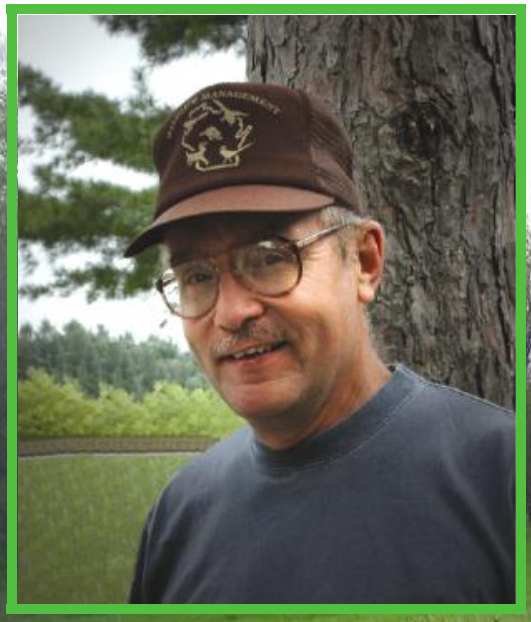

Boscobel Area Schools
Paul Brandt School Forest
Education Plan

Paul Brandt was an active member of the Boscobel community for over 32 years. He was an avid outdoorsman and taught hunter's safety classes to area youth for 30 years. He worked for the Wisconsin Department of Natural Resources as a wildlife biologist serving the southwest. Paul retired from the DNR in 2002. In 2005, Paul passed away unexpectedly at age 60, leaving over $600,000 to his Lower Wisconsin State Riverway Fund. Paul also bequeathed 80 acres of land to the Boscobel School District that was dedicated in 2007 as the Paul Brandt School Forest. In 2008, the Department of Natural Resources dedicated the Millville Unit of the Lower Wisconsin State Riverway in Paul's memory. In this way and many more, his legacy lives on in the lands, waters of the Riverway, and the Paul Brandt School Forest.

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Completed by: Ruth Bauer, Nancy Sanger, Tomi Ann Gebhard, Shaun Wittrig, Karen Weber, Penny Bohringer, Susan Beck, Joy Walker

Produced under a 2008-2010 grant from the Wisconsin Environmental Education Board.

BOSCOBEL AREA SCHOOLS EDUCATIONAL PLAN FOR THE PAUL BRANDT SCHOOL FOREST

The mission of the Boscobel Area School District, in cooperation with home and community, is to prepare individuals for life-long learning by providing the opportunity to grow socially, physically, mentally, and emotionally, within a safe, nurturing environment.

The Paul Brandt School Forest serves as a multiple-use natural school and community resource, providing opportunities for people to develop awareness of and appreciation for the natural world to become informed, responsible decision-makers regarding the environment

RATIONALE

Value Statement

The Paul Brandt School Forest provides hands-on opportunities to engage learners in unique environmental educational opportunities. Integrating environmental education (EE) into the curriculum is an effective method to increase student achievement, decrease behavior issues, and increase attendance (Lieberman and Hoody 1998). Additionally, Sivek, (2002) states that environmental sensitivity is a precursor to environmental literacy. Ultimately hands-on, authentic experiences will enhance students' environmental knowledge and help them meet future challenges as members of our global society.

Target Messages

1. Environmental stewardship and conservation are essential for insuring a high quality of life for future generations on a local, regional, national and global scale.
2. Our lives are greatly influenced monetarily, recreationally, emotionally and spiritually by the natural resources in the Boscobel School District.
3. Knowledge and skills will allow students to make informed choices and develop lifestyles that contribute to a healthy society and environment.
4. Taking an active role in responsible resource use will help to sustain and improve our environment and community.
5. Responsible citizens will act wisely regarding the overall health of the environment.

Needs Assessment Results

The School Forest Needs Assessment Survey was distributed to staff during the fall 2009. Results of the survey indicated the school forest was not being utilized to its potential. We are proud to say that 100% of the teachers who returned the survey did realize our district had a school forest site!
All of the 4k – 6th grade teachers take their students to the forest at least once a year. Some grade levels will go to the forest as much as 3 times per year.

The following conclusions were drawn:
Interest:

The Paul Brandt School Forest is being integrated into the elementary curriculum. At this time elementary classes and teachers utilize it most often. Middle and High school classes do not use the School Forest because of scheduling and curriculum restraints. The survey indicates some interest on their part.

Barriers:

- Many teachers feel they do not have the knowledge base to present environmental topics or make connections to the environment within their own curriculum.
- Transportation issues inhibit use because the school forest is 7 miles from campus.
- There are no permanent bathrooms, classroom or storage facilities.
- Lack of materials due to inadequate funding.

Many Boscobel teachers lack the training, resources, guidance, and information to incorporate the environmental standards into their curriculums. They also need time and practice to explore and incorporate hands-on, inquiry-based lessons designed to extend the classroom to the school forest site.

Paul Brandt School Forest Goals

Based on the results of the survey, the highest priority goal for staff was an indoor classroom facility, followed closely by permanent outdoor bathrooms. Respondents also desired creation of habitat through tall grass prairie and butterfly plantings as well as maintaining the trails and Rock Island. They also indicated need for informational signs on the trails, as well as a major sign to identify the site as our school forest.

SITE DESCRIPTION AND OPPORTUNITIES

Site Description & Location

Paul Brandt School Forest Address:
24211 N. Irish Ridge Road
Boscobel, WI 53805

Legal description:
T 9N, R3W, Town of Scott, Crawford County, Wisconsin
Section34: The NE ¼ of the NW ¼ and the NW ¼ of the NE 1/4

School Forest coordinates
43.218672, -90.714283

Google directions to the Paul Brandt School Forest
http://maps.google.com/maps?saddr=Boscobel%2C%20WI&daddr=43.2177415385%2C-90.7146405484%20(%22Paul%20Brandt%20School%20forest%22)&ie=utf-8&v=2.2&cv=4.2.0205.5730&hl=en

The acreage covered by this plan is located in SE Crawford County. The area is typical of the driftless area of SW Wisconsin, and area not scraped by the last continental ice sheets. Broad, rolling hills and steep sided valleys give a rugged character to the landscape. The wooded

hillsides are intermixed with cropland and grazing land on the ridge tops and valley floors. In general, the soils are wind deposited silt loams. The shallower soils tend to be droughty, and on steep slopes. The potential for erosion is high. Rock outcroppings of dolomite, limestone and sandstone are common along major stream corridors and tributary drainage.
A high concentration of the Midwest flora and fauna diversity is found here. The local area is known for its scenic quality and ability to grow high quality hardwoods. Large wooded blocks provide habitat for migratory songbirds. Numerous other game and non-game species reside in the other area. The soils generally include Dubuque silt loams and Fayette silt loam.

