Appendix

- NWF's Mission and Education Programs
- Creating Schoolyard Habitats Workshop Overview
- NWF Contact Information
- Site Design Guidelines for New Schools
- Pacing and Baseline Mapping and Mapping Scale
- Tips for Teaching Outdoors
- Glossary of Terms
- Careers in Conservation
- Resources
- Feedback Form

APPENDIX A

National Wildlife Federation Education and Training Programs

For more than three generations, the National Wildlife Federation has fought to keep our country's wildlife legacy alive by uniting Americans in the shared value to protect wildlife for our children's future. Our award-winning publications have earned a reputation for excellence, and our education programs are recognized for the way they utilize community service elements to teach children and families about the natural world.

K-12 Programming

"Be Out There": Experiential Learning that Connects Kids and Community

Research shows schools that use outdoor, experiential classrooms produce students who score higher on standardized tests and have higher grade point averages. Under-resourced and struggling students, in particular, find renewed support and confidence, often moving farther up the achievement ladder than their better-resourced peers.

In the past 17 years, NWF has worked with 3,000 schools across the country to create outdoor nature classrooms called Schoolyard Habitats. These outdoor classrooms serve as a platform for multi-disciplinary learning where K-12 students not only hone their science and math capabilities, they nurture their innate curiosity and creativity by creating, utilizing, and maintaining a learning garden that attracts and supports local wildlife.

Through our award-winning curriculum, *Access Nature*, these outdoor classrooms raise enthusiasm for learning, attract parent-volunteers, and serve as a source of pride for students, faculty, and the community. Schoolyard Habitats also help to connect students from diverse backgrounds with nature, making the program a natural path for creating a conservation movement that represents the full spectrum of American society

Eco-Schools: Greening U.S. Schools, Inside and Out

As America faces profound environmental challenges – many say the greatest ever – U.S. K-12 schools will called upon to prepare students for increased emphasis on environmental stewardship, and to participate in a new energy and environmentally sustainable economy. To meet this challenge, NWF sought and was granted U.S. host organization status for the International Eco-Schools program and is the process of implement this exciting green schools program in the United States.

Eco-Schools combine effective "green" management of their facilities and grounds with high-quality environmental education and volunteerism. Schools certified in the program go through an organized process of building a team of students, faculty, administrators and parents, as well as an action plan to measurably improve their environmental performance and educational effectiveness as a demonstration for future living. Eco-Schools work on greener buildings and physical plants; vegetative greening of school grounds; advancing environmental education and environment-based community service; and encouraging more outdoor (Green Hour) time for students and families

Climate Classroom

Design for student, educators and parents to address the topic of global climate change through knowledge and action, this web portal provides a variety of opportunities to learn, share and discover. Additionally, NWF's high school curriculum to the Climate Classroom education initiative is based on the Environmental Education Guidelines for Excellence of the North American Association for Environmental Education (NAAEE), the Climate Classroom ensures:

- students understand the science of global climate change
- steps can be taken in daily lives to reduce climate change

APPENDIX A

The curriculum encourages students to analyze the science of global warming and its relevance to current events and their daily lives.

Youth Outreach
This club-based environmental education and leadership program helps students develop a sensitivity to the local environment through workshops, field trips and residential summer institutes. The program also provides the opportunity for students to witness how a personal commitment to the environment can have a direct effect on the local community. It is designed to engage students in the real life applications of science, math, technology and civics through conservation action projects and the exploration of careers in the environmental sciences.

Campus Ecology
NWF's Campus Ecology program engages students, faculty and staff at the nation's 4,100 colleges and universities in positive, practical conservation initiatives that showcase local solutions to global environmental challenges. The program offers training clinics, educational publications, technical assistance and recognition, as well as fellowships and internships.

Events

National Wildlife Week – Third Week in March
Observing National Wildlife Week is a time to honor wildlife and ignite the minds of children and adults. Research shows that families connected to nature raise healthier kids and inspire a life-long appreciation of the environment. Be Out ThereTM!

Chill Out!
Chill Out: Campus Solutions to Global Warming is an effort by the National Wildlife Federation's Campus Ecology program to foster innovation and creativity in designing solutions to global warming on campuses across the country.

Great American Backyard Campout
Held each June, the Great American Backyard Campout® is a national event that encourages individuals, youth, friends and families to camp out together for one night.

Make Tracks
The national event is part of National Wildlife Federation's Green Hour® campaign, which encourages parents and caregivers to give their kids time outside every day. Stay tuned for next year's Make Tracks!™ on Columbus Day Weekend (Oct. 10-12, 2009)

NWF Contact Information School Based Programs

Headquarters

11100 Wildlife Center Drive
Reston, Virginia 20190
www.nwf.org/ecoschools
1-800-822-9919
Fax: (703) 438-6468

Field Offices

(Contact: Regional Education Manager)

Alaska Regional Center

National Wildlife Federation
750 W. Second Avenue, Suite 200
Anchorage, AK 99501
mcg...@nwf.org
907-339-3900 Phone
907-339-3980 Fax

Chesapeake Mid-Atlantic Regional Center

(NJ, PA, MD, DC, VA, NC, WVA, DE)
National Wildlife Federation
706 Giddings Avenue, Suite 2B
Annapolis, MD 21401
443-759-3400

Great Lakes Regional Center

(MI, WI, OH, IN, IL, MN, KY)
National Wildlife Federation
213 W. Liberty, Suite 200
Ann Arbor, MI 48104-1398
greatlakes@nwf.org
734-769-3351 Voice
734-769-1449 Fax

South Central Regional Center

(AR, IA, KS, LA, MO, OK, TX)
National Wildlife Federation
44 East Avenue, Suite 200
Austin, Texas 78701
512-476-9805 Voice
512-476-9810 Fax

Northeast Regional Center

(NY, CT, RI, MA, VT, NH, ME)
National Wildlife Federation
149 State Street, Suite 1
Montpelier, VT 05602
802-229-0650 Voice
802-229-4532 Fax

Northern Rockies Regional Center

(MT, ND, SD, ID)
National Wildlife Federation
240 N. Higgins, Suite 2
Missoula, MT 59802
scaggs@nwf.org
406-721-6705 Voice
406-721-6714 Fax

Rocky Mountain Regional Center

(CO, UT, NE, NM, AZ, UT, NV, WY)
National Wildlife Federation
2260 Baseline Road, Suite 100
Boulder, CO 80302
rmnrc@nwf.org
303-786-8001 Phone
303-786-8911 Fax

Southeast Regional Center

(FL, GA, AL, MS, SC, TN)
National Wildlife Federation
730 Peachtree St. NE
Suite 1000
Atlanta, Georgia 30308
404-876-8733 Phone
404-892-1744 Fax

Western Regional Center

(WA, OR, CA, HI)
National Wildlife Federation
6 Nickerson Street, Suite 200
Seattle, WA 98109
Phone: 206-285-8707
Fax: 206-285-8698

APPENDIX C

Site Design Guidelines for New Schools

According to most projections, thousands of new schools will be built in the U.S. in the next 10-20 years to meet the needs of a growing student population, crumbling school facilities, and reductions in class sizes in various parts of the country.

The development of new schools can be a challenging yet exciting opportunity. Many people working and learning in older schools would love to have the opportunity to learn from the mistakes of the past and create the ideal new school.

