Romney Bldg., 4th Floor
Lansing, MI 48913
Toll Free: (888) 797-6272

<http://www.state.mi.us/career/mcsc>
Statewide awareness campaign and program to adopt local highways, parks and forests. Partnership between the following organizations: Michigan Community Service Commission, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, and Michigan Department of Transportation

President's Environmental Youth Awards

Environmental Protection
Agency
Region 5, EPA
(800) 621-8431
<http://www.epa.gov>

Annual national awards program; past projects awarded have included school and community recycling programs, construction of nature study areas, and student-created videos, skits and newsletters.

Environmental Excellence Awards

Sea World
7007 Sea World Drive
Orlando, FL 32821
Toll Free: (877) 792-4332
<http://www.seaworld.org>

Annual awards program in categories K-5, grades 6-8, 9-12, and college

Partners and Funding for Your Local EE Program

Regional and National Grants

A few regional and national grant sources are summarized below. For more tips on how to apply, and for information on deadlines for national and regional grants, contact the North American Association for Environmental Education, (<http://www.naee.org>). Order the publication "Grant Funding for your Environmental Education Program: Strategies and Options."

EPA—Environmental Protection Agency national and regional EE grants program

Contact: national office and regional offices for EE at <http://www.epa.gov>

State grants programs:

MDNR Natural Heritage Program
Non-Game Grants
NEST—Nature Education Sites for Tomorrow

MDNR Fisheries Division—
Inland Fisheries Grant Program

MDNR Forest Management
Division—Urban and Community
Forest Grant Program and Arbor
Day Grants

Local sources of support:

Regional foundations, school education grants (e.g., Eisenhower grants, etc.), local civic organizations, local Soil & Water Conservation Districts, local environmental consulting firms, sportsmen's clubs, sportfishing clubs, local retailers (e.g., farm and garden stores, book stores, sporting goods and outdoor equipment stores, etc.).

Getting to Know the Land and Water: Leaders' References in EE and Natural History for Michigan and the Great Lakes Region

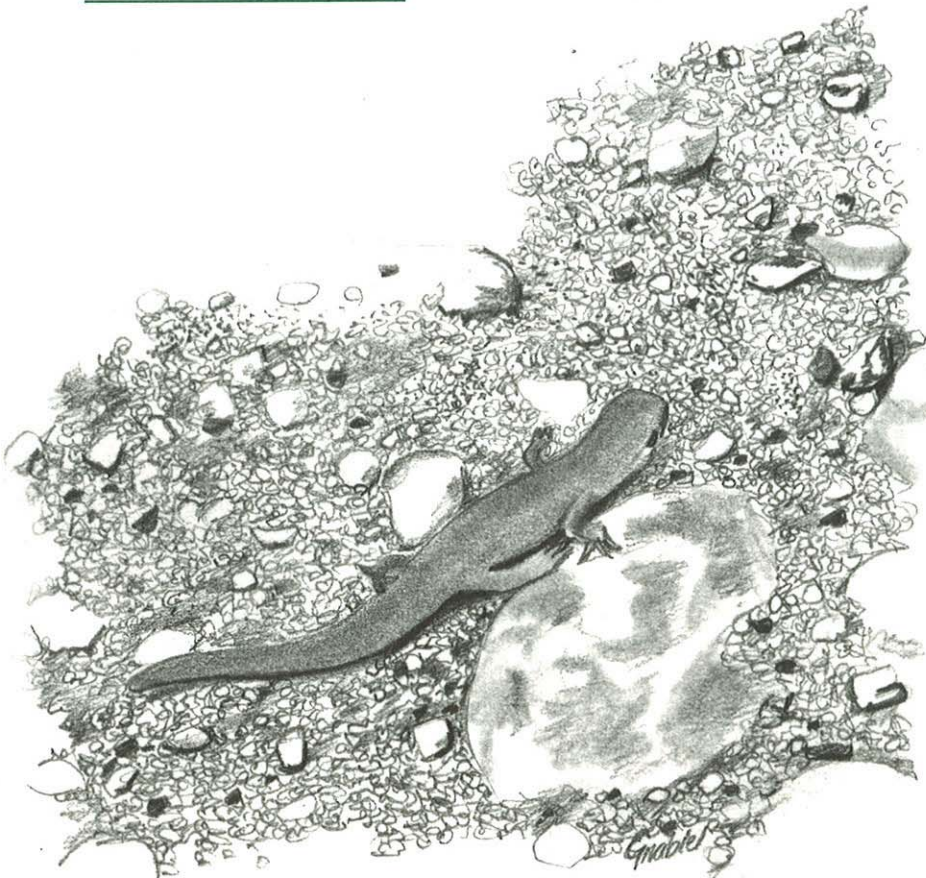
Volunteer leaders and teachers have told of how challenging it is to become acquainted with different ecosystems and organisms, when they either grew up or went to school in some other region of the U.S. If you are interested in getting to know species and systems of Michigan and the Great Lakes region, here are some references you might find helpful! Some you may even find are available at your local library or bookstore.

From the MSU Extension Bulletin Office (Room 10B, Agriculture Hall, E. Lansing, MI 48824-1039):

G. R. Dudderar. 1991. *Nature From Your Back Door*. MSU Extension Bulletin E-2323, E. Lansing, MI.

J. A. Holman, J. H. Harding, M. M. Hensley, and G. R. Dudderar. 1989. *Michigan Snakes: A Field Guide and Pocket Reference*. MSU Extension Bulletin E-2000, E. Lansing, MI.

J. H. Harding and J. A. Holman. 1990. *Michigan Turtles and Lizards: A Field Guide and Pocket Reference*. MSU Extension Bulletin E-2234, E. Lansing, MI.



J. H. Harding and J. A. Holman. 1992. *Michigan Frogs, Toads and Salamanders: A Field Guide and Pocket Reference*. MSU Extension Bulletin E-2350, E. Lansing, MI.

W. J. Hoagman. 1994. *A Field Guide to Great Lakes Coastal Plants*. MSU Extension Bulletin E-2449, E. Lansing, MI.

M. R. Koelling and J. Neel. (Reprinted 1997). *Identifying Trees of Michigan*. Extension Bulletin E-2332, E. Lansing, MI.

M. R. Koelling, and R. B. Heiligmann. 1993. *Forest Resource Management Terminology*. North Central Regional Extension Publication No. 478. E. Lansing, MI.

Dann, S. L. 1994. *The Life of the Lakes: A Guide to the Great Lakes Fishery*. MSU Extension Bulletin No. E-2440, and *The Life of the Lakes: A Guide to Great Lakes Fishery Educational Materials*. MSU Extension Bulletin No. E-2441, Michigan Sea Grant Extension, MSU, E. Lansing, MI.

References from other sources

These references are available from various other sources. Check first with MUCC (Michigan United Conservation Clubs), for availability of some of these titles.