Water Features*:*

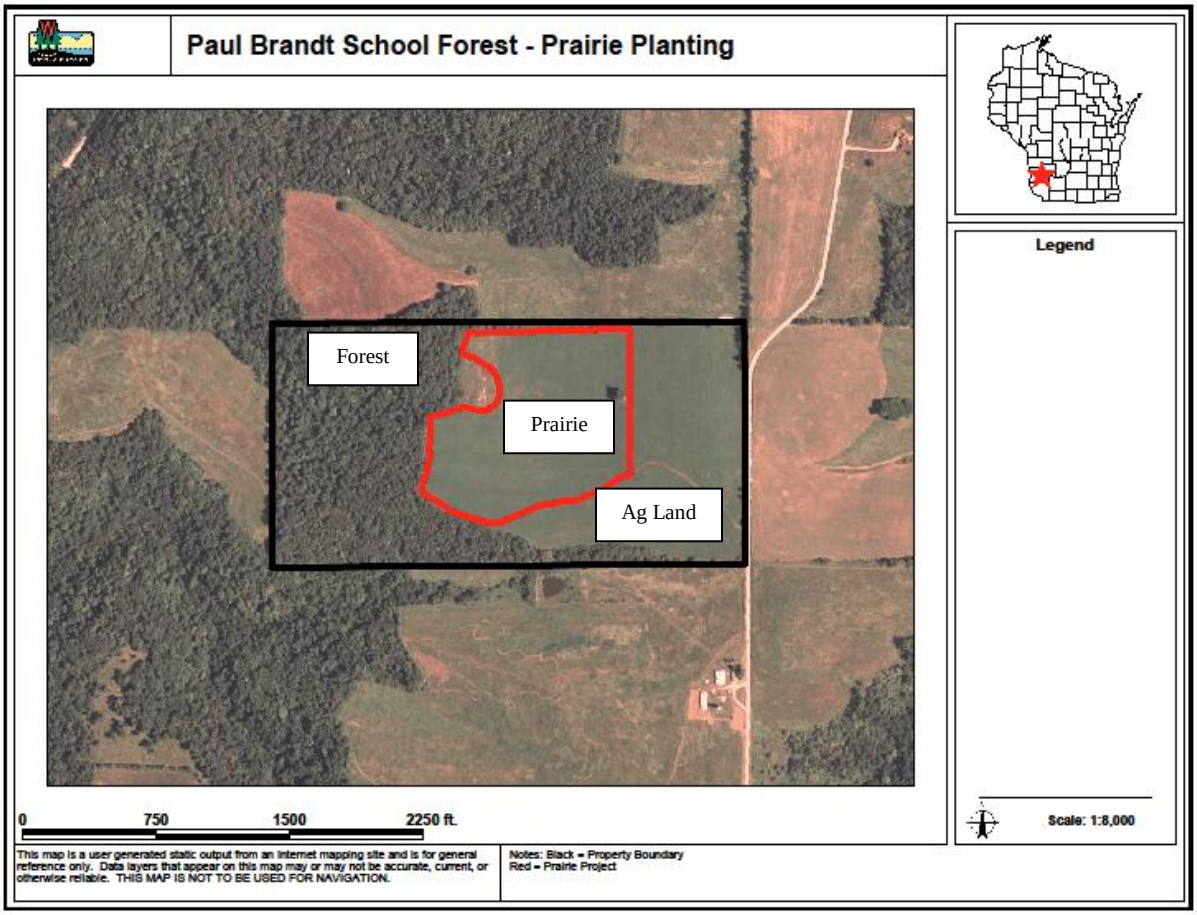
One small man-made pond that is less than an acre in size exists on the property. It is a shallow freeze-out pond only about 3 feet deep. Aquatic insects and frogs have been observed around the pond. Many creatures within the forest use the pond as a source of drinking water.

Facilities:

Currently there are no facilities located at the PBSF. Portable restrooms are provided fall and spring.

These are some of the educational opportunities possible at the Paul Brandt School Forest:

- Air quality monitoring
- Art – photography, drawing, painting
- Data collection
- Descriptive writing
- Diversity calculations and comparisons
- Ecological disturbance
- Ecological restoration – prairie, forest
- Ecological succession
- Education material development
- Exotic species impact and control
- Food web analysis
- Forest management methods
- Forest measurements
- Forest products
- Forest regeneration
- Forest surveys
- Geology
- Habitat surveys and classification
- Land use history
- Life-cycle investigations
- Management plan development
- Mapping
- Navigation skills
- Nutrient cycles
- Observation with a variety of senses
- Phenology
- Plant identification and classification
- Prairie management methods
- Service learning
- Soil analysis
- Team building
- Trail hiking
- Water cycle
- Water quality analysis
- Watershed analysis
- Weather and climate measurements
- Wildlife identification and classification



Site History

The boundaries of the town of Scott are identical with those of congressional township 9, of range 3 west. It is bounded on the north by the town of Clayton, on the east by Richland County, on the south by the town of Marietta and on the west by the town of Haney. Its general surface, in common with all Crawford County is rough. It has high ridges cut by deep ravines leading down to the valleys of the Kickapoo River on the west and the Wisconsin on the south. The valleys in this town are quite narrow. The main ridge runs north and south, but takes an indirect course, with spurs to the east and west.

The table lands were originally well timbered, with white and red oak, maple and basswood varieties together with some black walnut and butternut. In the valleys the timber is usually small and inferior, with many thorn apple and plum trees. But following down to the widening of these valleys, the soil is better and timber of a much heavier growth.

The soil on the high lands is clay, with loam mixed; in the valleys clay subsoil prevails, but with more sand mixed with the loam. For production, this soil is fully equal to any part of the county. All kinds of grain and grasses grown in this climate do well on these lands. Also considerable fruit, of the more hardy varieties, is raised here

In 1854 Tompkins Green settled on section 34. He was the first settler on what is called Irish Ridge, making his own road as he moved in. He was accompanied by his brother-in-law, Henry Hill, who only remained a short time. In 1997 Paul F. Brandt purchased the land from Barbara A. Terhune for the sum of $69,000.00.

Site Management

The Paul Brandt School Forest primary goal is to provide ecological education via an outdoor classroom. Our Management Plan (Appendix A) was developed in 2007 by Cindy Kohles and it contains educational components.

Our key goals are to:

1. Provide a diverse and accessible site for educational use.
2. Provide a diverse and accessible site for school and community recreation.
3. Manage the land to maintain diverse ecosystems.
4. Manage land to maximize learning opportunities.
5. Promotion of best management practices.

Objectives:

The objectives for site management in relation to the educational plan are to:

1. Involve students of all ages in the management of the site.
2. Develop in students a sense of ownership and accomplishment through involvement in management.
3. Manage the site to reach key goals as stated above.

Educational Connections

Our educational connections will build on the rationale and site description and will provide the foundation for development of our school forest curriculum. The Paul Brandt School Forest is being developed as an extension of our classrooms. We are utilizing the school forest to teach what can be best taught outdoors through experiential activities.

Key Concepts	**Site Connections**
1. Natural resources can be managed for ecological, social and economic uses by sustainable forestry.	• Forest Management and measurement techniques • Forest products • Exotic species control • Forest growth and regeneration • Watershed protection • Mapping • GPS/GIS
2. The diversity of life and the interconnectedness of all living things within an environment is important to ecosystem health.	• Ecosystem cycles • Abiotic and Biotic relationships • Plant and animal identification • Forest flora and fauna surveys • Food web analysis • Habitat survey and classification • Soil and water chemistry
3. Plants, animals, and humans can coexist while maintaining land integrity	• Exotic species eradication • Management plan developments • Forestry industry and products • Forest management

	• Mapping • GPS/GIS • Recreation opportunities
4. Forest and Ecosystems change through time.	• Forest succession • Glacial geology • Wisconsin forestry history and logging • Land use history • Forest habitat surveys • Seasonal changes in the forest
5. We rely on natural resources for our way of life.	• Forest industry and products • Pollution control • Climate change • Ecosystem degradation • Responsible resource management • Water and air quality surveys

Curriculum Connections

Grade Level	Skill/Goal/Content Area/ Classroom connection	Activity – Site Connection	Key Concept	Wisconsin Model Academic Standard
4K	Intro rules of forest, explore forest, learn forest voc, observations	Touring Forest & Forest Rules Forestry.basd.k12.wi.us Intro to forest rules Exploring the forest	1,2,3,4,5	EE A.4.3, EE A.4.4
4K	Learn colors in forest, object names in forest, classify objects	Color Detective-Hike Forestry.basd.k12.wi.us	1,2,4	Art H.4.1, Math F.4.3, EE-A.4.1, A4.2, A4.3, A4.4
4K	Observe & Discuss, learn names of objects, sort objects, classify objects	Bug's Eye View forestry.basd.k12.wi.us	2,4	EE A4.1, A4.2, A4.3, A4.4,
4K	Observe & discuss, learn names of bugs, count, sort bugs, classify by type	Ants on the Run forestry.basd.k12.wi.us	2,4	EE A4.1, A4.2, A4.3, A4.4
4K	Observe & discuss, plant & anim. Identification, discuss forest products, seasonal changes, climate change, ecosystem degradation	Little Kids' Scavenger Hunt	1,2,4,5	EE A4.1, A4.2, A4.3, A4.4
4K	Observe & discuss	Visit a Rotten Log	1,2,3,4,5	EE A.4.1, A4.2,

	findings, plant & animal identification, forest products, seasonal changes, climate change, ecosystem degradation	Hotel		A4.3, A4.4
4K	Observe & Discuss, learn about worms & birds, count, sort worms, discuss activity, how yarn may be left to use their nest.	Squirmy Wormy Trail forestry.basd.k12.wi.us	2,3	EE A4.1, A4.2, A4.3, A4.4
4K	Recreational-outdoor game, gross motor skills	Itsy Bitsy May I? education.com	3	EE A4.4
Kindergarten	Science/Literacy	Signs of Spring	2,4	A.4.1, A.4.2, A.4.4
Kindergarten	Science	Waggle Dance	2	A.4.2,A.4.3,A.4.4
Kindergarten	Science	I Looked in a Tree	4	A.4.1,A.4.2, A.4.3,A.4.4
Kindergarten	Science/Math	Digital Algebra	1	A.4.1,A.4.2, A.4.3,A.4.4
Kindergarten	Science/Math	Patterns and Shapes in Nature	1	A.4.1,A.4.4
Kindergarten	Science	Spider Web	2	A.4.1,A.4.2,A.4.3
Kindergarten	Science/Math	Forest Counting Book	1,2	A.4.1,A.4.4
Kindergarten	Science/Literacy	Signs of Fall	4	A.4.1,A.4.2
Kindergarten	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
First	Science, Math	A Snap of Time – My Tree in the Fall	2	A.4.2,A.4.4
First	Lang. Arts, Science. Soc. St.	Buffalo Stomp – Plant a Prairie	1,2,4	S-F4.1,A.4.1, C.4.2,EE-A.4.1, B.4.4
First	Language Arts	School Forest Language Experience Activity	3	A.4.4,LAB.4.1
First	Science, Reading, Writing	My Five Senses in the Forest	3	A.4.4
First	Science , Math	A Snap of Time – My Tree in the Spring	2	A.4.2, A4.4
First	Science	Food Chain Game	2	B4.1
First	Science	Scavenger Hunt	2	A.4.1, A.4.2
First	Science, Math	Just a Little Sprout	1,2	A.4.2
First	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
Second	Science, Math	Birds and Worms	2	C.4.5, C.4.6, C.4.7, EE-A.4.3, EE-B.4.6