The National Wildlife Federation urges those involved in new school design and implementation to plan with both the health of the local environment, and the educational possibilities for students at the forefront. Through simple choices early on, development's impact on local plants and animals can be minimized and the site can be maximized for its educational potential.

General Guidelines for the Development of New School Sites

To create an environmentally friendly schoolyard, the architecture firm hired by a given school or district needs to have interest and experience in this type of work. Generally, the architecture firm contracts the civil engineers, mechanical engineers, electrical engineers, and landscape architects that will work on the school site. Generally, if the architecture firm does not have as a goal the creation of a low-impact, educational schoolyard, neither will the subcontractors whom they hire. Many schools which are not able to switch the architecture firm charged with the design of their school choose to hire an environmental consultant to advise the various parties along the way.

The best way for a school district to ensure that new sites are developed in a manner which has a low or positive impact on the environment, and which best serves the educational needs of the school community, is for the district to adopt clear policies regarding new school construction. The State of Maryland has had enormous success with this approach: once clear policies were developed, all of the various parties involved in the construction of every new school had a common set of goals and standards towards which to work. In Maryland, state officials recognize that thoughtful development of the schoolyard will not only benefit local wildlife and the environment, but will also benefit the educational potential of the schoolyard. This cross-cutting understanding of the value of thoughtful school development in Maryland is evident in the fact that their landmark publication, *Conserving and Enhancing the Natural Environment: A Guide for Planning, Design, Construction and Maintenance on New and Existing School Sites*[1], was a joint project of the Maryland Division of Business Services, School Facilities Branch, Division of Instruction and Staff Development, and the Arts and Sciences Branch.

Though creating wildlife habitat on schoolyards is thought by some as purely a landscape design issue, it is not. Granted, many older schools have completed fantastic habitat projects through creative landscaping decisions, doing the best that they can with the turf and asphalt yards the original designers created. However, when a district is on the brink of a brand new school project, the

[1]This resource manual can be ordered by calling 410-767-0096 or sending a $20.00 check made out to "Maryland Department of Education" and sent to: School Facilities Branch, Attn: Allan Albend, Maryland State Department of Education, 200 West Baltimore St., Baltimore, MD 21201

opportunities to make a positive impact are much larger. To maximize this great potential, decisions—from those made by civil engineers regarding storm water management and grading, to those made by the architect regarding the siting of the parking lot—need to be made with common goals and standards in mind.

The National Wildlife Federation's Schoolyard Habitats Program suggests the following overarching standards for the development of new school sites:

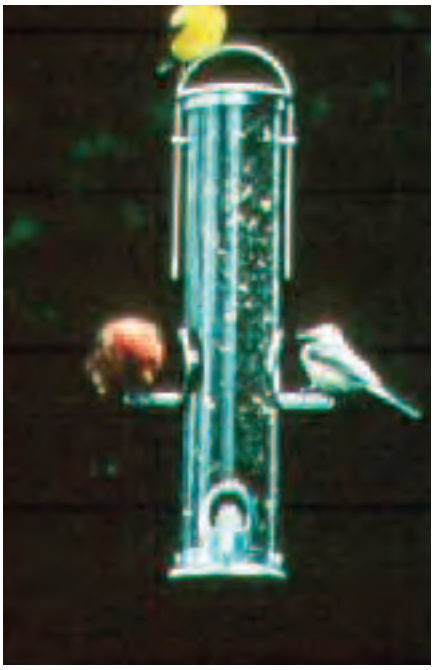
- **Use only native plants in all new landscape installations**

("Native" plants are those plants that were growing in any given area prior to European arrival in the U.S.). Native plants are those best adapted to a given region's climate, and therefore will require the least amount of watering and maintenance. At the same time, native plants best support local wildlife. Planting with natives helps maintain and restore local diversity of plant species, while providing crucial food and cover for local pollinators and other wildlife.

Though many landscapers tend to choose exotic species, there are often native species offering similar landscape and aesthetic appeal, which also positively impact the local environment. Planting with natives will also make it possible for students to learn about the plants and animals in their state, right on their own schoolyard.

- **If using non-native species, be SURE to avoid invasive exotics**

Invasive exotics are non-native plants which reproduce very quickly, 'invading' adjacent land and depleting local plant diversity. A few of the many exotic invasives that have been popular with landscapers and gardeners but that should no longer be planted include purple loosestrife, multiflora and Cherokee roses,



Norway Maple, Bradford pear, Asiatic bush honeysuckle, Japanese honeysuckle, and autumn and Russian olives.

- **Maintain existing vegetation when possible**

Though most development requires that some vegetation be removed, many schools have had great success with transplanting plants from one area of the schoolyard (where new construction will take place) to another—i.e., a corner of grassy lawn.

NWF also encourages you to leave native vegetation undisturbed where possible. During the initial site assessment, a consultant may be able to identify an edge or corner of the site which has particularly high wildlife value or is environmentally sensitive. Whenever possible, maintain corridors of uninterrupted vegetation for wildlife.

- **Avoid turf grass**

Many older schools are ripping up wide expanses of turf grass on their schoolyards. Why? Because they realize that this monoculture of one species of an exotic grass offers very little to local wildlife; nor does turf grass make for a particularly stimulating environment for students. When developing a new site, there is a great opportunity to avoid the mistakes of the past. If a grassy area is specifically requested, consider a variety of native grasses! Avoid use of pesticides and herbicides; ample research has shown the harmful impacts of these toxics on humans, wildlife, and groundwater. A reduction in maintenance costs and effort is possible with a more environmentally sensitive and sustainable approach. Ensuring that positive changes in procedure are long-lasting and widespread may require the development of a new school-wide or district-wide Management Plan for designing and maintaining school grounds.

- **Minimize impermeable surfaces.**

Impermeable surfaces, such as concrete and asphalt, prevent rainwater from seeping into the soil and slowly making its way into the groundwater. Reducing impermeable surfaces can reduce runoff and erosion. Many schools that choose to eliminate their roof's wide expanse of impermeable surface through rooftop gardening find that this also increases the school's energy efficiency. (The City of Chicago's City Hall has made the same decision, with similar results). Impermeable surfaces can also be reduced by opting for permeable pathways (such as gravel, sand, or mulch) instead of asphalt.

- **Design the site with student learning in mind**

In developing a new hub of learning for generations to come, it makes sense to consider the educational needs of students in the design of both the school and schoolyard. Instead of building planters and filling them with exotic perennials, consider building beds and leaving them unplanted, for students to design and

develop as part of their classwork. In other areas, environmentally friendly designs and plantings will be living examples of how the students too can make smart choices to make a difference in their world.

- **Diversify plants**

To provide the greatest benefit to the greatest number of wildlife, include both a wide variety of plant species, as well as a variety of plant heights, from groundcovers to trees. Avoid monocultures—large expanses with only one species. In addition to providing minimal value to wildlife, these may prove costly in the future—if a pest or disease strikes one individual, the whole stand will be at risk.

- **Choose plants that require minimal watering and fertilizers**

Choosing locally native plants will greatly cut down on the need for watering, fertilizers and pesticides. For instance, in arrid regions, locally native, drought resistant plants will flourish while ornamental plants from moist regions will require intensive attention in order to survive.