P. T. Seng. 1994. *Michigan Wildlife Viewing Guide*. MSU Press, E. Lansing, MI.

NOTE: This is an excellent guide to finding areas to explore throughout Michigan. These areas which have tremendous opportunities for viewing wildlife can be found in urban, suburban, rural and wilderness regions. This book provides ideas for excellent places to take "The Walk" with your youth!

G. Daniel and J. Sullivan. 1981. *A Sierra Club Naturalist's Guide: The Northwoods of Michigan, Wisconsin, Minnesota, and Southern Ontario*. Sierra Club Books, San Francisco, CA.

D. C. Evers. 1992. *A Guide to Michigan's Endangered Wildlife*. The University of Michigan Press, Ann Arbor, MI.

W. Cwikiel. 1997 (2nd edition). *Living with Michigan's Wetlands: A Landowner's Guide*. Tip of the Mitt Watershed Council, PO Box 300, Conway, MI 49722.

G. Dunn. 1996. *Insects of the Great Lakes Region*. Univ. of Michigan Press, Ann Arbor, MI.

B. V. Barnes and W. H. Wagner, Jr. 1981. *Michigan Trees: A Guide to the Trees of Michigan and the Great Lakes Region*. The University of Michigan Press, Ann Arbor, MI.

(New author—for revised version)
Burt, W. H. 1972. *Mammals of the Great Lakes Region*. The Univ. of Michigan Press, Ann Arbor, MI.

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Michigan Minerals, MDNR (booklet)

R. Brewer, G. A. McPeck, R. J. Adams. 1991. *The Atlas of Breeding Birds of Michigan*. Michigan State University Press, E. Lansing, MI.

R. H. Baker. 1983. *Michigan Mammals*. Michigan State University Press, E. Lansing, MI.

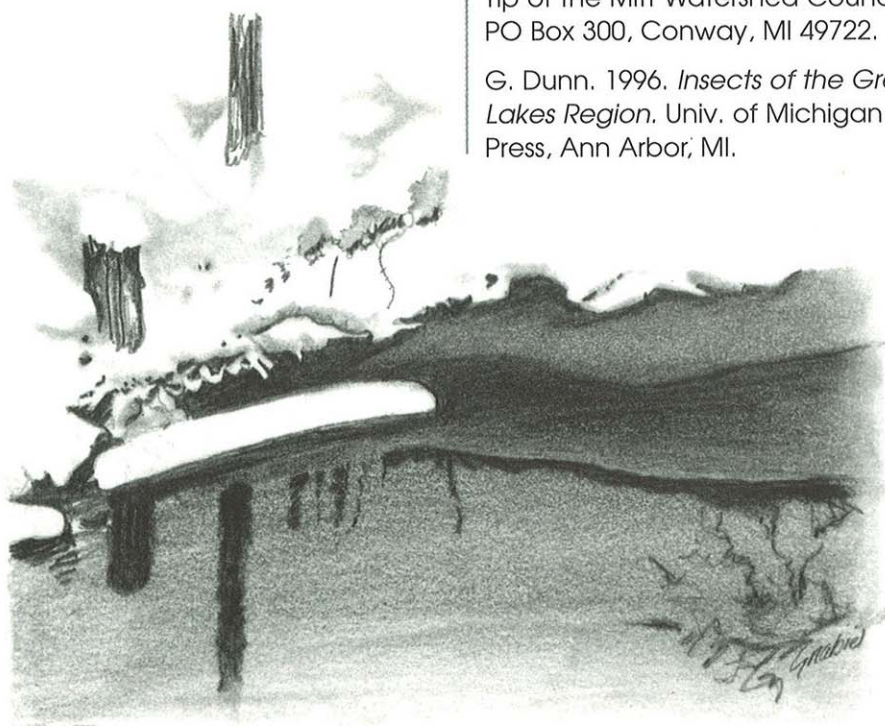
J. A. Dorr, Jr. and D. F. Eschman. 1970. *Geology of Michigan*. The University of Michigan Press, Ann Arbor, MI.

M. J. Caduto. 1990. *Pond and Brook: A Guide to Nature in Freshwater Environments*. University Press of New England, Hanover, NH.

Government of Canada and U.S. Environmental Protection Agency. 1995 (3rd edition). *The Great Lakes: An Environmental Atlas and Resource Book*. Order from: Great Lakes National Program Office, U.S. EPA, 77 West Jackson Blvd., Chicago, IL 60604.

Michigan County Map Guide—Available from MUCC.

Books by Friede Publications, 2339 Venezia Dr., Davison, MI. 48423; by Tom Huggler—variety of books such as *Fish Michigan—50 Rivers*, etc. *Canoeing Michigan Rivers Michigan State and National Parks—A Complete Guide* most of these available to order from MUCC.



Additional Sources for Teaching Materials

Young Entomologists' Society
6907 W. Grand River Ave.
Lansing, MI
(517) 886-0630
<http://members.aol.com/YESbugs>

GREEN: Global Rivers
Environmental Education Network
c/o Earth Force, Inc.
1908 Mount Vernon Ave., 2nd Floor
Alexandria, VA 22301
(703) 299-9400
<http://www.earthforce.org>

Acorn Naturalists
17300 East 17th St., #J-236
Tustin, CA 92780
(800) 422-8886
<http://www.acorn-group.com>

The Rainbow Collection
409 3rd Avenue West
Mobridge, SD 57601-2414
(888) 371-3137

Kendall/Hunt Publishing Company
4050 Westmark Dr.
PO Box 1840
Dubuque, IA 52004-1840
(800) 228-0810
<http://www.kendallhunt.com>

Forestry Suppliers Company
205 W. Rankin St., PO Box 8397
Jackson, MS 39284-8397
(601) 354-3565
<http://www.forestry-suppliers.com>

Ward's Biology
PO Box 92912
Rochester, NY 14692-9012
(800) 962-2660
<http://www.wardsci.com>

HACH Company
(water quality testing only)
PO Box 389
Loveland, CO 80539-0608
(800) 227-4224
<http://www.hach.com>

Carolina Biological Supply
2700 York Rd.
Burlington, NC 27215-3398
(800) 334-5551
<http://www.carolina.com>

Background References

Leopold Education Project
MUCC
P.O. Box 30235
Lansing, MI 48909
(517) 346-6473

Knapp, Clifford E. 1992. *Lasting lessons: A teacher's guide to reflecting on experience*. ERIC Clearinghouse on Rural Education and Small Schools, Charleston, WV.

Pepi, David. 1985. *Thoreau's Method: A Handbook for Nature Study*. Prentice-Hall, Inc., Englewood Cliffs, NJ.

Russell, Helen Ross. 1973. *A Teacher's Guide: Ten-Minute Field Trips, Using the School Grounds for Environmental Studies*. J. G. Ferguson Publishing Company, Chicago, IL.