Second	Science	Forest Scavenger Hunt	2	D.4.2, EE-B.4.4
Second	Science	Habitat Lap Sit	2	F.4.1, EE-B.4.4, EE-B.4.6
Second	Science	Pond Observation	2	F.4.1, F.4.3, EE-B.4.1, EE-B.4.4, EE-B.4.6
Second	Science	Forest Observation	2	C.4.1, C.4.2, F.4.2, F.4.3, F.4.4, EE-A.4.1, EE-A.4.2, EE-F.4.4, EE-B.4.4, EE-B.4.6
Second	Science	Tree Identification	2	A.4.2, B.4.1, C.4.1, C.4.6, EE-A.4.1, EE-A.4.2, EE-A.4.4
Second	Science	Find a Habitat	2	F.4.1, EE-A.4.2, EE-B.4.6
Second	Science	Oh, Deer	2	F.4.1, F.4.2, EE-B.4.1, EE-B.4.4, EE-B.4.6
Second	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
Third	Science	Pond Life Study, Pond area, Spring & Fall	1,2,3,5,7,9	S-A.4.2, C.4.1, C.4.2, C.4.6
Third	EE Science Art	Bark rubbings Spring	2	EE-A.4.1 S-F.4.4 A-H.4.1
Third	Science	Leaf Study Fall	2	S-A.4.2, F.4.2. B.4.1, C.4.1
Third	Science	Butterfly Expedition	2	S-C.8.1,E.8.1, F.4.4
Third	Science EE	Alphabet Search	3, 4	EE-B4.8, S-C.4.1, F.4.4, F.4.3
Third	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
Fourth	Science, Math	Growth Rings	1, 4	SA.4, C.4, MA.4 B.4
Fourth	Science	Hug a Tree	3	EE-A4.1
Fourth	Science	Bluebird Houses	2	EE-A4.1, A4.2
Fourth	Science, Lang. Arts	It Does What?	2, 3, 5	SC.4, E.4, F.4, EB.4, C.4, EE-A.4
Fourth	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
Fourth	Science	Seed Need	2,3	EE-A4.1, A4.3

Fourth	Science, Math	Comparison of Trees	2	EEB4.8, MA.4
Fourth	Science, Math	Tree Measurement	2	EEA4.2, MA.4
Fourth	Science, Math	Where's My Tree?	3, 5	SA4, C4, G4-MA.4, B4, C4, D4
Fourth	Science, LA	Tree Identification	2	EEA4.2, LA-B4.1
Fourth	Science, EE	Web of Life	2	EEB4.1, Science F8.9
Fourth	Science	Tree Chain Game	2	SB4, EEB4.1
Fourth	Science, LA, PE	Scavenger Hunt	1,2	EE4.1
Fourth	Science	Finding/Gathering Seeds	2	EE4.2
Fifth	Math, Science	Tree Identification	2, 3, 4, 5	MA8.1, A8.2, E8.1,SF8.9, A8.1
Fifth	Lang. Arts, Science	Topographic Maps	1, 2, 3	LA-A8.3, A8.4, B8.2 Science B8.2, B8.4, E8.1
Fifth	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
Sixth	Language Arts Science	Back from the Argentine	2	LA-B.12.2, S-3.B
Sixth	Language Arts Social Studies	Great Possessions	2	LA-D.8.7, G.8.1-8.3, SS-H8.2
Sixth	Science Math	Studying forest layers	6	S-F.8.9
Sixth	Science Math	Tree Identification	6	S-F.8.3
Sixth	Language Arts EE	Students will read the September/October essays from A Sand County Almanac and reflect on the readings	5	EE-C.8.3
Sixth	Lang. Arts/Writing	Journal Observations	2	LA-W-B.4.1
3-6	G & T	Scientific Research projects	5	S-F.4.4, F.8.8
All Grades	Reading	Read a book in nature about nature	2	R-A.8.1, A.8.4

Staff Development

Several professional development opportunities will be provided for district staff.

Topic	**Date**	**Location**	**Presenter**
Present Education Plan	Fall, 2010	Boscobel Elementary School	School Forest Committee
Earth Day Educational Activities	Spring, 2011	Paul Brandt School Forest	Earth Day presenters
Educational Activities	Summer, 2011	Paul Brandt School Forest	LEAF personnel
Offer Project WILD, KEEP, PLT Courses	Summer, 2012	Paul Brandt School Forest	Project Instructors

Resources

Resources available: As of August, 2010.

People

DNR forester and wildlife biologist	Mississippi Valley Conservancy Staff
School Forest Committees	Wisconsin Prairie Enthusiasts
LEAF Program Staff	Upper Mississippi River National Wildlife and Fish Refuge
Crawford County Land Conservation Office	

General & Educational

Small Collecting Containers (10)	Insect Nets (10)
Clipboards (100)	First Aid Kit (1)
Topographic maps of school forest (10)	

Misc…

Garden Hose	Leopold Benches (1)

Books

Animal Track ID (1)	Hawks of N. America (1)
Snake of Wisconsin (1)	Amphibians of Wisconsin (1)
Forest Trees of Wisconsin (3)	The Tree ID Book (2)

Resources needed

People

Parent and Community Volunteers	Master Gardeners
Pheasants Forever	Wings Over Wisconsin
White Tails Unlimited	Turkey Federation

General & Educational

Large Magnifying Glasses (15)	Large Collecting Containers (18)
Small Magnifying Glasses (15)	Small Hand Lenses (25)
Soil Test Kits (1)	Magnifying Boxes (3)
Orienteering Kit w/ 20 Compasses	Small Collecting Containers (10)
Refracting Telescopes (2)	Binoculars (15)
Cordless Microscopes/accessories (2)	Animal Track Stamp Kit (1)
Animal Track ID Scarf (5)	Wash Tubs (2)
Animal track molds (at forest)	Measuring tape (6)
Hand Shovels (10)	Bug Boxes (15)
Soil Sampling Tubes (6)	Increment Borer (2)
Pudgy Pie Makers (3)	Rain Coats (25 various sizes)
Pairs of Boots (25 various sizes)	Hip Waders (4)
Dutch Ovens (3)	Pond nets (10)
GPS Units w/Batteries (15)	First Aid Kit (1)
Digital camera (3)	Digital movie camera (1)
Laptop computer(1), printer(1), ink, paper	Thermometers (water, air, and soil)(10)
LCD projector	Screen
Snowshoes (30)	Plastic storage containers

Stop watches (5)
Tiller
Nature posters
Water testing kits
Dissecting kit
Scissors
Various types of paper
Garden tools (trowls, hoes, forks, shovels etc.)
Study skins
Live traps
Rulers
String
Glue

Misc…

Refrigerator
Landline Telephone
Bunks with Mattresses (34)
Picnic Tables (6)
Tractor with mower and plow
Hand pruners
Bow saw
Safety goggles
Microwave
Garden Hose
Tables (10) and Chairs(25)
Leopold trail benches (6)
Lawn mower
Loppers
Chain saw
Cell phone

Books

Animal Track ID (3)
Nat. Audubon Society Tree ID (3)
Nat. Audubon Society Herps. ID (3)
Nat. Audubon Society Mammal ID (3)
Nat. Audubon Society Invertebrates (3)
Wildflower ID (2)
Shrub ID (2)
Forest Trees of Wisconsin (3)
Turtles and Lizards of Wisconsin (1)
Great Lakes Trees and Flowers (2)
Great Lakes Birds (2)
Field Guides (student) (10each)
Life in a Bucket of Soil (1)
Nat. Audubon Society Bird ID (1)
Hawks of N. America (1)
Kids Book of the Night Sky (1)
Mushrooms (2)
Snake of Wisconsin (2)
Amphibians of Wisconsin (3)
Guide to Common Wildflowers (2)
The Tree ID Book (2)
Great Lakes Wildlife (2)
Multi media resources (videos, DVD's,

Facilities

Permanent bathrooms
Storage shed
Trails
School Forest Sign
Marker signs for plants
Amphitheatre (outdoor)
Educational/nature center/4 season/Solar
Trail Signs
Parking area
Fencing
Display areas
Fire pit

Assessment

An on-going success of the school forest program will be assessed at the end of each school year using the following methods:

- Annual surveys of teachers to determine usage, updated wants and needs, and the value of the forest to their curriculum.
- Keeping track of the number of classes that utilize the forest for educational purposes.