Selecting plants appropriate for their location on the site will cut down on maintenance as well (i.e., plants requiring full sun should not be planted in shady corners).

Consider Stormwater Management

Thoughtful stormwater management can also decrease runoff and erosion, while helping the landscape take advantage of available rainwater. Communities in many aging schools have become aware of the ecological value of wetlands, and have spent large resources of time and money to restore the wetlands on or near their school property. Wetlands act as natural sponges, assisting with stormwater management and also filtering pollutants before rainwater reaches groundwater supplies. They also support an incredible diversity of plants and animals. Unfortunately many species which rely on wetlands have become threatened or endangered as a result of the loss of wetland habitat— 85% of the United States' original wetlands have been filled or converted to development or agriculture.

Remember, beginning with the new site presents an amazing opportunity to avoid the mistakes of the past.

For technical information on innovative storm water issues, visit the following websites:

- www.stormwatercenter.net (The Center for Watershed Protection)
- www.mde.state.md.us/environment/wma/stormwatermanual (Examples from the state of MD)
- www.epa.gov/owm (The U.S. Environmental Protection Agency site with information on storm water management best-practices)

On a local level, agencies which can provide assistance with site assessments include the U.S. Fish and Wildlife Service and local Soil and Water Conservation Districts. Also, consider looking for Environmental Planning and Design firms with experience with wetland restoration, student-friendly schoolyard designs, habitat enhancement, etc.; they may be able to help at least with an initial consultation. State native plant and wildflower societies can also prove invaluable.

We began in planning stages when the school was being built: an area was set aside for a nature trail, and landscaping was done with native plants. The ecology club and all classrooms now utilize the school grounds.

Manassas Christian School
Manassas, VA
Schoolyard Habitats site #1433

APPENDIX D

Pacing, Baseline Mapping and Mapping to Scale

Many educators approach mapping the schoolyard and taking site inventories in different ways. For some, mapping may be an entire unit which culminates in making a scale model of the schoolyard. Others choose to do rough estimate of schoolyard dimensions, spending more time on assessing the characteristics of the site. The following information will help as you decide on your own approach to schoolyard assessment.

Pacing

Pacing is one method students can use to determine the dimensions of your Schoolyard Habitats site and to make measurements when creating baseline maps. This method provides opportunities for students to practice practical math skills such as calculating averages and measurement conversions. If more accurate measurements are desired, use 50-100 ft measuring tapes instead of pacing when mapping the site.

1. Establish a starting point.
2. Measure a 100 ft straight line out from that point.
3. Begin with your left foot and count the number of paces it takes you to walk 100 ft. Count every time your right foot hits the ground.
4. Pace this distance several times; determine the average number of paces you take to walk this distance.
5. Divide 100 by the average number of paces you take to walk 100 ft. This is the length of your pace. You can use this distance to determine an approximate measurement of the site you are inventorying by pacing the distance for each side of the inventory area.

Baseline Mapping

A baseline is a fixed line from which all measurements are made.

1. To create a baseline inventory map for a Schoolyard Habitats project, students should first make a hand sketch map of the site they will be inventorying on an 8 1/2" x 11" sheet of paper.
2. Determine the dimensions of the site; mark each side of the sketched area accordingly.
3. Conduct an inventory of the site and sketch or write the name of key inventory elements in their approximate location on the map.
4. Use one edge of the inventory site as the baseline.
5. Place a measuring tape along this edge (or if pacing, use string to establish a visible, straight line).
6. Measure the distance from the baseline to each of the key inventory elements that have been sketched on the map. To do this correctly, measurements should always be made at right angles to the baseline.
7. Use a second string (or measuring tape) to create a perpendicular "line" from the baseline to the element. Measure this distance and write it on the map next to the item.
8. Repeat for all elements on the map. Make sure to demonstrate this process before having students try it.

Mapping to Scale

Determine a scale for your map that will fit onto the graph paper being used. The scale should be large enough that the habitat site takes up most of the page.

1. Transfer the rough sketch of the area from the sketch map onto the graph paper, indicating correct dimensions and shape. Be sure to include a compass rose.
2. Using tracing paper, create overlays of the inventory elements. Use a separate sheet of tracing paper or overhead transparency for each type of inventory element and a different colored marker (marker ink shows through the layers better than crayon). To do this, place a single overlay sheet on top of the graphed base map. Plot the locations of one element (i.e., traffic flow) according to the established scale. Remove the overlay and repeat for each type of inventory element.

APPENDIX E

Tips For Teaching Outdoors

The schoolyard can be a valuable extension of the indoor classroom, but some educators may initially feel uneasy about the absence of the four walls and chalkboard when they bring their classes outside.

Keep the following suggestions in mind to ensure successful, worthwhile lessons and experiences with students in the Schoolyard Habitats site:

Set clear expectations for student behavior before going outdoors

Set rules for positive outdoor behavior prior to your first outdoor venture with students. Students need to understand that "outside" is a classroom too. Involve the students in the rule–setting, just as you may already do when setting indoor rules.

Plan

The schoolyard can be a place for quiet contemplation, active play, intense observation, questioning, independent work, group projects, hard work, and relaxation. Before taking students outside, it is important to decide which type of experience(s) you want to provide on a given day. Be sure to communicate this to students indoors: discuss where on the schoolyard the class will be working, how long they will be outside, what they will be expected to do, etc. before walking outside. Providing the background or first steps of an activity while in the classroom might also help those students unaccustomed to schoolyard classes focus. The time indoors needed to prepare students for a successful schoolyard field trip will decrease quickly over time; providing this structure, with a short "pre-lesson" beforehand will be especially important before the first few outdoor lessons.

Keep the first experiences simple

Keep plans simple the first few times you teach outdoors. Don't worry if you do not finish all that you have planned. Both you and your students need time to adjust to this new classroom environment.

Recruit teachers, parents and/or volunteers to help

While not always possible or necessary, having an extra adult or two with you when teaching outdoors can be very helpful. Consider working with another teacher and taking both classes out together.

Visit your lesson site

Become comfortable with the site you will be teaching in prior to taking your students outside. Where can the whole group gather? Where can small groups work together? Are there areas that illustrate concepts you plan to teach? What are the benefits and challenges of the site? Many changes occur as the seasons change, so remember to visit close to the time you will be using the site.

Decide on a way of getting students' attention outdoors

Have a clear signal for getting everyone's attention and gathering together. Practice it! Keep the sun in your eyes (out of students' eyes), the wind at your back (so your voice carries to your students), and stand in the center of a circle or line of students when sharing (so all can see).

Be a positive role model

Show enthusiasm, excitement and a positive attitude in all that you do. Make sure your students can hear this in your tone of voice and can see it in your body language. Create a sense of adventure or mystery. Enjoy what your students find; look at what they are showing you and share these discoveries with the whole group.

Allow students the opportunity to explore their surroundings

To be safe, comfortable and excited about learning in the outdoors, students need time to explore the areas in which they will be learning. Many of today's children do not have the opportunity to explore outdoor areas and need the opportunity to adjust. Emphasize observation. By using all of their senses, students can learn more about the things they investigate.

Learn to use "teachable moments"

Nature's lessons will often be more compelling than the task at hand. Be flexible and remember that in the natural world everything is connected

to everything else. Let the students experience nature in the moment and then link that moment back to your lesson.