Shaffer, Carolyn and Erica Fielder. 1987. *City Safaris: A Sierra Club Explorer's Guide to Urban Adventures for Grownups and Kids*. Sierra Club Books, San Francisco, CA.

McClintock, James I. 1994. *Nature's Kindred Spirits*. The University of Wisconsin Press, Madison, WI.

Nabhan, Gary Paul and Stephen Trimble. 1994. *The Geography of Childhood: Why Children Need Wild Places*. Beacon Press, Boston, MA.

Sobel, David. 1993. *Children's Special Places: Exploring the Role of Forts, Dens, and Bush Houses in Middle Childhood*. Zephyr Press, Tucson, AZ.

Hart, Roger. 1997. *Children's Participation: The Theory and Practice of Involving Young Citizens in Community Development and Environmental Care*. Earthscan Publications Ltd., London.

Tekiela, Stan and Karen Shanberg. 1995. *Nature Smart: A Family Guide to Nature*. Adventure Publications, Inc., Cambridge, MN.

Katz, Adrienne. 1986. *Naturewatch: Exploring Nature with Your Children*. Addison-Wesley Publishing Co., Inc., Reading, MA.



Why to Affiliate with Michigan 4-H Youth Development Programs or Other Professional Youth-Serving Organizations

Top Ten Reasons for Affiliating with a Youth Organization

1. Access to resources.

Michigan 4-H Youth Development programs offer a wealth of resources. Most of all, in each and every county, there are trained youth development professionals ready to assist mentors in planning developmentally-appropriate learning experiences. In addition, these staff can put you in touch with the materials and resources available through Michigan State University Extension (<http://www.msue.msu.edu>). Plus, these staff can put you in touch with other local organizations, as well as statewide resources (such as MUCC, see Appendix C). Likewise, other youth-serving organizations (e.g., Scouts, Boys' and Girls' Clubs, Big Brothers/Big Sisters, church and community organizations, park and recreation programs, etc.) offer many resources.

2. Access to training!

Organizations such as those listed above offer a wealth of training opportunities for mentors interested in working with youth. Some of the training topics can include: characteristics of youth of different ages, how to lead fun learning activities, ways to work with youth with special needs, and specialized training in outdoor and environmental topics.

3. Credibility, research basis!

Affiliating with an organized youth program instantly gives your program the credibility needed to make a big impact positively for youth in your community. Organizations, especially MSU Extension, are tied to the most current research on the best ways to reach youth with constructive learning and recreational experiences.

4. Access to assistance in risk management.

Have you wondered about issues like liability, safety, and selection of volunteers? Organized youth-serving programs (and their program staff) are ready to assist mentors in providing background screening of volunteers, access to specialized and inexpensive insurance (for club activities, for community events), advice on planning for safety and avoiding emergencies, help in working with the media, assistance in preparing parent/guardian permission slips and other types of record-keeping, and other topics related to risk management planning (see Appendix E). In addition, many youth-serving



organizations may provide liability insurance coverage for those registered and trained volunteers working with them.

5. Camaraderie!

Join in a special group!

When you join with an organized youth program, you'll experience the fun of being part of an important group of people in your community—those who care about young people!

You'll meet others with similar interests, and make new friends with whom you'll want to keep in touch!

6. Learn from others' successes, and network!

Local networks of youth mentors share their successes and those things which have not worked so well! You'll learn about special opportunities in which you and your youth can take part in the community.

7. Hear about upcoming programs and opportunities throughout the state.

By affiliating with Michigan 4-H Youth Development Programs or any other youth-serving organization, you'll be connected to opportunities throughout the entire state!

8. Access to awards for your youth, for your volunteers and staff!

Youth-serving organizations offer great incentives, awards, educational trips, and even scholarships for youth who participate and develop leadership skills over time. In addition, you can receive these opportunities, too, if you are formally affiliated!

9. Fun.

You'll have fun—feeling well-supported by a professional organization and taking part in an important effort—investing in youth development for positive futures, both for youth and for communities.

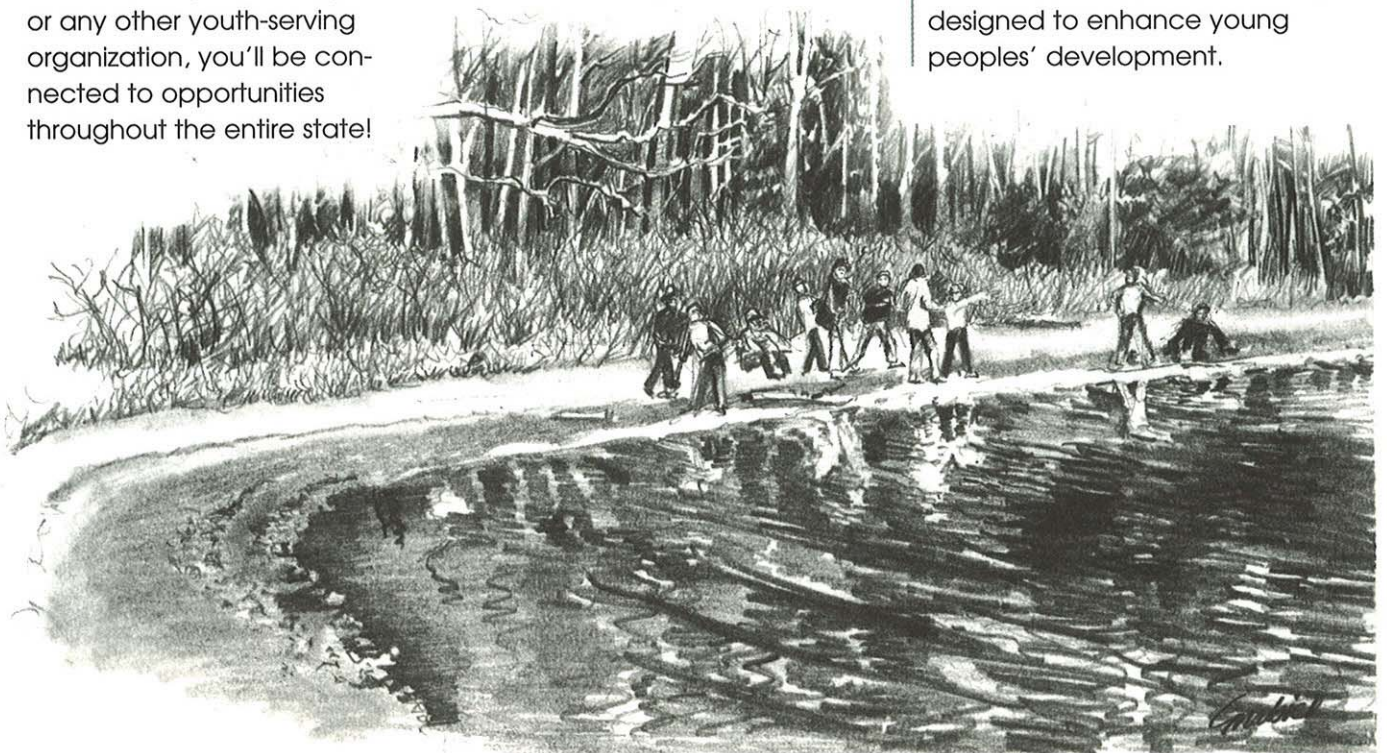
10. It's for the kids! The kids will develop a sense of belonging.