- Development of student surveys of environmental knowledge.

The results of these evaluations will be monitored by the School Forest Committee and School Forest Coordinator. The School Forest Committee meets monthly and receives updates regarding any activity that has taken place on the school forest site. The members of this committee will work to make necessary changes to the management and educational plans as needed.

Sustaining the School Forest Program

Paul Brandt School Forest Committee (PBSF)

1. Ruth Bauer, School Forest Coordinator, Art Teacher, Boscobel Elementary School(BES), Grades K-6
2. Dr. Steve Smith, Boscobel Area Schools Superintendent, 4K-12
3. Rick Walters, Boscobel Elementary School Principal, ECH/4K-6
4. Greg Bell, Boscobel High/Middle School Principal, 7-12
5. Nancy Sanger, Speech Pathologist, BES
6. Joy Walker, Sixth Grade Teacher, BES
7. Susan Beck, Fifth Grade Teacher, BES
8. Deb Wagner, Fourth Grade Teacher, BES
9. Rich Buchholz, Third Grade Teacher, BES
10. Penny Bohringer, Second Grade Teacher, BES
11. Karen Weber, First Grade Teacher, BES
12. Beth Novinska, First Grade Teacher, BES
13. Shaun Wittrig, Kindergarten Teacher, BES
14. Tomi Ann Gebhard, Four Year Old Kindergarten, BES
15. Ben Johnston, Art Teacher, Boscobel High School/Middle School (BHS/BMS), Grades 7-12
16. Mari Sue Bethke, Language Arts Teacher, BHS
17. Jeff Ostheimer, Agri-Science Teacher, BHS, BMS
18. Jeff Novinska, Techanical Education Teacher, BHS/BMS

Paul Brandt School Forest Committee responsibilities are:

- Financial aspects
- Site development and maintenance, e.g., facilities, trails, educational materials
- District personnel structure, e.g., who is the school forest coordinator, who has responsibilities for grounds
- Committee personnel review –responsible for ensuring diverse representation is maintained
- Incentives/support for on-going involvement/utilization of school forest
- Education plan review annually (update every 3-5 years)

Paul Brandt School Forest Advisory Committee

1. Ruth Bauer, School Forest Coordinator, Art Teacher, Boscobel Elementary School(BES), Grades K-6
2. Dr. Steve Smith, Boscobel Area Schools Superintendent, 4K-12
3. Rick Walters, Boscobel Elementary School Principal, ECH/4K-6
4. Greg Bell, Boscobel High/Middle School Principal, 7-12
5. Nancy Sanger, Speech Pathologist, BES
6. Jeff Ostheimer, Agri-Science Teacher, BHS, BMS
7. Janet Mindham, Para Educator, BES
8. Neal Brandt, Community Member
9. Don Brown, Boscobel Area Schools Board President

10. Cindy Kohles, WDNR Forester
11. Russ Hagen, Crawford County Land Conservationist
12. Abbie Meyer, Mississippi Land Conservancy
13. Dan Goltz, WDNR Wildlife Biologist

Paul Brandt School Forest Advisory Committee responsibilities are:

- Threats to & opportunities for the school forest program
- Management plan review annually (update at least every 10 years)
- Site development and maintenance, e.g., facilities, trails, educational materials
- Monitor health of forest

Communication

- The district will host an annual Earth Day and a Family Fun Night with community and school members presenting.
- Presentations about activities at the school forest will be made at least 1 time per year to the school board.
- Information will be shared with the Boscobel Dial, Boscobel School District online newsletter for all "milestones" at the school forest including community involvement, teacher training, and restoration project completions.
- The district will hold in-service training for teachers to become more familiar with the school forest site and curriculum as needed.
- Begin development of a School Forest web page which is linked to the Boscobel School District site.

Long-Range Plan

To fulfill our vision for the use of the school forest, we have identified the following goals for the school forest committees:

- Train teachers and assistants to feel comfortable teaching students in the outdoors.
- Create a plan for transportation to and from the school forest.
- Create a plan for educational shelter/permanent bathroom facilities and a parking area at the school forest.
- Develop a school forest curriculum for students to maximize learning at the school forest.
- Create informational signs.
- Maintain teaching stations and provide activities, signs and materials to enhance the learning of a particular feature of that station.
- Continue to manage the school forest by controlling invasive species, planting new habitats, and managing wildlife to optimize the diversity and health of the site.
- Allow opportunities for every elementary student to visit the School Forest at least two times yearly.
- Purchase supplies and materials to be used when implementing activities at the School Forest.

Implementation plan

Event/Activity	2010-11	2011-12	2012-13	2013-14	2014-15
In-service teachers and assistants	X	X	X	X	X
Transportation plan	X				
Permanent facility plan	X	X	X		
Building permanent facility				X	

Curriculum draft completed	X				
School forest signage	X	X			
Teaching station development		X	X		
Manage school forest land	X	X	X	X	X
School forest visits by students	X	X	X	X	X
Purchase supplies	X	X		X	

In-service
Primary Activities:

- Arrange with district for in-service dates and times

Resources:

- Seek funding for tuition/stipends where possible
- Meeting location at school

Transportation Plan
Primary Activities:

- School Forest Committee members consult with school board, administration, and transportation director to establish plan for ongoing transportation to and from the school forest

Resources:

- Establish funding for busing

Facilities
Primary Activities:

- School Forest Committee will collaborate with Boscobel School Board to develop plans for permanent bathrooms, educational shelter, and parking lot

Resources:

- Collaboration with school board for funds
- Ongoing grant writing

Curriculum development
Primary Activities:

- Fulfill WEEB grant requirements
- Binders will be created that contain the Education and Management plan, grade specific lessons and optional activities for grades 4K-6.
- Presentation to Board in October 2010.

Resources:

- Staff in-service time
- Tuition/Stipends where possible
- State curriculum standards

Forest Upkeep and Development
Primary Activities:

- Trail Maintenance
- Invasive Species Control
- Trail Sign Creation and installed

- Teaching station creation

Resources:
- Purchase tools and appropriate supplies
- Students, staff and community assistance
- Financial support through continued fundraising and grant writing
- Build benches and tables for pods

School Forest Use

Primary Activities:
- Each school year, all elementary students will have a minimum of two opportunities to visit the School Forest

Resources:
- Coordination of schedules
- Busing
- Curriculum plan and materials

Management of land

Primary Activities:
- Manage the school forest by controlling invasive species, planting new habitats, and managing wildlife

Resources:
- Funding
- Seeds
- Tools and equipment
- School and community manpower and assistance

District commitment

In 2009, the Boscobel Public School District Board of Education made a commitment to the Paul Brandt School Forest through supporting and endorsing a Wisconsin Environmental Education Board School Forest Grant for $4,920.00 with a substantial match from the district.

The Boscobel School Forest Education Plan will be presented to the Boscobel School Board in October of 2010 for approval.

Produced under a 2008-2010 grant from the Wisconsin Environmental Education Board

References

Wisconsin Model Academic Standards. Wisconsin Department of Public Instruction

L:ieberman and Hoody. Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning. 1998

Cindy Kohles, forester (personal communication) Wisconsin Department of Natural Resources, Wilson Nursery

Web site: www.usgennet.org/usa/wi/county/crawford/history/chap34.htm

Web site: digicoll.library.wisc.edu/cgi-bin/SurveyNotes/SurveyNotes-idx?type=article&byte=3

Dan Goltz, Wildlife Biologist , (personal communication) Wisconsin Department of Natural Resources, Wilson Nursery

Russ Hagen, Crawford County Land Conservationist (personal communication)

Abbie Meyer, Mississippi Valley Conservancy (personal communication)

LEAF, UW-Steven's Point

UW-Arboretum, Earth Partnership for Schools

Appendix A

Name(s) and Address of Landowner(s):

Paul Brandt School Forest
Boscobel Area School District
1110 Park Street
Boscobel, WI 53805

County: **Crawford**

Town Name: **Scott**

Town: **9N,** Range **3W,** Section(s) **34**

Total Plan Acreage: **80**

Plan Length: **25 Years**

Attached maps show the location Stewardship Forest Lands.