Design lessons that flow

Design your lesson so that activities transition your students from idea to idea and indoor to outdoor behavioral expectations. Identify an introductory activity to excite your students and acclimate them to the outdoors. Develop a list of fun strategies for moving your students from place to place, and use a closing activity to review what students have learned and to prepare them for returning indoors.

Become a "guide", "explorer" and "learner."

You do not/should not/could not know everything about nature! Don't let a lack of knowledge slow you down. Create an atmosphere of investigation and share your excitement about learning new things. If you are excited about learning then your students will be excited as well! Telling a student "I don't know, but let's look it up!" is a great way to encourage students to guide their own learning.

Ask guiding questions

Avoid giving direct answers to student questions. Help students discover the answers on their own. If a student wants to know the name of something, ask him or her questions such as "How large is it?" "Where does it live?" or "How do you think it avoids predators?"

Engage all students during all activities

Students that are actively engaged in a lesson are less likely to have behavior issues. Give each child a role or task for each activity. For example, if your students are observing pollinators, have them work in small groups and

have one student in each group take on the following roles: observer, writer, artist, and identifier (uses field guides).

Use backpacks to manage supplies

Students can carry their own set of supplies in their backpacks. Backpacks allow students to keep their hands free for safer walking and participation in activities, and eliminate the chore of keeping track of loose items. Backpacks also allow students to take water bottles, layers of clothing, raincoats, and anything else they might need to make their outdoor experience a pleasant one. Encourage students to take water bottles with them if they are going to be outside for more than 20-30 minutes at a time. Light snacks are also a good idea if your students are going to be outside for a long time, hiking or engaging in physical activities such as running games, building bird boxes or gardening. On a hot day, a short rest in the shade can dramatically improve students' attitudes and reduce behavior problems!

Consider creating an educator backpack to take with you for outdoor lessons. Include props or games that can be used in activities and to keep students focused. Also include a first aid kit, extra pencils, paper, gloves, hand lenses, rulers, a tape measure, field guides, viewing boxes, plastic bags, and anything else you think your students might use when outside.

Safety Considerations

- Be aware of any allergies, medications, and special precautions necessary for the safe involvement of all students.
- If participants explore an area by turning over rocks or logs, make sure they do so carefully. In areas where poisonous snakes may live, students and leaders should always turn rocks and logs over toward themselves, grasping the edge of the rock or log furthest from them. That way any alarmed creatures can escape in the opposite direction. Return rocks or logs to their previous positions when you are finished looking.
- Usually, when bees and wasps find out that the sweet-smelling person they landed on is not a flower, they will move on. When people swat at them, on the other hand, they may attack. When bees or wasps approach, encourage calmness and little movement.
- Encourage long pants in areas where deer ticks are abundant.
- If poison ivy, poison sumac, or poison oak grow in your area, teach students to recognize, identify and avoid contact with these plants.

APPENDIX F

Glossary of Terms

Biodiversity/biological diversity: The full range of variety and variability that has evolved within and among living organisms and the ecological complexes in which the organisms occur, including ecosystem or community diversity, species diversity, genetic diversity, and the diversity of the ecological processes.

Biome: The largest land community units, having similar life forms of the climax vegetation.

Broad scale: An analysis containing a relatively large amount of space.

Coarse filter: Setting planning goals based on providing an appropriate mix of communities across a landscape.

Community: A group of one or more populations of plants and/or animal in a common spatial arrangement; the biotic components of an ecosystem.

Ecosystem: The biotic and abiotic factors occurring together in a particular area and their interaction in a natural system.

Ecosystem management: A management effort to conserve biological diversity while meeting society's values, demands, and commercial needs. This ecosystem management has three different objectives: social, economic, and ecological.

Elements of landscapes: structure, function, and change

Fine filter: Setting planning goals based on the requirements of individual species or guilds.

Habitat: "A constellation of interacting physical and biological factors which provide at least minimal conditions for one organism to live or for a group to appear together" (Daubenmire 1968). As such, habitat is a characteristic of a species, and is a general description of that species' food, cover, water, spatial, and special requirements.

Habitat analysis: The measurement and description of the habitat for a species in a given area.

Habitat assessment: The process of determining the types and amounts or qualities of wildlife habitat in a defined area.

Habitat classification: The process of placing vegetation or wildlife habitats into groupings or categories in order to allow the identification of similar areas. Ecological land classification is one grouping of habitat classifications.

Habitat evaluation: The placement of value on a habitat conditions in an area, such as "good" winter cover or "poor" forage supply. The value rating may be qualitative, or quantified in some manner.

Habitat inventory: Any number of methods by which classifications of vegetation or wildlife habitats are recorded, tallied, or censused.

Habitat management: The science and art of manipulating the habitat components in an area to produce desired results in the wildlife resource.

Habitat type/plant community/ecological land type: A geographic area capable of supporting a certain vegetation type, usually the climax vegetation type for that particular area. A habitat type is a description of an area and includes all successional stages likely to occur on that area. Ecological land type and plant community are used by some ecologists, but not others.

Landscape ecology: Reciprocal effects of spatial pattern on ecological patterns; considers the spatial heterogeneity and temporal change to be intrinsic parts of natural systems.

Limiting factor: An influence that directly affects a species' habitat, and if absent will result in the animal's inability to thrive.

Line transect: An inventorying technique in which a line of length L is set out randomly in the sampling area. Observers travel along the line, counting and recording all animals seen within a maximum observation distance.

Niche: Describes the functional role of a species within its habitat. In a broad sense, the complete description of the niche of a species will also define its habitat.

Plot method: An inventorying technique in which a total sampling area is marked off into smaller plots of uniform area. Observers count and record wildlife found in a few of these randomly-chosen plots. By looking at wildlife count per unit area, scientists extrapolate the plot data to estimate populations in the total sampling area.

Small scale: An analysis containing a relatively small amount of space.

Stand: The working unit or actual vegetation in an area. Stands can be measured and manipulated. Characteristic of many similar stands are the basis for vegetation types or plant associations.

Vegetation analysis: The measurement and description of the vegetation in an area.

Succession: An orderly process over time of community development involving changes in species composition or structure and community processes.

Vegetation type/plant association: Terms which are very similar in meaning. Both refer to a particular grouping of plants which typically occur together in an area and have similar properties of composition and structure.

Wildlife management: The science and art of making decisions and taking actions to manipulate the structure, relations, and dynamics of populations, habitat and man to achieve specific human goals by use of the wildlife resource.

APPENDIX G

Careers in Conservation: Student Information Sheet

Schoolyard Habitats projects provide the opportunity for students and teachers to investigate diverse environmental topics, such as water quality, soil ecology, and wildlife biology, and to gain experience using technologies employed by environmental scientists, from the simple to the complex. Students employ communication skills to access community and peer support for their project or investigate historical use of the site. These skills in the sciences and language arts not only prepare students for the workplace and college, they can provide insight into their future career path. For example, when students inventory a site to document existing living and non-living characteristics, they are getting a glimpse of the field of ecology. Ecologists, wildlife biologists and foresters learn and employ various methods for inventorying a site prior to the design of a habitat restoration plan. Many of today's urban planners are required to have training in ecological design for municipal and public sector jobs.