Most of all, the kids will benefit from this affiliation. You'll be providing safe, well-designed learning experiences; the kids will develop a sense of purpose by being affiliated with a larger group, and will feel as though they belong to the community. This is important—because, as we all know, "It takes a village...!"

About the Michigan 4-H Natural Resources/Environmental Education Program

Who is 4-H Natural Resources/Environmental Education For?

There is a long tradition of successful 4-H-sponsored programming for a variety of outdoor and environmental learning areas. Whether you wish to help youth in the subjects of Environmental Stewardship, Conservation, Sportfishing, Shooting Sports, or a variety of other areas, these all fall under the broad "umbrella" of programming in 4-H Natural Resources/Environmental Education. 4-H sponsors programs not only for traditional youth clubs (both community-wide clubs and so-called "project clubs" or special topic clubs), but also for schools, other youth serving organizations (e.g., recreation programs), special events and many other offerings designed to enhance young peoples' development.



The 4-H Natural Resources/ Environmental Education Program involves a wide number of enthusiasts. It is designed for:

- Youth—in schools, in youth clubs, in other youth programs, at home
- volunteers who work with youth
- teachers, curriculum specialists, school administrators
- organization leaders and resource people who want to work with youth (e.g., environmental groups, sportsmen's groups, local civic groups or service organizations, etc.)
- nature center or camp staff
- resource people wanting to work with youth, such as biologists, health officials, conservation professionals, and other science professionals working with agencies, industries and organizations
- and many others!!

Your Role as a 4-H Leader: What Can I Do for Youth in 4-H Natural Resources/ Environmental Education?

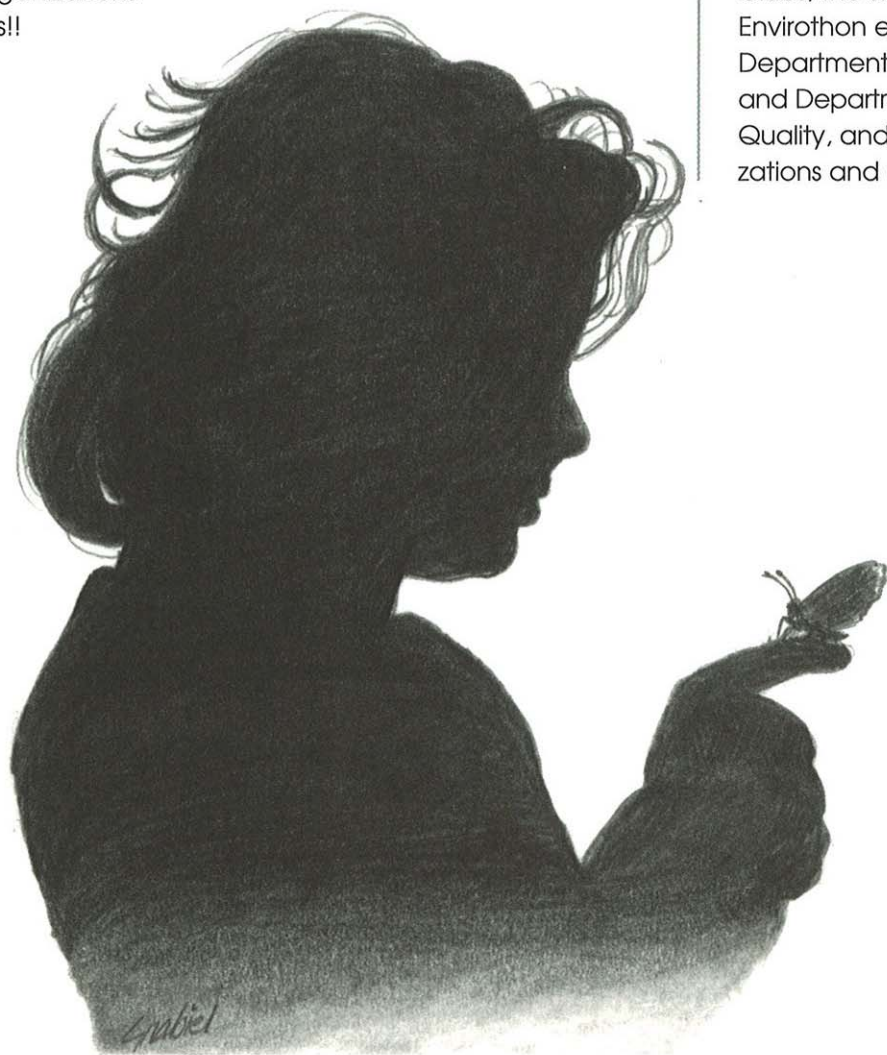
The main goal of the 4-H Natural Resources/Environmental Education Program is:

To help youth become citizens, who...

- are environmentally literate
- have communications skills, outdoor skills and technical skills
- and are dedicated...
...to work by themselves and cooperatively to solve problems related to environmental quality and quality of life.

Through the 4-H NREE Program, you and others can access:

- publications and materials—for teaching and mentoring young people as they learn about environments
- leader/teacher training
- teen leader programs and workshops, such as the 4-H Great Lakes and Natural Resources Camp
- support, from 4-H staff in counties and staff of Michigan State University
- the 4-H NREE Program Committee—a group of volunteers, youth, and many others who plan statewide programs and activities
- other environmental education resources and events, such as Michigan United Conservation Clubs, the state and national Envirothon events, Michigan Department of Natural Resources and Department of Environmental Quality, and many other organizations and agencies.



Appendix E

More Information on Risk Management Planning for Outdoor Learning

NOTE: THIS IS NOT A COMPLETE GUIDE TO RISK MANAGEMENT... YOU SHOULD WORK VERY CLOSELY WITH YOUTH DEVELOPMENT PROFESSIONALS SUCH AS 4-H AGENTS TO DETERMINE THE BEST PRACTICES FOR AVOIDING INJURY AND LEGAL ACTION AS A RESULT OF YOUR PROGRAM!

What is Risk Management?

Anyone involved in providing learning experiences outdoors for youth should be interested in planning for safe and successful youth programs. Risk management is the process of protecting the assets of your organization by minimizing the potential for negative outcomes of activities you conduct. A risk is an act or phenomenon which may cause negative outcomes (such as injury, etc.). Another way of viewing risk management is as the proactive process of managing potential risks in programs to help participants avoid injury (which could occur due to negligence) and help organizations avoid financial loss (which could occur due to liability).