Landowner Objectives for Management:

Maintain healthy woodland containing diverse plant species and providing for long-term wildlife habitat. Convert portions of the existing agricultural land to: pine plantation, oak savanna, orchard, garden patch (for pumpkins or more), tall grass prairie, and wildflower garden. Retain some of the existing agricultural land for agricultural use that meets Mississippi Valley Conservancy requirements. Develop a vegetative screen between the agricultural area and woodland and educational pod areas. Facilitate use of the property as an educational resource by developing a parking area, equipment storage building, indoor classroom area, outdoor learning pods, improved walking trails, and restroom facilities.

KEY TO FOREST COVER TYPE SYMBOLS

Productive

A	Aspen
BH	Bottomland Hardwoods
BW	White Birch
C	Cedar
CH	Central hardwoods, locust
FS	Fir-spruce, white spruce
MR	Red Maple
NH	Northern Hardwoods
O	Oak
OX	Scrub Oak
PJ	Jack Pine
PR	Red Pine, Scotch Pine
PW	White Pine
SB	Black Spruce
SC	Swamp Conifer
SH	Swamp Hardwood
T	Tamarack

Non-Productive or Non-Forest

AX	Off-site Aspen
F	Farmland/crop land
FG	Grazed Pasture
G	Grass
GH	Herbaceous vegetation
GLS	Low growing shrubs
I	Residential or commercial
IA	Parking Area
ICG	Campground
K	Keg/marsh
KB	Muskeg bog
KEV	Emergent Vegetation
KG	Noncommercial lowland grass
KH	Noncommercial Herbaceous vegetation
L	Lake
LB	Lowland Brush
LBA	Tag Alder
LBB	Bog Birch
LBD	Dogwood
LBW	Shrub Willow
LM	Minor Lake
LMS	Minor Stream
O/	Other Ownership
P	Pasture
ROW	Right of Way
SX	Noncommercial Swamp
SXC	Noncommercial Cedar
SXSB	Noncommercial Bl. Spruce
SXT	Noncommercial Tamarack
UB	Upland Brush
Z	Rock Outcrop

W Wooded (one or more types)

Key to Size Classes (tree diameters in inches):

0-1"…Seedlings **1-5"… Saplings** **9-15" or 11-15" Small Saw-timber (Conifers or Hardwoods)**
5-9" or 5-11" ..... Pole-timber (Conifers or Hardwoods) **15+".....Large Saw-timber**

Key to Stocking Levels (symbols shown by superscripts after the size class, ex. 5-11^2):

Pole-timber = Pulpwood products, Saw-timber = Sawmill logs

Symbol	Density	Volume (Basal Area)				
		Pole-timber	Small Saw-timber	Large Saw-timber	Seedlings per acre	Saplings per acre
1	Poor	10-40	10-40	10-40	200-600	100-300
2	Medium	41-80	41-80	41-80	601-1,500	301-900
3	Good	81-130	91-130	81-130	1501+	901+
4	Very Good	131-180	131-180	131-180		
5	Excellent	180+	180+	180+		

County Cutting Notice (Section 26.03, Wis. Stats.):

A written declaration must be filed with the County Clerk prior to cutting any forest products.

Forest Management Assistance:

Your DNR Forester, as well as Cooperating Consultant Foresters, are available to assist in the implementation or establishment of all forest stewardship practices outlined in your Plan**. It is highly recommended that you seek the assistance of a professional Forester before cutting any harvestable timber, both to assure that the timber is cut within sound management guidelines and to protect your financial interests.**

Forest Ecology of General Landscape

Landscape Features

The acreage covered by this plan is located in southeastern Crawford County. The area is typical of the driftless area of southwestern Wisconsin, an area not scraped by the last continental ice sheets. Broad, rolling hills and steep sided valleys give a rugged character to the landscape. The wooded hillsides are intermixed with cropland and grazing land on the ridge tops and valley floors. In general, the soils are wind deposited, silt loams. The shallower soils tend to be droughty, and on steep slopes, the potential for erosion is high. Rock outcroppings of dolomitic limestone and sandstone are common along major stream corridors and tributary drainages. Nonetheless, the soils and local climate generally are conducive to producing high quality hardwood timber.

The conservation value of the driftless area is significant. A high concentration of the Midwest's floral and faunal diversity is found here. The local area is known for its scenic quality and ability to grow high quality hardwoods. Large wooded blocks provide habitat for migratory songbirds. Numerous other game and non-game species reside in the area.

Soils Information

The USDA Soil Conservation Service classifies the woodland soils on your property generally as:

- **Dubuque silt loams** (the bulk of the soil in the area covered by this plan including almost all the woodland area and more than three-fourths of the agricultural land),
- **Fayette silt loam** (the south-facing slope in the vicinity of the pond and due east of the pond for about one-half the width of the agricultural ground)

The locations of the specific soil types are shown on the enclosed soil map, Appendix A.

The **Dubuque silt loam** is found on slopes from 2 to 45 percent on the property. The soil is moderately eroded but still deep on the agricultural land, in a narrow strip north of the southern trail into the woods, and in a small wedge-shape along the wooded north property line. Where more of the soil depth has been lost to erosion, the moisture holding capacity will be less. The clay layer found above the limestone bedrock tends to include cherty fragments on portions of the south-facing woodland slope. All your Dubuque soils have the capability of producing timber at good growth rates.

The **Fayette silt loam** is found on slopes of 6 to 20 percent. Erosion has removed as much as two-thirds of the surface layer of the soil. The soil is moderately high in fertility and moisture holding capacity. The Fayette soil has slightly higher estimated annual yields of hardwood timber than the Dubuque soil. This area is best managed for timber.

Educational opportunities related to soils include making mud pies, comparing critters found in the soil in the woods with those found in the grassland soil, and examining soil samples taken from different portions of the property (this can range from comparing soil colors, textures, and temperatures or discussing the human senses for younger students to examining the moisture holding capacity and nutritive value of different soils for more advanced students).

Endangered and Threatened Plant and Animal Species

No endangered or threatened species are known to be present on your property. Suitable habitat for a number of rare prairie plants and insects whose presence has been documented in the vicinity exist

here. If rare species are identified, you should take steps to protect individual specimens and preserve their habitat.

As you move forward with plans to establish your tall grass prairie, moist area grassland, and wildflower patch, you could consider planting specimens of some of the rare plants (prairie Indian plantain, marbleseed, wild quinine, flat-stemmed spikerush) that are suited to conditions on this property.

You may also want to maintain or enhance habitat for bats (because a hibernaculum is nearby) and black rat snakes (because they are fairly common in the area despite being a species of special concern in the state). Both these species will benefit from having rough-barked trees (old red oak or shagbark hickory) kept in the stand. The bats would also benefit from retaining or developing trees with cavities high above ground level.

One educational opportunity would be to have advanced students choose a plant or animal species that is rare but native in Wisconsin, identify the habitat that it needs, determine if suitable habitat is present on the School Forest property, look for that species if suitable habitat that exists, and discuss how the habitat and individual species found could be protected. This could be coupled with discussions of now-extinct Wisconsin species (i.e. the passenger pigeon), causes of extinctions or population declines, economic and social implications of changes in species populations, and successful recovery efforts for species such as the bald eagle.

Cultural and Historical Resources

No cultural or historical resources are known to be present on the property.

Gypsy Moth

Gypsy moth, an invasive species, is an insect that severely defoliates favored trees, such as oaks, aspens, basswoods, white birches, tamaracks and willows. Pines, spruces, and hemlocks can be defoliated if in proximity to favored hardwoods. Your property includes some tree species that gypsy moth larvae prefer to eat but these trees do not form the bulk of your woodland. Heavy defoliations from gypsy moth outbreaks typically occur about every ten years once populations are established in the area. You can expect to see outbreaks on your property within seven years.

Defoliation of your forest can result in tree death, but it doesn't have to. Mortality is typically the result of multiple stresses occurring together. Defoliation, drought, windstorms, other insects, diseases, over-crowding, and old age are all tree stressors. Managing your forest to keep trees healthy is your best defense in reducing losses from gypsy moth outbreaks. Completing harvests before trees are overcrowded or over-mature will promote vigorous growth and tree health. While beneficial, thinning and harvesting can cause short-term stress, so avoid these practices within two growing seasons of heavy defoliation or drought.