As your students complete the process of creating a Schoolyard Habitats site, ask them to brainstorm about all of the agencies, businesses and organizations in their local community that they think could help with the planning and implementation stages. Your students may actually enlist some volunteer support from these local resources. Ask students to think about their list and discuss why these businesses and their employees would be good resources for their project. Discuss how their professions are related to the habitat project. Students could research these types of careers and career paths through the internet and

by interviewing some folks on the list. The following resource can be used with students to begin their exploration of environmental careers.

Why Career Education?

Local professionals in environmental fields will often volunteer to help with your Schoolyard Habitats project. Professionals can introduce you to new career interests and career paths, and show how commitment to the local environment can have a positive effect on your community. You can use this guide to identify career areas that might interest you.

What is a Career Path?

A career path is a series of steps that lead to a job in a particular profession. Steps include formal education, work and volunteer experience, training and internships. Career paths aren't set in stone. There are usually many ways to get to the position you want.

What is an Environmental Career?

An environmental career includes a range of professions that focus on protecting or improving the environment. "Environment" means more than wilderness areas; it also includes the land, air, water, and life of urban areas. Environmental professionals come from many different backgrounds and include scientists, lawyers, educators, engineers, and business administrators (among others). A few examples of common environmental professions follow:

Fishery and Wildlife Management

- Fishery Biologist
- Wildlife Ecologist

Parks and Outdoor Recreation

- Park Administrator
- Conservation Officer

Air and Water Quality Management

- Pollution Prevention Specialist
- Toxicologist
- Aquatic Ecologist
- Public Health Professional

Education and Communication

- Environmental Journalist
- Interpretive Naturalist
- Environmental Educator

Hazardous Waste Management

- Land and Water Conservation
- Environmental Chemist

Forestry

- Urban Forester
- Natural Resource Manager

Solid Waste Management
- Environmental Engineer
- Recycling Coordinator Policy Analyst

Planning
- Land-use Planner
- Transportation Planner

Environmental Policy
- Attorney
- Elected Official

Landscape Ecology
- Landscape Architect
- Ecosystem Restoration Expert

Agriculture
- Organic Farmer
- County Extension Agent
- 4-H Coordinator

Tips for Investigating Career Options:
- Call university admissions offices to find out what programs they offer
- Visit a college Career Planning and Placement Office
- Check out career guides at your library (e.g., The New Complete Guide to Environmental Careers)
- Talk to someone in the profession that interests you about career paths.

Schoolyard Habitats Resource Guide

The list below highlights helpful references for Schoolyard Habitats projects. In addition to this listing, resources — including books, newsletters, videos, web page addresses, resource agencies and organizations — are updated on a regular basis on the NWF Schoolyard Habitats website. Visit us at **www.nwf.org** for additional information.

NWF Resources

Schoolyard Habitats® Program
www.nwf.org/schoolyardhabitats
Information on creating a wildlife habitat on your school grounds, and certifying your habitat as an official Schoolyard Habitats site.

Wildlife Habitat Certified Sites
Free newsletter published by the National Wildlife Federation. Showcases habitat projects and features articles and ideas relevant to both Schoolyard and Backyard Wildlife Habitats.

If you would like to be added to this list, send a email to bwh-exchange-subscribe@igc.topica.com.

Ranger Rick™
Monthly nature magazine for use by grades 4-6. To order: 1-800-611-1599.

Your Big Backyard™
Monthly nature magazine for use by grades K-3. To order: 1-800-611-1599.

Schoolyard/School Garden-Specific Curriculum

Physical Education in the School Grounds.
Chedzoy, Sue. 1993. Learning Through Landscapes.
Provides outdoor activities for K-6 that go beyond typical PE curriculum.

History in the School Grounds. Dean, Jacqui. 1993. Learning Through Landscapes.
Outdoor activities for K-6 that help students gain a better understanding of history and their school's past.

Geography in the School Grounds. Hare, R., C. Attenborough, and T. Day. 1993. Learning Through Landscapes.
Outdoor activities for K-6 focusing on geography skills, such as map making, the use of photographs and models, water and land forms, and environmental quality.

Beyond the Bean Seed: Gardening Activities for Grades K-6. Jurenka, Nancy Allen. 1996.
Hands-on activities which integrate gardening and language arts.

Arts in the School Grounds. Keaney, Brian. 1993. Learning Through Landscapes.
Numerous creative outdoor art, drama, design, music, and dance activities for K-6.

English in the School Grounds. Keaney, Brian. 1993. Learning Through Landscapes.
Activities for K-6 designed to teach students writing, reading, listening, and speaking.

Digging Deeper: Integrating Youth Gardens Into Schools & Communities. Kiefer, Joseph and Martin Kemple. 1998. Food Works and Common Roots Press.
Takes you step by step through the entire process of creating a garden for educational purposes on school grounds. While the focus of the book is vegetable gardens, the information and specific examples are applicable for any type of school garden project.

The Growing Classroom: Garden-Based Science, Grades 2-6. Life Lab. 1990. Life Lab: Santa Cruz, CA.
Resource for teaching math, reading, and nutrition skills. Provides experiments, fun games, and pictures that make learning fun.

National Gardening Association Guide to Kids' Gardening. Ocone, Lynn and Eve Pranis. 1990. John Wiley and Sons, Inc.
Information on how to start gardening projects with kids, including a section on garden activities.

GrowLab: Activities for Growing Minds. Ocone, Lynn and Eve Pranis. 1990. National Gardening Association.
Creative plant-related activities for grades K-8.

Mathematics in the School Grounds. Rhydderch-Evans, Zoe. 1993. Learning Through Landscapes.
Activities for K-6 divided into sections on numbers, measurement, space and shape, and data work.

Ten Minute Field Trips. Russell, Helen Ross. 1990. National Science Teachers Association.
Hands-on learning K-6 activities to do on school grounds with or without a school garden or wildlife habitat.

Mapmaking with Children: Sense of Place Education for the Elementary Years. Sobel, David. 1998. Heinemann Press.
Provides a developmental perspective on children's understanding of maps, and gives concrete examples of developmentally appropriate mapmaking activities for children ages 5-12. Activities foster students' development of a sense of place, beginning with their own yards and communities.

Science in the School Grounds. Thomas, Gill. 1993. Learning Through Landscapes.
Activities for K-6 focusing on ponds, trees, grassy areas, wildflowers, waste-management, mini-beasts, weather, and the built environment.

Magazines/ Newsletters

Green Teacher
Fifty-page quarterly magazine that provides environmental information and activities for educators of grades K-12.
916-960-1244
www.greenteacher.com/

Environmental Education Activities

Journey to the Heart of Nature: A Guided Exploration. Cornell, Joseph. 1995. Dawn Publications.

Sharing Nature with Children. Cornell, Joseph. 176p. 1998. Dawn Publications.
Provides activities and insight on ways to involve kids with the outside world.

Sharing the Joy of Nature: Nature Activities for All Ages. Cornell, Joseph. 1989. Dawn Publications.

Environment & Education. Habitat and Biodiversity: Teacher Resource Guide. Dale Seymour Publications, 1998.
Activities which use the school grounds as a research laboratory for grades K-12. Topics covered are biodiversity, landscape management, xeriscaping, composting, and integrated pest management.

EcoInquiry: A Guide to Ecological Learning Experiences for the Upper Elementary/Middle Grades.Hogan, Kathleen. Kendall Hunt,1994.