Why and how manage risk?

There are several reasons for going to all the work of managing risk. Developing a way of managing risk can help protect:

- safety, security of youth
- the well-being and success of your program
- the investments made by volunteers, mentors and staff in the program
- the financial security of you and your organization.

Managing risk helps to prevent potential problems (including both safety problems as well as legal actions which could result). Most of all, taking the time to manage risk allows for the most professional of practices for working with youth, and provides the highest quality educational and recreational experience for participants.

The best way to manage risk is to:

- 1) AFFILIATE WITH A YOUTH-SERVING ORGANIZATION AND ITS PROFESSIONALS (see Appendix D)
- 2) DEVELOP A RISK MANAGEMENT PLAN.



**A Sample Outline for a Risk Management Plan
for Outdoor and Environmental Stewardship Education**

Activity/event:

Dates/times:

Purposes, objectives:

Location (exact) (note potential inherent hazards):

Participants (#, sex, age, ability level, special characteristics):

Equipment to be used:

Provided equipment (#, type):

Participants' equipment:

Condition checked:

Procedures for handling:

Activity leaders, training/qualifications, experience level, special requirements:

Chaperones/assistants, training/qualifications, experience level, special requirements:

Activities (details, lesson plan):

Risk Management Policies (attach these):

Preparation of participants (information describing activity, how to prepare,
how to dress, appropriate personal equipment, etc.)

Permissions from parent/guardian

Policies for conduct of activity, including safety equipment to be used
and communications

Supervision of activity leaders and activity

Emergency procedures, numbers to call, transportation vehicle,
procedures for each situation, bad weather policies/procedures

Records of participants (sign-in sheets), who participants arrive and
depart with, and any incidents

Special insurance policies (event, accident, club member, etc.)

Does this all mean that most outdoor activities are “unsafe?” No—Developing a risk management plan simply recognizes that participating in any activity can have some risks (physically and/or emotionally) for the individual, and the plan helps you and your organization prevent any bad and unfortunate surprises or outcomes, and to take control of those potentially bad situations (e.g., bad weather) that you can’t avoid.

Additional References about Risk Management

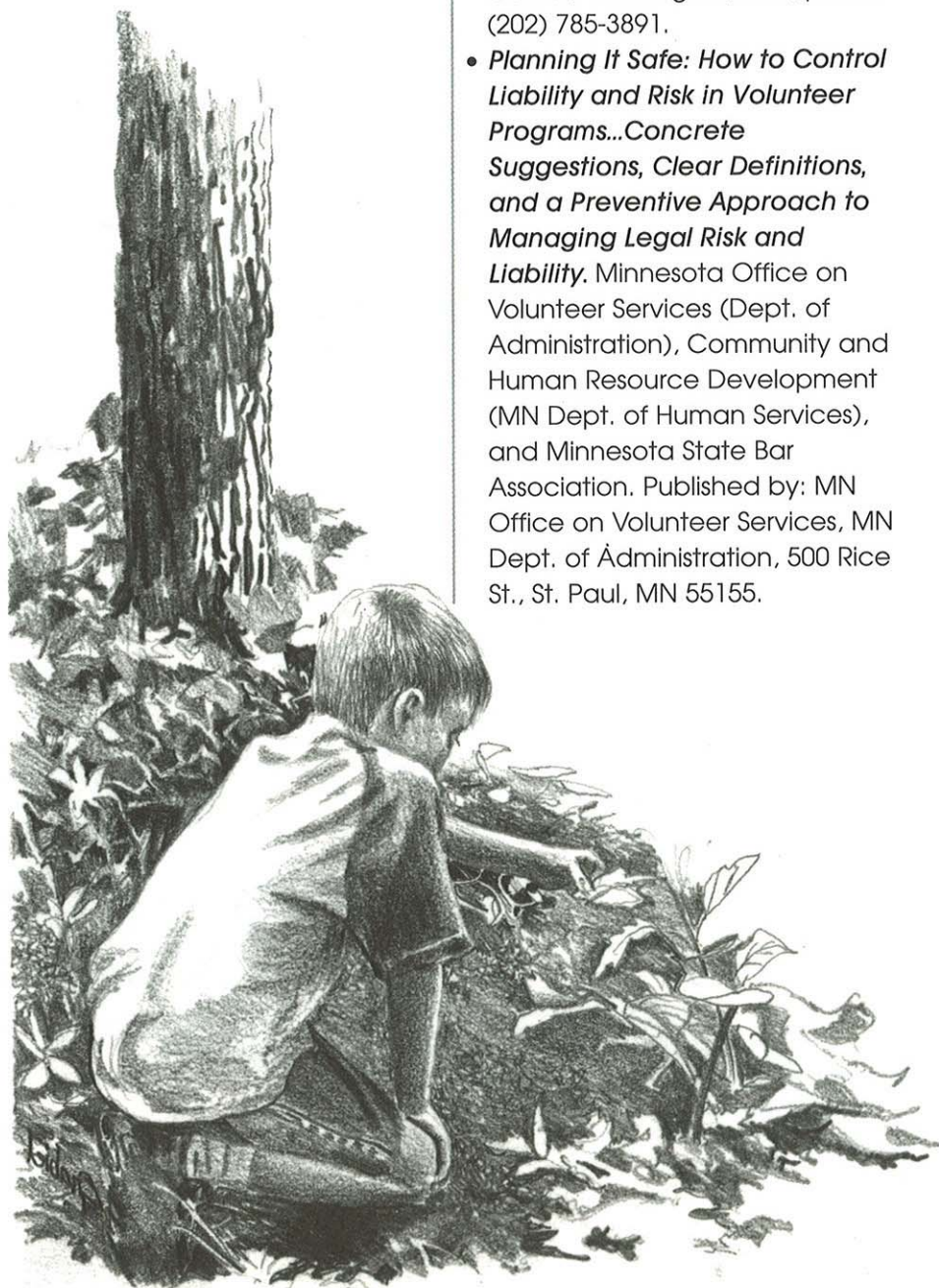
References for Volunteers:

- Your county office of MSU Extension
- ***No Surprises: Controlling Risks in Volunteer Programs.*** By: Charles Tremper and Gwynne Kostin with the assistance of the American Bar Association Task Force on Risk Management and Avoidance for Volunteer Organization and in cooperation with Points of Light Foundation. Published by the Nonprofit Risk Management Center, Washington, DC., phone (202) 785-3891.
- ***Planning It Safe: How to Control Liability and Risk in Volunteer Programs...Concrete Suggestions, Clear Definitions, and a Preventive Approach to Managing Legal Risk and Liability.*** Minnesota Office on Volunteer Services (Dept. of Administration), Community and Human Resource Development (MN Dept. of Human Services), and Minnesota State Bar Association. Published by: MN Office on Volunteer Services, MN Dept. of Administration, 500 Rice St., St. Paul, MN 55155.