Prior to establishing a harvest or thinning, you should conduct a survey of gypsy moth egg masses. If sampling indicates a density of gypsy moth egg masses greater than 1,000 per acre, you and your DNR forester should discuss delaying harvests or thinnings until the outbreak is past and the trees have recovered. Aerial spraying to suppress an outbreak may be an option for protecting regeneration or high value timber.

Information on gypsy moths, how to predict outbreaks, and the DNR suppression spray program is available from your local DNR forester.

Students can be involved with monitoring gypsy moth populations by looking for and counting egg masses or trapping moths on the property. They can compare the number of egg masses on different species of trees during periods when the population is large.

Exotic Plant Species

One aggressive, exotic plant species—bush honeysuckle-- was found in limited numbers on your property. Bush honeysuckle is a shrub that can grow quite tall and will tolerate even heavily shaded conditions. It leafs out earlier in the spring than native shrubs and retains its leaves until most native plants have lost their leaves in the fall. These characteristics allow it to threaten the existence of many native understory plants, particularly the spring ephemerals. Although many birds eat bush honeysuckle berries (and this is partly why the plant can spread so quickly), your conservation interests will be better served by controlling the spread of this species on your property and allowing native berry bushes to provide soft mast for the birds.

Like other potentially problematic species, the bush honeysuckle is most easily controlled by preventing its establishment in large areas. Currently you have an excellent opportunity to limit the bush honeysuckle spread *within* the property.

Educational opportunities include: discussing migration generally; listing plants or critters that kids like or dislike and determining whether they are native or non-native, beneficial or problematic; exploring how and why people intentionally or unintentionally move other species around; and exploring why cooperative efforts between landowners can provide the best control results. Woodworking, metalworking and art classes could join in the effort of making a shoe cleaning device and signage to encourage visitors to leave dirt on the property so they don't spread any exotic seeds they may be carrying unintentionally.

Best Management Practices for Water Quality

The Wisconsin Department of Natural Resources (DNR) strongly encourages all forest landowners to use Best Management Practices (BMPs). BMPs are recommended for control of non-point pollution, which adversely affects water quality. Non-point pollution occurs when surface water runoff from rain or snow melt moves across or into the ground picking up and carrying pollutants into streams, lakes, wetlands or groundwater. Sediments are the primary pollutants associated with forestry activities. While they account for three percent of the state's non-point source pollution, careful planning of forest management activities, such as road construction, timber harvesting and site preparation will minimize non-point source pollution.

Wisconsin DNR Foresters and private consulting foresters can assist you in implementing a comprehensive plan that uses BMPs to maintain our state's high water quality standards. The easiest way to ensure that erosion does not become a problem and jeopardize your stream water quality or recreational use of the property is to follow these BMPs.

General recommendations for protecting soil and water quality are:

- Conduct harvesting operations on dry or frozen ground.
- Design roads and trails to limit the grade to less than 10%. Optimal road/trail grades should be less than 5%.

- Grade all logging roads and trails so water runs off the surface. Preventing erosion will be easiest if roads and trails slope out. Where they are sloped in, cross drains will be needed to allow water from the roadside ditch to move toward the downhill side of the road. Install drainage structures (cross-drains, broad-based dips, waterbars, and other water diversion structures) as needed to minimize erosion and disperse water.
- Avoid construction of roads and trails in wetlands or drainage bottoms.
- Remove from wetlands and waterways all slash that has fallen into them from timber sales.
- Obtain necessary permits for any alteration to wetlands or waterways.

Educational opportunities include comparing basic water quality characteristics (turbidity, pH, oxygen content) of the pond with water from other local sources, catching and counting/identifying critters in the water, thinking about what critters use the water and in which ways, painting/drawing water surface textures/colors/reflections, discussing the impact of water on location of human settlements.

CURRENT VEGETATIVE TYPES

What follows are descriptions of the various stands on your property along with recommended practices that will help you produce better quality timber or meet your non-timber objectives for the property. Stands are groups of vegetation sufficiently uniform to be a homogeneous and distinguishable unit. In stands of trees, species composition, stocking level, age, and tree condition are considered while determining homogeneity. By program definition, unique areas must be at least two acres in size to be designated as stands. In the case of your property, there is considerable variation within some stands. This plan includes four stands.

Note that changes to this plan may be necessary if unanticipated natural events such as windstorms, fires, floods or lack of tree growth cause this plan to be no longer valid.

Stand 1. O 15+[2] / NH 5-11[2] / NH 0-5[3] 7 Acres
Moderate Stocking Oak Large Sawtimber / Moderate Stocking Northern Hardwood Pole Timber Good Stocking Northern Hardwood Regeneration

Stand Description: Stand 1 includes the northwest corner of the property and a narrow strip close to the western property line in the southern two-thirds of the property. Large diameter red oak trees account for almost three-quarters of the sawlog-sized trees. They form a canopy with scattered, smallsaw-sized white ash, basswood, white oak, sugar maple, shagbark hickory, and elm trees. Sugar maple is the most common species in the pole size class. A wide range of other northern hardwood (basswood, white ash, red maple) and central hardwood species (bitternut hickory, shagbark hickory, red oak, black cherry) round out that size class. Saplings include sugar maple and a fair number of ironwood trees. Because ironwood is a small tree at maturity it has very limited commercial timber value. It casts a dense low shade that prevents regeneration of sun-loving tree species. For those reasons, it is often culled from a stand during timberstand improvement practices. Sugar maple accounts for the vast majority of seedlings.

Currently this stand would yield an average of 6900 board feet and 11 cords per acre. There is fairly significant variation in the volumes from one small area to the next. Some areas are over-stocked; other areas are just fully stocked.

The large red oak trees are generally between 60 and 70 years of age. Given adequate growing space, they should be able to remain healthy for another 30 to 40 years.

Individual tree quality varies considerably. Some trees have enough internal decay that they no longer have any commercial timber value. Other large trees would yield high quality lumber if they were harvested. Some of the black cherry trees and basswood trees are diseased and, in a few cases, may succumb from their diseases.

Stand Objectives: Grow the oak to maturity and then allow the bulk of the stand to convert to northern hardwoods. Retain some oak trees until they die naturally to maintain a diverse woodlands and produce acorns for wildlife. Eventually manage as an uneven-aged stand. Ensure that some cavity trees and snags remain standing and some coarse woody debris over 10" in diameter remains on the forest floor to provide good wildlife habitat.

Stand Prescriptions:

2023: At some point prior to 2023, complete a commercial improvement thinning. The goal of this harvest should be to provide red oak crop trees with a crown release, salvage the commercial value of trees that are damaged or unlikely to survive until the next harvest, and reduce the basal area to an average of 80 to 90 square feet per acre. Complete all BMPs appropriate to protect soil and water quality. Harvest only when trees are dormant so that oak wilt will not be introduced or spread through the stand. Require that logging equipment be free of exotic seed sources (i.e. garlic mustard) before it comes to the property. Have a forester mark the trees for removal.

Anytime: Poor quality trees may be removed from competition with better quality trees by cutting or girdling. To girdle, make two parallel cuts one inch apart clear around the circumference of the tree. The standing dead tree will provide food and shelter for a variety of invertebrates, woodpeckers, and small cavity dwellers. Decaying branches will cause little damage to surrounding live trees as they fall to the ground. For safety reasons, do not girdle trees close to trails or other areas frequented by people. Cut trees can be stacked to provide horizontal shelter for wildlife. Your local forester can provide construction tips for creating wildlife brush shelters.

Educational opportunities unique to this stand include collecting acorns for making acorn flour for use in 4th grade history classes or cooking classes, learning which critters eat acorns, discussing forest progression from shade intolerant to shade tolerant species, comparing the nature of oak leaves with maple leaves.

Stand 2. CH 15+^{3} / NH 5-11^2 / NH 0-5^3 13 Acres

Good Stocking Central Hardwoods Sawtimber / Moderate Stocking Northern Hardwood Pole Timber over Good Stocking Northern Hardwood Reproduction

Stand Description: Stand 2 includes the fringe of woods along the edge of the agricultural land and pond. Roughly equal numbers of red oak, aspen and basswood trees of sawlog size are present along with more widely scattered shagbark hickory, sugar maple, white ash, black ash, white oak, cottonwood, elm and bitternut hickory trees. Sugar maple and basswood are the most common species in the pole size class but a wide variety of other species are present. Saplings and seedlings are dominated by sugar maple.