Ecology for All Ages: Discovering Nature Through Activities for Children and Adults. Hunken, Jorie. Globe Pequot Press, 1994.

Hands-On Nature: Information and Activities for Exploring the Environment with Children. Lingelbach, Jenepher and Purcell, Lisa, eds. Vermont Institute of Natural Science, 2000.
Well organized and effective nature-based activities.

Project Seasons: Hand-on Activities for Discovering the Wonders of the World. Parella, Deborah. Shelburne Farms.
Elementary activities focused on science through the seasons.

City Kids and City Critters: Activities for Urban Explorers. Roberts, Janet Weir and Carol Huelbig. 1996. Learning Tiger Press, McGraw Hill.

Project Learning Tree: Environmental Education. The American Forest Foundation. 1996.
Pre K-8 Activity Guide.

Let's Grow! 72 Gardening Adventures with Children.Tilgner, Linda. Story Communications, 1988.

Project WILD K-12 Activity Guide. Council for Environmental Education. 2000.

WOW! The Wonders of Wetlands: An Educator's Guide. 1995.
Background information and 50 activities for grades K-12. Special appendix on creating a schoolyard wetland habitat.

Landscaping for Wildlife

Living With Wildlife. California Center for Wildlife Staff. Sierra Club Books, 1994.
Describes more than 100 North American wildlife species and their interactions with humans. Provides advice on how to care for wildlife in distress, prevent human-wildlife conflicts, and deal with problems in a humane manner.

The Natural Habitat Garden. Druse, Ken and Margaret Roach. Crown Publishing Group, 1994.
Information on how to create a beautiful, wildlife-friendly landscape using native plants. Covers many different types of ecosystems (grasslands, drylands, wetlands, woodlands, etc.) and has numerous full color pictures of the recommended plants.

Landscaping for Wildlife. Henderson, Carroll. Minnesota Dept. of Natural Resources, 1994.
Guide, reference, and resource book for creating natural landscaping that support wildlife.

The Environmental Gardener. Marinelli, Janet, ed. Brooklyn Botanic Garden, Inc., 1992.

Your Backyard Wildlife Garden. Schneck, Marcus. Rodale Press, 1992.

Noah's Garden: Restoring the Ecology of Our Own Backyards. Stein, Sara. Boston: Houghton Mifflin, 1993.
Inspiring story of the author's experience of transforming her conventional yard into a wildlife haven. Provides practical information on the way ecosystems works.

Homes for Wildlife: A Planning Guide for Habitat Enhancement on School Grounds. Wyzga, Marilyn C. 1998.
New Hampshire Fish and Game Department. Excellent step-by-step guide for creating a schoolyard wildlife habitat and integrating it into the curriculum. Geared toward K-8 teachers. Available through the Acorn Naturalist 1-800-422-8886

Inclusive Landscaping

Backyards and Butterflies: Ways to Include Children with Disabilities in Outdoor Activities. Greenstein, Doreen. New York State Rural Health and Safety Council, 1993.

Enabling Gardens: Creating Barrier-Free Gardens. Rothert, Gene. Taylor Publishing Company, Dallas, TX, 1994.
Information and techniques on how to make a garden accessible for individuals with mobile, visual and other impairments.

Landscaping for Children

The Challenge of the Urban School Site. Learning Through Landscapes. 1996.
Instruction and inspiration for creating successful outdoor learning areas at urban schools. Offers practical advice on multi-cultural issues, making use of limited space, seating, shelter, arts, vandalism, and removing asphalt.

Plants for Play: A Plant Selection Guide for Children's Outdoor Environments. MIG Communications, 1993.
Offers suggestions on plants that have educational value and are safe for children.

Natural Learning: Creating Environments for Rediscovering Nature's Way of Teaching. Moore, Robin C. and Herb H. Wong. Moore, Robin C. MIG Communications, 1997.
Uses a specific school as a case study to guide teachers, administrators, designers, and parents through naturalizing a schoolyard and integrating it into the curriculum.

WILD School Sites: A Guide to Preparing for Habitat Improvement Projects on School Grounds. Schiff, Paul and Dr. Cindi Smith-Walters. Project WILD, 1994.

Landscapes for Learning: Creating Outdoor Environments for Children and Youth. Stine, Sharon. John Wiley & Sons, Inc., 1997.
Provides useful information on what makes a schoolyard habitat successful using 11 case studies and numerous photos and drawings. Also outlines essential elements for any play environment.

Special Places, Special People: The Hidden Curriculum of School Grounds. Titman, Wendy. Learning Through Landscapes, 1994.

A Guide to the Management and Maintenance of School Grounds. Wood, Joan and Michael Littlewood. Learning Through Landscapes, 1996.

Native Plants

Native Perennials: North American Beauties. Beaubaire, Nancy, ed. Brooklyn Botanic Gardens, Inc., 1996.
Information on how to include native plants in your garden design and how care for them. Also provides lists of native wildflowers suppliers.

Going Native: Biodiversity in Our Own Backyards. Marinelli, Janet, ed. Brooklyn Botanic Gardens, 1994.
Suggests native plants to use in your landscape and the benefits of doing so.

Gardening with Wildflowers and Native Plants. Sawyers, Claire, ed. Brooklyn Botanic Gardens, 1990.
Suggests native plants and wildflowers for an attractive wildlife-friendly landscape.

Landscaping with Wildflowers and Native Plants. Wilson, William H. Ortho Information Services, 1985.
Information on how to design and create prairies, meadows, alpine, and desert gardens. Also suggests where to find native plants and seeds.

Composting

Worms Eat My Garbage: How To Set Up and Maintain a Worm Composting System. Appelhof, Mary. Flowerfield Enterprises, 1982.

The Rodale Book of Composting. Martin, Deborah L. and Grace Gershuny, eds. Rodale Press, 1992.

Complete information on composting including: history, benefits, methods, equipment, and how-to information.

Soils

Soils. Bowles, John Paul, ed. Brooklyn Botanic Garden, Inc., 1990.
Information on the properties of soil, plant requirements for soil, how to test your soil, how to improve your soil, and much more.

Water Gardens

The Natural Water Garden: Pools, Ponds, Marshes & Bogs for Backyards Everywhere. Burrell, C. Colston, ed. Brooklyn Botanic Garden, Inc., 1997.
Helps you select the best type of water garden and plants for your site and region. Offers step-by-step instruction for designing, creating, and installing ponds, marshes, and bogs.

Pest Management

Common-Sense Pest Control. Olkowski, William, Sheila Daar, and Helga Olkowski. Taunto Press, 1991.
Offers proven, practical solutions to pest problems that use physical, mechanical, cultural, and biological control rather than chemicals.

Natural Insect Control: The Ecological Gardener's Guide to Foiling Pests. Schultz, Warren, ed. Brooklyn Botanic Garden, Inc., 1994.
Information on how to tell good insects from bad insects, how to naturally control pests, and much more.

Attracting Specific Wildlife

Bats

America's Neighborhood Bats. Tuttle, Merlin D. 104p. University of Texas Press, 1988.
Behavior and biology of bats, including color photos and range maps.

The Bat House Builder's Handbook. Tuttle, Merlin D. and Donna L. Hensley. 34p. 1993.
Bat Conservation International. Excellent information on bats and bat houses. Contains the results of years of research on size, color and placement of bat houses. Also included is information on how to participate in ongoing bat research through membership in Bat Conservation International (application card included).