Information for this Appendix drawn, in part, from the following references which offer up-to-date and definitive texts for youth recreation professionals (not for volunteers):

Legal Liability and Risk Management for Public and Private Entities. By: Betty van der Smissen. J. D. Anderson Publishing Co., Cincinnati, OH.

Liability and Law in Recreation, Parks, and Sports. By: Ronald A. Kaiser. Prentice-Hall, Englewood Cliffs, NJ.



How to Form a Local “Service and Action” Team

What is a Local Team? This local team, of youth and adults, will work together to build and sustain a long-term learning environment for youth in your community. Not all team members will be able to be at all planning meetings or at all learning events/meetings for youth; some of these team members may be local educators, volunteers, resource management agency staff, and certainly professional youth development staff. This team could take on the development of community service projects with an environmental theme, or could simply comprise an “action” team of resource people and interested teens who are committed to keeping a program going once started! Furthermore, this team helps to orient and train other newcomers to your community or county program once it’s going!

What will the Service and Action Team do?

- Coordinate self-supporting, ongoing environmental science learning and action projects.
- Coordinate local events and programs.
- Plan local training for others working with youth.
- Work with youth to plan local environmental stewardship action projects.
- Recruit other team members.
- Identify local resource people, field trip sites, local offices for support and perhaps make their own local Environmental Education Directory.
- Know how to access basic training in environmental sciences, Project Wild, Project Learning Tree, Project Wet, etc.

Who is part of a Service and Action Team?

- Local youth (12–18 years old), adult youth leaders, resource people, community leaders, science teachers.

What are the roles and functions of team members?

- Team facilitator encourages and motivates youth and adult leaders during meetings and projects.
- Team organizer schedules meetings for educational opportunities and action projects.
- Resource person provides accurate factual information for projects.
- Youth team members acquire new knowledge in environmental sciences and are part of a team actively involved in planning and doing local environmental problem-solving projects.
- Adult team members participate and support meetings and projects.



What are the steps to forming a local Action Team?

- 1) Bring a group of youth and adults together. Answer the following questions to identify additional team members.
 - Who are the 4-H leaders, teens and other adults in your community that have expressed an interest or are currently involved in a project, organization or agency involving environmental science learning and/or action projects? (Check the Michigan United Conservation Clubs Conservation Catalog or other local references!)
 - Do you have a park, school site, woodlot, lake or river site, recreation area, vacant lot in your community that could be used as the focus of your team efforts?
- How can you get youth involved in the team and program planning process? Do you have an active environmental stewardship club in your county? Are there other 4-H clubs that would want to get involved in community service projects? Do you have a high school or middle school science teacher with an interest in encouraging students to participate in a community planning group?
 - What are the established environmental science/stewardship programs, projects, community events in your county? Could you network with those planning groups? Could you ask those adults or youth to participate in the team? Could you assist with their projects, programs or events?
 - Are the same adults and youth involved in the team able and willing to implement the new projects, events, programs identified by the team or are there other clubs, adults, youth, and/or groups that would be more interested in the implementation phase of the team plans?

- 2) Share ideas and collect information. Spend at least some time at several meetings brainstorming possible teaching sites, service projects, programs, and events. Do you have resource people or experts involved in your team?
- 3) Make a plan. Create a calendar of dates. Establish a regular meeting day. Are there other partners to include in the implementation of your plan?
- 4) Implement the plan. Remember to include those youth and adults you have identified who might help!
- 5) Evaluate the activity, project, event, program and make changes and try again! Are there new partners you can ask to join the team?

—Developed by Andrea Grix, with assistance and insights from the Patterns on the Land Initiative pilot counties in Michigan: Saginaw, Oakland, St. Clair, Wexford, Missaukee, Presque Isle, Mecosta, Osceola, Gladwin, Midland.



Appendix G

How to “PLANT” for Success!

Making a plan is the most important part of making expansions in your local or regional 4-H NREE programs. A good plan can make the difference between achieving desired results or failing to move ahead. Equally important are the benefits your program can gain from involving others in the planning process. As an example, at an initial brainstorming session to plan an event such as an Earth Day celebration or family fishing day, not only will you find people willing to identify a variety of local resources to help with the program, but those in attendance at such a planning session will probably volunteer to take great responsibilities for the whole event!

The planning process is really nothing more than asking the right questions and seeking many creative answers prior to the planned event or activity. We use these planning techniques daily, although most of us aren't even conscious of the process we use—it is so automatic.

The planning process can be easily compared to the anatomy and physiology of a flowering plant—thus the idea of “PLANTing for Success!” Summarized below are the questions to be asked during the planning process, and a description of the types of information needed to make the plan—all using the metaphor of a PLANT. Put on your planting gloves...

WHY? What is your vision? Why are you undertaking this planned activity or event? What are your objectives? How do these objectives relate to the 4-H philosophy and to the goals of the 4-H NREE program? It is important to start with this question, because the decisions made here will influence all the other parts of the PLANT. This question lies at the heart of the PLANT. It is at the center of the flower. Here is where the seed is set for future plant generations! If the right pollination does not occur, or if the seed is not ripened correctly here, all that is done on the part of this PLANT is for naught!

WHAT? What is your planned activity or event? Here is where you might begin to think about two concepts: symbiosis and competition. Symbiosis is occurring when two organisms live together in close association. An example of this relationship is a lichen—made up of algae and fungi in combination. With what other local events, activities, or organizations might your PLANT be symbiotic? Competition occurs when more than one species of plant draws from the same resources when supplies



of those resources are limited. What other organizations might already be doing what you have in mind? Will you be competing for the same youth, leaders, or other resources?

The remainder of the planning questions may be asked in any order, depending on the nature of your planned activity.

WHEN?

"For everything, there is a season..." Will your PLANT thrive and grow in the season you have in mind, or should you wait for a little time to plant? How long will it take to let the seed of your ideas germinate properly and grow so that your activity can be successful? (Sometimes programs fail just because there wasn't enough time to get out the publicity and get organized.)

WHERE?

Sometimes we need to "bloom where we are planted," and to be successful we need to take advantage of "fertile ground" and "ripe opportunities." Sometimes the best place to start is with a program or activity that is already in existence. Or are there new organizations or resource people making habitats and niches available to your 4-H NREE group? Put on your best plant dispersal adaptation, and seed new ground!

WHO?

For whom is this project or activity designed? This is a critical question which will impact on your deliberations about the rest of the questions. Who is your intended audience: teens, younger youth, family groups, adult leaders? You certainly don't want a perfectly designed

PLANT growing in the wrong way as a weed and not meeting the needs of your audience. Even a pretty weed is still a weed!