Currently the stand would yield an average of 8900 board feet and 14 cords per acre. Roughly seventy percent of the stand is already overstocked and that is only partly due to the presence of dense aspen pockets. Tree age and health is generally the same as in Stand 1 except that aspen is a shorter-lived species than oak and it is beginning to decline.

Stand Objectives: While preserving a broad range of species, work to improve the species composition of the stand for timber and wildlife purposes. Keep the best trees growing vigorously by providing them with adequate growing space. Harvest aspen and work toward regenerating pockets of aspen where pocket size may make that possible. Accept that the stand will convert to a northern hardwoods type over time. Identify some large-crowned sugar maple trees as tapping trees and use them for production of maple syrup.

Stand Practices:

Anytime in the near future: Complete the marked timber stand improvement work. Clearcut the aspen pockets. If possible, use the wood from the harvest for construction of facility needs on site or other school projects.

Release desirable tree regeneration south of the drainage from ironwood. Consider leaving a clearly identified area of regeneration with ironwood overtopping it so that growth of released and un-released trees can be compared. Fully release the crowns of the maple trees identified for sap production.

2023: In conjunction with the harvest in Stand 1, complete an improvement thinning that releases the best crop trees (these will be of more diverse species than in Stand 1), reduces the average basal area to between 80 and 90 square feet per acre, and removes trees that are damaged or unlikely to survive until the next harvest. Follow all appropriate BMP for water quality and exotics.

Educational opportunities include comparing the taste of bitternut and shagbark hickory nuts and discussing whether people (and animals) all like the same tastes, collecting basswood pollen for making pancakes, placing bee hives to produce basswood honey, making maple syrup, comparing types of tree regeneration (i.e. aspen's root suckering, oak's stump sprouting and hickory's seeding), comparing growth rates of released and suppressed trees, and general tree and shrub identification during different seasons. A large rock outcrop present in the northern part of the stand provides a unique, tiny ecological niche that could be explored as well as a unique subject for painting or drawing classes.

Stand 3. NH 15+[1] / NH 5-11[1] / NH 0-5[3] 11 Acres

Poor Stocking Northern Hardwoods Sawtimber / Poor Stocking Northern Hardwood Pole Timber over Good Stocking Northern Hardwood Reproduction

Stand Description: This stand includes the remaining wooded acreage. Sugar maple and basswood are the dominant species in the sawlog and poletimber size-classes. Red oak is well represented in the large sawlog size-class. Scattered hickory, cherry, elm, ironwood, and ash trees also are present. Sugar maple is the most common sapling sized tree. Sugar maple, white ash, and bitternut hickory seedlings are present in good numbers. Localized stocking is uneven. Generally, the stand is adequately stocked with only scattered areas being over-crowded. Currently the stand would yield an average of 4900 board feet and 10 cords per acre.

Stand Objectives: Manage as a northern hardwood stand. Use group selection harvests to maintain some species diversity when doing regeneration harvests. Increase the amount of coarse woody debris on the forest floor and maintain or increase the number of cavity trees or snags for wildlife.

Stand Practices:

2010: Complete a light crop tree release to encourage rapid diameter growth of the best immature sugar maple trees and to increase vigor of black cherry trees where their crowns make that appropriate. Have a forester mark trees for removal.

2023: The scattered overstocked areas could be thinned in conjunction with the harvests in Stand 1 and 2. Follow the standard order of removal for northern hardwoods.

Stand 4. GG / GH 49 Acres

Grassland with Herbaceous Plants

Stand Description: This stand includes the grassland currently being cut for hay along with a small area planted to shrubs and trees adjacent to the pond, a few fruit trees and shrubs planted in the vicinity of the windmill, and a small pumpkin patch.

Stand Objectives: Stand objectives currently include: enlarging the pumpkin patch so it can produce more pumpkins and possibly more diverse garden produce; creating a parking place in the southeastern corner of the property, construction of a small equipment storage shed (near future) and larger equipment storage facility/indoor classroom (long-range), plantings that include a prairie, oak/chestnut savanna, traditional pine plantation, native flower patch, butterfly garden, maintaining or expanding a bluebird trail, maintaining a sledding hill, and planting vegetative screening between the agricultural area and the learning pod trail. At present it is anticipated that a portion of this stand will remain actively used agricultural land of some sort. Specific allocations of portions of this stand to different uses will be made over a period of years as options are explored and developed. Seek assistance from appropriate public and private resources as you move forward with implementing specific objectives.

Oak/chestnut savanna: Plant American chestnut, white oak, red oak, bur oak seedlings or nuts. Plant trees roughly 30 feet apart. This will provide ample sunlight for native grasses and forbes to grow beneath the trees' canopy and ultimately will produce a fairly closed canopy savanna. Provide tree seedlings with a release from competitive vegetation until they are dominant over the surrounding grasses. As needed, protect the seedlings from rodent and deer damage.

Pine plantation: Prepare for tree planting in desired portions of the stand. I recommend planting at least two acres. Mow the planting site late in the summer. Decide if you will apply an herbicide to the rows that will be planted in the fall or in the spring. For the current vegetation I recommend the use of RoundUp (to kill perennial grasses and tough perennial herbaceous plants) and Oust (to minimize germination of broadleaf weeds); but, changes in vegetation and herbicide labeling could make other options more appropriate at the time of planting. When using herbicides, follow all label instructions so as to not risk contamination of ground water. In the fall, order trees for the planting. Order 680 white pine 3-0 seedlings per acre that you will plant.

In the following spring, plant trees on a rough 8' X 8' grid. Maintain the free-to-grow status of planted seedlings until they are dominant over the surrounding vegetation. Conduct annual survival checks to determine if any replanting is needed.

Control deer and rabbit damage by increasing hunting pressure, applying commercial or homemade repellants or establishing physical barriers that protect at least the top buds on conifers.

Twenty years after planting, have a forester look at the stand to determine if a thinning is appropriate. If so, complete a thinning as prescribed by the forester at that time.

Vegetative Screening: After a decision about the boundary between agricultural lands and the learning pod trail has been made, plant screening vegetation. I suggest that this screening include one continuous row of white pine adjacent to small pockets of denser conifers (white spruce, Norway spruce, or white cedar) and stretches of small wildlife trees (hawthorn, wild crabapple, wild plum) followed by another continuous row of mixed shrubs (red osier dogwood, hazelnut, highbush cranberry, arrowwood, elderberry) that are unlikely to aggressively invade your prairie (or proposed prairie) area. Gray dogwood is not recommended for this area because of its tendency to spread readily.

Moist grassland, tall prairie, and wildflower plantings: Use resources such as Prairie Enthusiasts, Natural Resource Conservation Service, US Fish and Wildlife, Mississippi Valley Conservancy, county conservationists, and knowledgeable volunteers from the Master Gardeners program and area arboretums to help you plan (and perhaps fund) some of your work.

Prepared by: **Cynthia A. Kohles, Forester Ranger**

Wilson State Nursery
PO Box 305
5350 Highway 133 East
Boscobel, WI 53805

ORDER NUMBER	State of Wisconsin Dept. of Natural Resources	MADISON OFFICE USE ONLY
Co. Code/Seq. No./Yr. of Entry	MANAGED FOREST LAW MAP Form 2450-133 Rev. 04/03	Acreage Entered