Birds

The Complete Guide to Bird Feeding. Dennis, John. Alfred A. Knopf, 1994.
Information on what birds to expect when and how to choose the right bird feeder and stock it with the most suitable bird feed.

For the Birds! Halpin, Anne. Henry Holt, 1996.

Garden Birds of America. Harrison, George H. Willow Creek Press, 1996.
Information on how to attract birds, including suggestions on what to plant, feeders and food, and size and placement of birdhouses. Color photos of 60 popular garden bird species, with information on their ranges, and natural history.

The Bird Garden. Kress, Stephen W. Dorling Kindersley, 1995.
Comprehensive guide to attracting birds to your yard or school year round using bird feeders and recommended plants.

How to Attract Birds. McKinley, Michael and John Dennis. Ortho Information Services, 1995.
How-to information on attracting birds by providing food, water, shelter, and nesting sites.

Butterflies and Hummingbirds

How to Attract Hummingbirds and Butterflies. Dennis, John and Matthew Tekulsky. Ortho Information Services, 1990.
Provides plant selection lists and necessary design elements for the most common species of hummingbirds and butterflies.

Audubon Society Handbook for Butterfly Watchers. Pyle, Robert J. Charles Scribners Sons, 1984.
Practical field advice, including what to wear, equipment to carry, identification chart, and more.

The Hummingbird Book. Stokes, Donald W. and Lillian Q. Stokes. Little, Brown and Co., 1989.
Information on how to attract and identify hummingbirds.

Butterfly Gardening. Xerces Society Staff. Sierra Club Books, 1990.
Information on how to create a butterfly habitat, overview of the life cycle of butterflies and moths, regional lists and pictures of the most common North American butterflies and moths, and much more.

Habitat Restoration

Habitat Restoration: A Guide for Proactive Schools. Chesky, Edward D. Waterloo County Board of Education, 1993.

A Citizen's Streambank Restoration Handbook. Firehook, Karen and Jacqueline Doherty. Izaak Walton League of America (Save Our Streams), 1995.

Restoring Streams in Cities: A Guide for Planners, Policymakers and Citizens. Riley, Ann L. Island Press, 1997.
Presents land use planning, site design, and watershed restoration techniques that can be used to restore urban streams.

School Greening

Blueprint for a Green School. Chase, Jayni and Thomas E. Lovejoy. Scholastic Inc., 1995.
Very complete guidebook on environmental issues and school grounds. Includes an extensive resource list.

Field Guides

The Peterson Series Field Guides; over 55 titles, covering North America. Houghton Mifflin.

The Audubon Society Nature Guides; series which focuses on ecosystems and habitat types. Alfred A. Knopf.

The Stokes Nature Guides; including three volumes of Guide to Bird Behavior. Little, Brown, and Co.

Children's Books

There are thousands of excellent children's books written about plants, animals and the environment. These are a few of the most relevant how-to habitat guides for children, books that involve children starting successful gardening projects in their neighborhoods, and books in which children are discovering wildlife where they live.

Where Birds Nest in the City. Bash, Barbara. Urban Roosts: San Francisco: Little Brown and Company, 1990.
Informative book on urban wildlife for readers ages 9-12.

Secret Place. Bunting, Eve. New York: Clarion Books, 1996.
Story of young boy's discovery wildlife in the city.

The City Kid's Field Guide. Herberman, Ethan. New York: Simon and Schuster. 1989.
Educational information geared towards kids on the types of wildlife found in the city and how they survive.

Seedfolks. Fleischman, Paul. New York: Harper Collins, 1997.
Short novel for middle school students; 9 year-old girl starts a community garden and brings together her diverse neighborhood and their stories.

Growing Wild: Inviting Wildlife Into Your Yard. Perenyi, Constance. Hillsboro, OR: Beyond Words Publishing, Inc., 1991.
Wildlife habitat creation how-to guide for kids.

The Garden of Happiness. Tamar, Erika. San Diego, Harcourt Brace and Co., 1996.
Mariso, the main character, works with her neighbors to transform a garbage-filled lot in their inner city neighborhood into a community garden. Recommended for readers age 4-8.

Wild in the City. Thornhill, Jan. San Francisco: Sierra Club Books for Children, 1995.
Jenny and her mother are surprised to discover all the wild creatures that are living in their urban yard. At the end of the story are details about the animals in the book, as well as hints about how to find clues to their presence in your own neighborhood. Recommended for readers age 4-8.

Online Resources

Habitat Creation

Wild Ones Landscapers
www.forwild.org/
Site is dedicated to the importance of landscaping with native plants. Includes an excellent "how-to" handbook that guides you through the creation of native plant landscapes and habitat for wildlife.

Sources of Materials

Let's Get Growing
www.letsgetgrowing.com/
Online catalog full of tools, teaching aides, books, and much more to use with your Schoolyard Habitats site.

Gardens for Growing People
www.svn.net/growpepl/
Catalog for ordering child-sized tools, books, curriculum, and much more. The site also offers tips for gardening with children and a free newsletter.

Learning Through Landscapes
www.ltl.org.uk/
A UK-based program that promotes thoughtful design and use of school grounds. A source for a high quality schoolyard curriculum series (i.e. English in the School Grounds, Math in the School Grounds) as well as guidebooks addressing specific issues, such as seating, maintenance, and fundraising.

Curriculum and Activities

The National Gardening Association's Kids Gardening Page
www.kidsgardening.com/

Great information for teachers and parents on gardening projects to do with children. Site contains a wealth of information, including recommended books for children and adults, grant opportunities, keyword curriculum search, and a free online newsletter.

The Wild Ones
www.thewildones.org/
International program that offers curriculum ideas, resource lists, free newsletters, information on research projects that classrooms can join, and much more. Site is also available in Spanish and Portuguese.

Classroom Projects

Journey North
www.learner.org/jnorth/
Free online program through which classrooms can track the spring migration of various animal species. Students share their information with other classrooms across the hemisphere and work directly with scientists. The site also provides lesson ideas and a forum for online teacher discussions.

Classroom Feeder Watch
http://birdsource.cornell.edu/cfw/
Great program run by Cornell University that allows classrooms to participate in ongoing ornithology research projects. Includes curriculum ideas and National Science Education Standards links.

Monarch Watch
www.monarchwatch.org
Site has a great deal of information related to teaching about monarchs in the classroom. Included on the site are details on the monarch life cycle, instructions on how to rear monarchs and grow milkweed, and opportunities for students to participate in research projects with scientists.

Plants and Wildlife

American Horticultural Society
www.ahs.org
Plant related information and links to a national list of children's gardens (under the Gardening Connections section).

The Lady Bird Johnson Wildflower Center
www.wildflower.org
Regional native plant lists, as well as educator kits, which contain plant information and posters for use in the classroom, can be purchased on the site.

Species 2000
www.sp2000.org
Great starting point for learning about specific plant and animal species. Includes in-depth information and a variety of helpful web links.

Butterflies of North America
www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/bfly.htm
Excellent source of region-specific information about butterflies, complete with county checklists, distribution maps and photos.

Bat Conservation International
www.batcon.org
Provides information on bats, building bat houses, and ordering bat-related educators' guides.