HOW?

How will your PLANT be carried out? What steps are needed to make it happen? What horticultural practices are needed to make it grow? Will your PLANT need fertilizer (money or other resources)? What is needed at different seasons (times during the implementation of your plan)? Who will be the primary gardeners at different stages of growth?

THE STEM:

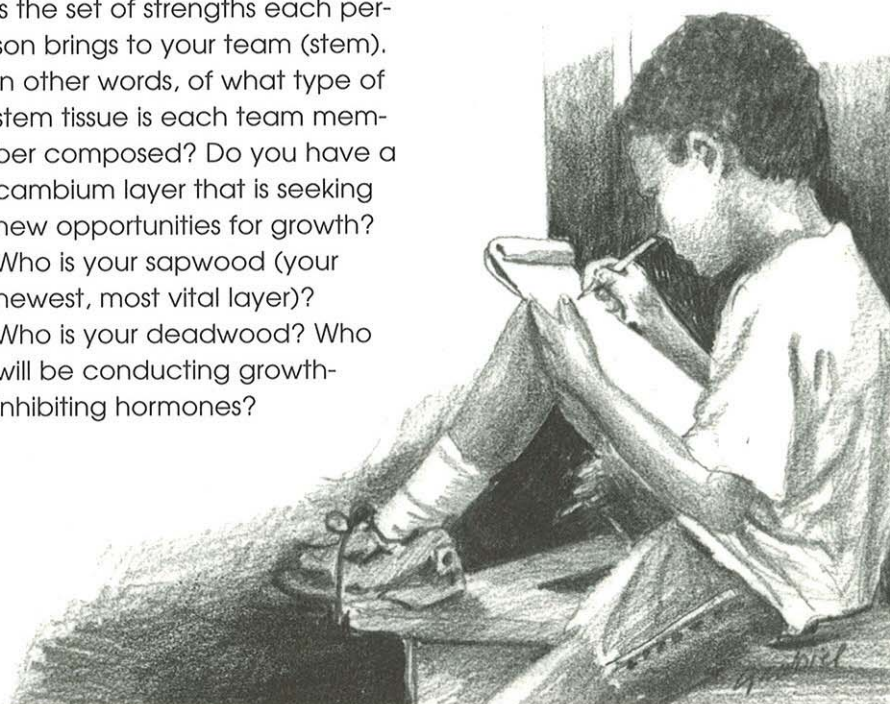
The stem for your PLANT is made up of the team members you call together to carry out the plan. They are the vascular tissues of your PLANT which provide for nutrient and water flow into the developing flower and leaves. They are the conduits for hormonal movements in the plan (i.e. communications channels)! They provide the physical support for carrying out the PLANT. One thing to think about is the set of strengths each person brings to your team (stem). In other words, of what type of stem tissue is each team member composed? Do you have a cambium layer that is seeking new opportunities for growth? Who is your sapwood (your newest, most vital layer)? Who is your deadwood? Who will be conducting growth-inhibiting hormones?

Other PLANT considerations:

How will you clone your PLANT? Who and how will the plan be carried on if team members change? Do you have a plan to "clone" new stem tissue (leaders) to provide for influx of new ideas and lifeblood into the program? How will you share your successes with others? Are there any limiting factors in sight? What resources that are needed are in shortest supply in your habitat for your PLANT? What factors will make it difficult to reach your goal of setting seed? Knowing these in advance can help you avoid stunted growth later!

Getting Youth Involved in Planning

"Plan It: Your Personal Guide to Making a Plan and Carrying It Out"
(4-H 1501)



Examples of Local Service and Action Teams' Efforts for Youth in the Outdoors

Having a Purpose and Building for Success: Local Stories and Case Studies

County A

About the County: Rural, suburban mainly

Program Formats: This county has not yet developed a "Service and Action Team." In the county are two main youth clubs involved in outdoor environmental stewardship learning activities. As the parents and leaders of these clubs get more involved, county 4-H staff and local natural resources/conservation clubs and organizations hope to form an Action Team.

Club #1 is a Project Club.

Activities: Mainly outdoor and environmental stewardship projects, community service with an environmental theme

Based at: Local park facility, with nature center

Members: Are from communities surrounding the park; some youth are 4-H members in other clubs, while some youth only belong to this 4-H club.

Examples: Monthly meetings, general environmental stewardship activities, fair projects in conservation and environmental stewardship, annual family camp-outs, Earth Day park clean-ups

Supporters and Partners: Local businesses, club families, and park staff provide equipment, donations of food items, and volunteer time; major co-sponsors are Michigan Department of Natural Resources and the "Friends of the Park" citizen group.

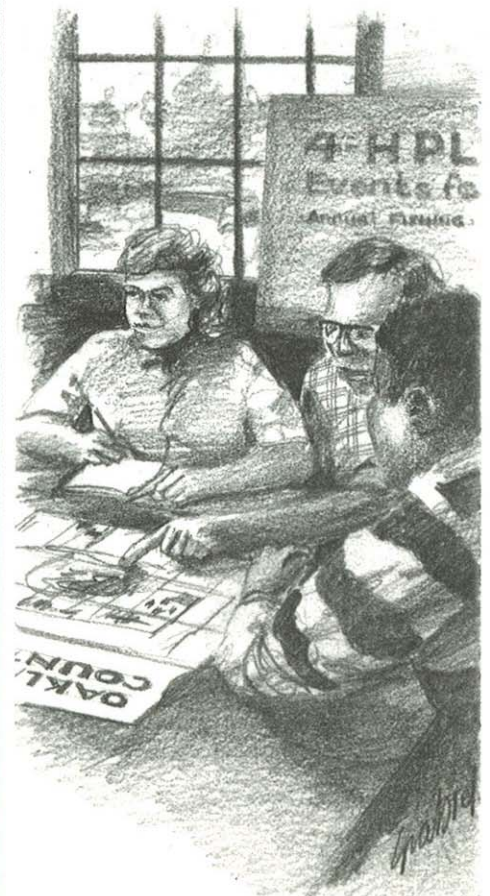
Club #2 is a Community Club

Activities: Broad array of 4-H and youth development activities, some environmental stewardship and outdoor activities, general community service

Based at: Neighborhood school (after school, weekends and evenings)

Members: Are mostly from that neighborhood and community

Examples: Monthly business meetings for the 100+ members, intermittent and seasonal specific "project meetings" for the 6 to 12 youth interested in a given outdoor topic, variety of outdoor and environmental stewardship projects along with other projects



Supporters and Partners: Few major sponsors, but local donors sought for project materials when needed.

County B

About the County: Urban, suburban with some rural

Program Formats: This county has formed a complete "Service and Action Team," in order to plan and coordinate many different outdoor and environmental stewardship events, school based activities and club activities for youth.