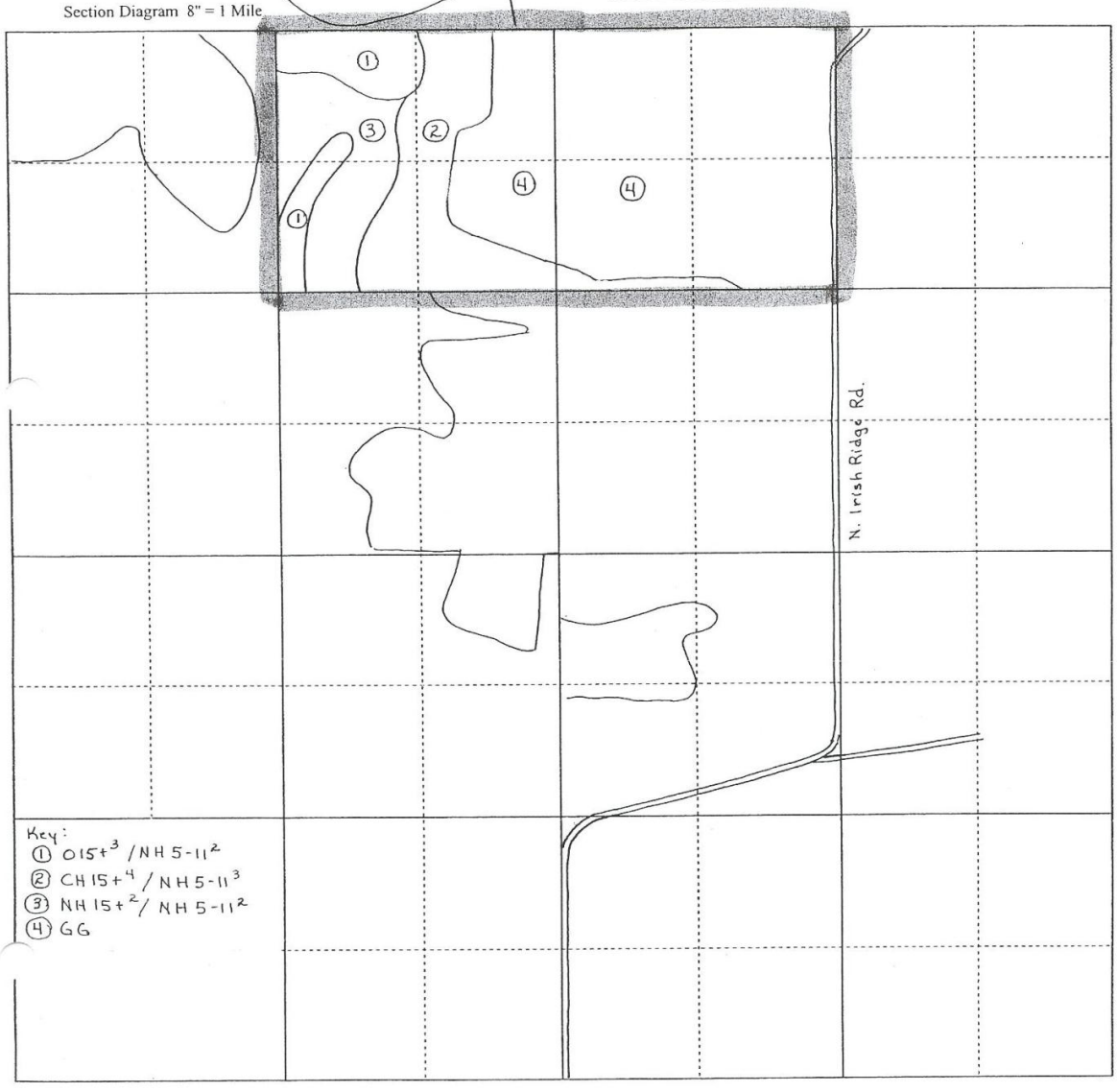
Owner's Name	☐ Multiple Owners	Town or Village Name	County
Boscobel School Forest		Scott	Crawford

Township #	Range #		Section	Open Acres	Closed Acres
9	3	☐ East ☒ West	34		

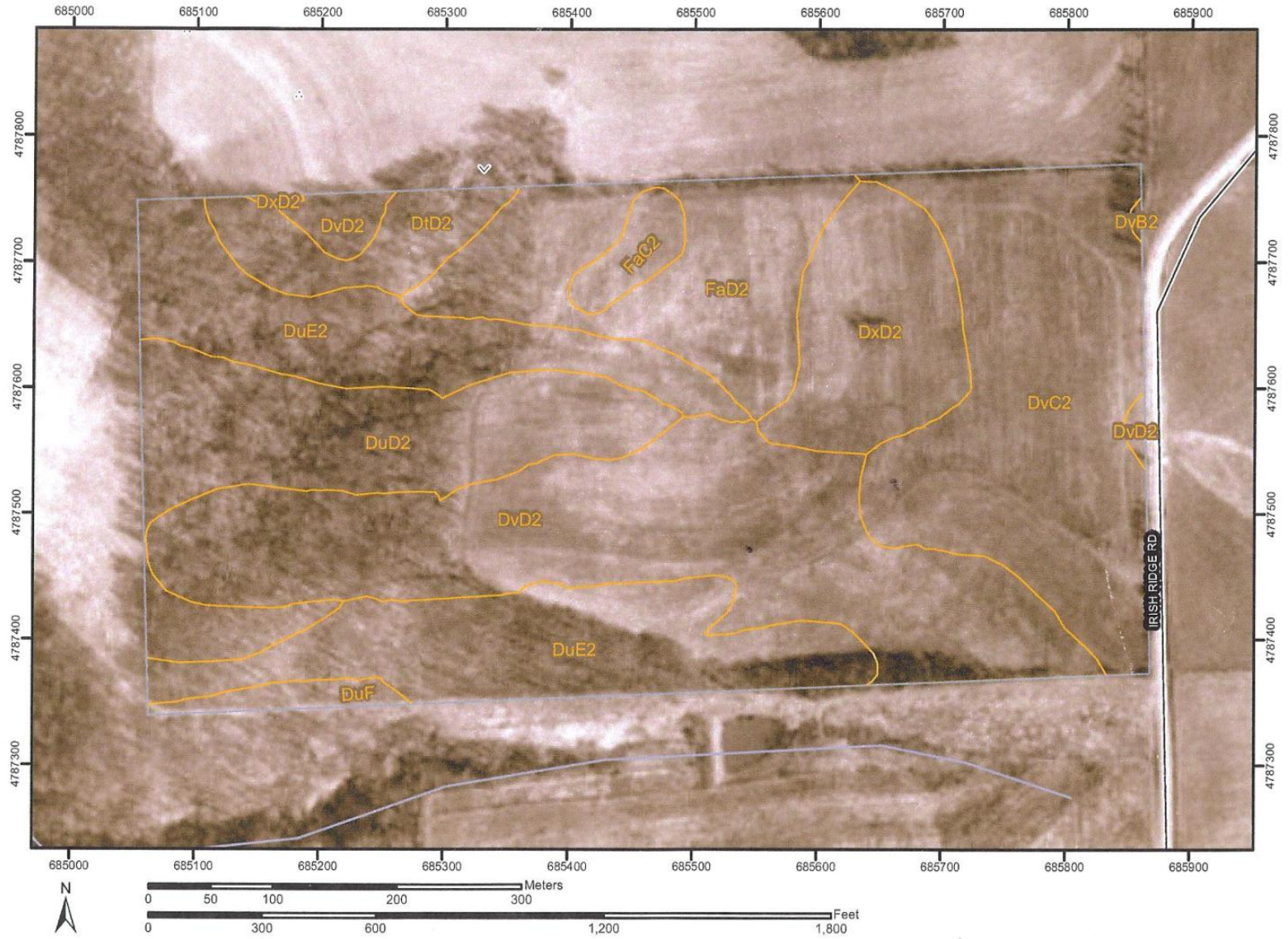
LEGEND: Closed Area ▨ Open Area ☐ N

Prepared By: C. Kohles Date:

Section Diagram 8" = 1 Mile



Soil Map–Crawford County, Wisconsin
(Brandt Forest)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features

Municipalities
- Cities
- Urban Areas

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails

Roads
- Interstate Highways
- US Routes
- State Highways
- Local Roads
- Other Roads

MAP INFORMATION

Original soil survey map sheets were prepared at publication scale. Viewing scale and printing scale, however, may vary from the original. Please rely on the bar scale on each map sheet for proper map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 15N

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Crawford County, Wisconsin
Survey Area Data: Version 4, Nov 2, 2006

Date(s) aerial images were photographed: 1999

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Crawford County, Wisconsin (WI023)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DtD2	Dubuque cherty silt loam, 12 to 20 percent slopes, moderately eroded	2.9	3.6%
DuD2	Dubuque silt loam, 12 to 20 percent slopes, moderately eroded	10.3	12.7%
DuE2	Dubuque silt loam, 20 to 30 percent slopes, moderately eroded	16.4	20.3%
DuF	Dubuque silt loam, 30 to 45 percent slopes	0.9	1.1%
DvB2	Dubuque silt loam, deep, 2 to 6 percent slopes, moderately eroded	0.1	0.1%
DvC2	Dubuque silt loam, deep, 6 to 12 percent slopes, moderately eroded	15.1	18.6%
DvD2	Dubuque silt loam, deep, 12 to 20 percent slopes, moderately eroded	19.7	24.3%
DxD2	Dubuque soils, deep, 12 to 20 percent slopes, moderately eroded	6.1	7.6%
FaC2	Fayette silt loam, uplands, 6 to 12 percent slopes, moderately eroded	1.2	1.4%
FaD2	Fayette silt loam, uplands, 12 to 20 percent slopes, moderately eroded	8.4	10.4%
Totals for Area of Interest (AOI)		81.0	100.0%