Environmental Education Clearinghouses

Environmental Literacy Council
www.enviroliteracy.org
Comprehensive information and valuable links on key environmental issues. Also includes reviews of advanced placement environmental science text books.

The Center for Environmental Education
www.ceeane.org
Contains a searchable database of environmental education programs. Helpful source of topic-specific curriculum and articles and provides curriculum evaluations.

EE-Link
http://eelink.net/
Offers links to many websites, including sites on curriculum ideas, grant opportunities, and environmental education publications.

ERIC Clearing House for Environmental Education
www.ericse.org/eeindex.html
Information on environment-focused books, conferences, lesson plans, journals, and web sites.

Listserv

School Garden Listserv
A forum for discussing school garden issues. This list is open to all interested in or who are participating in school garden creation, use, maintenance and study. Participants discuss issues pertaining to pre-school, elementary, and secondary schools. To subscribe, visit www.mallorn.com/mailman/listinfo/school_garden.

Garden Supply Resources

Acorn Naturalist
17821 East 17th St., #103,
PO Box 2423
Tustin, CA 92781-2423
Resources and curricula for the trail and classroom.

Applewood Seed Company
5380 Vivian Street,
Arvada, CO 80002
303-431-6283 Fax: 303-431-7981
Children's gardening products.

Arbour Recycled Products
800 Bank Street, Ottawa, Ontario
K1S3V8
613-567-3168 Fax: 317-567-3568
Vermicomposting (composting with worms) 25-minute video.

Banana Slug String Band
390 Big Creek Road, Davenport, CA
95017
408-429-9806
Cassette tapes and video with sing-along songs about gardening and the environment.

Botanic Garden Seed Company
225 Fifth Avenue #617,
New York, NY 10010
212-679-6015
Seeds and line of supplies for children.

The Bug Store
www.bugstore.com
113 W. Argonne, St. Louis, MO
63122
An online catalog selling everything from ladybugs, lacewings to praying mantis.

Burpee Seed Co's Grow America
www.burpee.com
W. Atlee Burpee Company
300 Park Avenue, Warminster, Pa
18974
215-674-4900 or 800-888-1447
Fax: 215-674-8402
Seeds and gardening supplies, seed planting campaign for children, free press kit.

Clyde Robin Seed Company
www.dirtgardener.com/clyderobin/
3670 Enterprise Avenue, Hawyard,
CA 94545
510-785-0425
Wildflower seeds.

The Cook's Garden
www.cooksgarden.com
P. O. Box 535, Londonberry, VT
05148
802-824-3400 Fax: 802-824-3027
Seeds, plants and organic gardening supplies. Emphasis on family gardening.

Garbage Bag Gardens
1711 Stockton Hill Road, No. 310
Kingman, AZ 86401
602-757-4762
Plastic garbage bag containers for growing plants in classrooms and outdoor areas. Posters.

Gardeners' Supply Company
www.gardeners.com/gardeners
128 Intervale Road, Burlington, VT
05401-2850
802-863-1700
Child-sized gardening tools.

Gardens for Growing People
P. O. Box 630, Point Reyes, CA
94956
415-663-9433
E-mail: GrowPepl@svn.net
www.svn.net/growpepl/
Garden supply catalog/newsletter.

Granite Seed
1697 West 2100 North
P. O. Box 177, Lehi, UT 84042
801-768-4422 or 801-531-1456
Grass seeds, shrubs, reclamation plants.

Heritage Gifts, Inc.
1203 Spring Street,
Latrobe, PA 15650
412-537-0878 or 800-597-2275
Fax: 412-539-2298
Garden gifts, including Bark Buddy plush tree with seed kit.

Jackson and Perkins
www.jacksonandperkins.com
1 Rose Lane Dept. 7274, Medford,
OR 97501
Offers a nice selection of miniature roses for growing indoor plus basic rose and perennial care basics.

Jonny's Selected Seeds
www.jonnyseeds.com
Foss Hill Road, Albion, ME 04910
207-437-9294 Fax: 207-437-2165
Vegetable, flower and herb seeds, books and supplies. Educational group discounts.

Lets Get Growing
www.letsgetgrowing.com
1900 B Commercial Way, Santa Cruz,
CA 95065
408-464-1868 Fax: 408-476-1427
Complete selection of children's gardening curriculums; tools and indoor gardening projects.

Northrup-King Lawn and Garden
7500 Olson Memorial Highway
Golder Valley, MN 55427
612-593-7265
Child-sized garden tools, garden supplies.

Shepherd's Seeds
www.sheperdseeds.com
30 Irene Street, Torrington, CT
06790
203-482-3638
Online catalog with over 500 seed varieties including a line of children's garden seeds. Reference library with a number of basic growing guides.

Stokes Seeds
http://Vaxxine.com/seeds
Box 548, Buffalo, NY 14240-0548
716-645-9649

Stokes Seed Company has been around for over 115 years. Stokes has one of the best selections of vegetable seeds available at a good price. This site also includes a plant hardiness zone map and gardening links.

Territorial Seed Company
www.territorial-seed.com
P. O. Box 157, Cottage Grove, Oregon 97424-0061
541-942-9547
Good online selection of vegetable, flower and herb seeds

Van Bourgaondien & Sons, Inc.
www.dutchbulbs.com
P. O. Box 1000, Babylon, NY 11702
Great selection of high quality bulbs and perennials.

Wee Share International
P. O. Box 1028, Pagosa Springs, CO 81147
800-874-2733
Wee Sprouts Salad Kit.

Wild Birds Unlimited
Headquarters:
11711 N. College Ave., Suite 146
Carmel, IN 46032-5655
888-302-2473 FAX: 317-571-7110

FEEDBACK FORM

Schoolyard Habitats® : A How-To Guide

To produce a more accurate, effective, and user-friendly product, we need your feedback. Please let us know what you think. Once you have completed this form, please return all comments to the address below. **Please feel free to use separate pages to answer questions or add additional comments.** Be as specific as possible. Thanks so much for your time and assistance!

Optional

Your Name: _____

Address: _____

Telephone: (_____) _____

Email: _____

General:

1. Overall, how effective is this manual in preparing educators to create a Schoolyard Habitats site ? Is there anything missing? How might we remedy this issue? _____

2. How useful and complete was the background and planning information? Did you identify any particular topics that could be added or expanded upon? _____

3. Please comment on specific activities, especially those you found especially helpful or those that were lacking. Please indicate anything that you found unclear. _____

4. Did you modify any of the activities? If so, how? _____

_____

_____

5. How well do the activities reflect the grade level range they have indicated? Please point out any activities that need to be reassessed. _____

_____

_____

6. Is your Schoolyard Habitats site certified? Do you plan to certify your Schoolyard Habitats site? If not, why? _____

_____

_____

7. How have you used your Schoolyard Habitats site in cross-curricular learning? We are eager to hear examples! _____

_____

_____

Additional comments: _____

_____

_____

_____

_____

BE OUT THERE™
NATIONAL WILDLIFE FEDERATION®

Return to: *National Wildlife Federation*
Schoolyard Habitat
11100 Wildlife Center Drive
Reston, VA 20190-5362

Thank you

National Wildlife Federation
Schoolyard Habitat
11100 Wildlife Center Drive
Reston, VA 20190-5362