Service and Action Team Members: 4-H agent and program assistant, two 4-H "key leaders" (middle management leaders), 4-H teen leaders, home-school teachers/ parents, local watershed council members, local township parks staff who manage a newly designated public area near the county fairgrounds

Initial Approach: 4-H leaders attended the state 4-H Natural Resources/Environmental Education leader training workshop. They and teen leaders who had attended 4-H Great Lakes and Natural Resources Leadership Camp prepared a vision for their county of things they hoped to accomplish toward environmental stewardship. This group invited Action Team members to early planning meetings.

Vision: Together, the Action Team decided to build community awareness and use of a park area for environmental learning, and to bring teen leaders into schools to share teaching and learning activities which focus on sound environmental stewardship practices which protect local watersheds, rivers, streams, and wetlands.

Activities: Teens and other members of the Service and Action Team helped the park planners brainstorm the many possibilities for site development to enhance the area for teaching youth about the outdoors and about environmental stewardship. Local environmental consultants joined the Service and Action Team, helped members learn about watersheds and build a watershed model to use in teaching younger, school-aged youth. Spin-off programs designed by this Action Team also included: an annual fishing derby, a day camp, bluebird nest box workshops for the community, and many other activities over the four years this team grew its programs.

Impacts: The voices of youth were heard by park planners and other local officials in deciding how to use a new area for positive outdoor recreation and learning. Thousands of school youth received demonstrations and hands-on lessons, from teen leaders, about their local watershed and how to enjoy and protect it. Parents, leaders and other volunteer community resource people grew more involved in their communities. Long-term partnerships with natural resources organizations and agencies helped the county 4-H staff sustain positive programs for youth in the outdoors!

OVERALL TIPS FOR SUCCESS:

- Volunteers are very busy, and it's hard for agents and volunteers to connect, but using a team approach helps those who would ordinarily be working by themselves!
- Successful county programs build awareness and stewardship of local natural areas and increase the visibility of the 4-H youth development program!
- Participation of leaders, teen leaders and resource people (other volunteers) in training opportunities helps build success and ownership of their own programs, tailored to local interests and environmental stewardship needs!
- Have fun! Make sure the youth have fun! Don't go it alone... work with others! You'll make a bigger impact and grow stronger youth development programs, as well!

Source: These profiles were compiled from research conducted by:

Lincoln, Rebecca. 1999. *4-H Patterns on the Land Initiative: A Case Study of Environmental Education Volunteers in Michigan*. Unpub. M. S. Thesis, Dept. of Agriculture and Natural Resources Education and Communication Systems, Michigan State University, E. Lansing, MI.

Michigan 4-H Mission Statement

Michigan 4-H Youth Development Programs are youth development programs that involve volunteers in providing positive, experiential, educational opportunities for and with youth. Our mission is to create environments, through collaboration, that build strong, healthy youth who are proactive in a complex and changing world.

Michigan 4-H Youth Development is a program of the Children, Youth and Family Programs of Michigan State University Extension, which has offices at MSU and in Michigan counties. The State 4-H Youth Development Programs office is housed at Michigan State University.

4-H Natural Resources and Environmental Education Programs are offered by MSU's Department of Fisheries and Wildlife, in conjunction with 4-H Youth Development and many important partners such as the MSU Department of Agriculture and Natural Resources Education and Communication Systems, Michigan Department of Natural Resources, Michigan Department of Environmental Quality, and the Michigan United Conservation Clubs.

What Is the "Patterns on the Land" Initiative?

"Patterns on the Land" is a multi-year 4-H initiative funded by a grant from the W. K. Kellogg Foundation to the Michigan 4-H Foundation. The goal of this initiative is to develop stronger, local youth environmental science and stewardship education programs. A key feature of this initiative is to empower local "Service and Action Teams" of teens and adults to work with youth to conduct ongoing, environmental science learning activities and community service stewardship projects. Specific objectives are to:

- help youth leaders and teachers find a better "pathway" through environmental science projects and help youth plan their own stewardship projects.
- train local teams on how to coordinate self-supporting, ongoing environmental science learning and action projects.
- guide youth and youth leaders beyond environmental awareness to fun, direct experience studying local environments, learning environmental science, and planning community service projects to maintain or improve their environments.
- connect local teams to other community members, professionals, and organizations committed to environmental science and stewardship.

What Else Has Happened as Part of This Initiative?

Other major supporters—the Dow Chemical Company, Gerber Foundation, and ANR Pipeline Company—have made grant commitments to the Michigan 4-H Foundation. Called "Youth Environmental Science and Stewardship," the goal of this commitment is to enhance the environmental science literacy of youth and adults who work with youth in schools, clubs, and other settings. The objectives of this effort are to:

- update environmental science information and projects to help leaders and teachers provide better direct, hands-on experiences in learning about such topics as water, animals, etc.
- provide leaders a better "road map" linking between these materials with other supplemental curricula such as Project WILD, Project WET, Project Learning Tree, etc.
- pilot test these new approaches with teams of youth leaders, teachers and teens.

Many other connections are being explored as part of the Patterns on the Land Initiative. Local and regional funding support has helped counties develop their own service projects for environmental stewardship to meet local needs.

This guide was prepared by:

Shari L. Dann, Associate Professor and Extension Specialist,
Department of Fisheries and Wildlife, Michigan State University

Members of the Michigan 4-H Natural Resources and Environmental Education
Program Committee:

Bud Schulz, Committee Chair, Clinton County 4-H Volunteer
Doug Lantagne, Associate Professor and Extension Specialist,
Department of Forestry, Michigan State University
Glenn Dudderar, Associate Professor and Extension Specialist (retired),
Department of Fisheries & Wildlife, Michigan State University
Andrea Grix, Staff Member, Kettunen Center, Michigan 4-H Foundation
Rebecca Lincoln, Extension Graduate Assistant, Fisheries & Wildlife
Mary Jamieson Riley, Education Program Coordinator, Michigan 4-H Youth
Development Programs
Rosemary Thiebaut, 4-H Volunteer (former Chair, 4-H NREE Committee)

Technical and editorial reviewers include:

Cheryl Howell, Michigan 4-H Youth Development Programs and MSU
Department of Agriculture and Natural Resources Education and
Communication Systems
Ray Rustern, Michigan Natural Heritage Program, Wildlife Bureau, Michigan
Department of Natural Resources
Mark Stephens, Michigan State University Department of Fisheries & Wildlife
Gary Williams, MSU Extension, Wayne County
Kevin Frailey, Michigan United Conservation Clubs, President
Michigan Alliance for Environmental and Outdoor Education
Ken Vrana, MSU Department of Parks, Recreation and Tourism Resources
James T. Artabasy, MSU Extension and MSU College of Agriculture
and Natural Resources
Dean Kiesling, Michigan 4-H Youth Development Programs
Don Jost, Executive Director, Michigan 4-H Foundation

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