



THE BLUE MOUNDS PROJECT

Seeking to Inspire, Inform and Empower Private Landowners in the Southwestern Region
Of Wisconsin to Enjoy, Protect and Restore Native Biodiversity and Ecosystem Health

Fall 1999

Message From the Board

Carroll Schaal, President

Dear Members,

Happy Fall to everyone, from the Blue Mounds Project! I'm sure for many of you this is your favorite season. The colors, smells and crisp air are a wonderful time to enjoy the outdoors. But where did that summer go?

Fall can be a time for reflection and planning. A time to visit remnants and collect seed for spring planting projects. As we wind into winter the Board is planning and working to secure "seeds" to keep the project going next year. Two main grants from the Laird Norton and Madison Community Foundations, that have sustained our project for the last two years, are running out. We are writing reports and new grant applications; reflections and seeds.

Grants have provided about 85% of your Project's funding so far. Your dues and donations are also important for two reasons. They provide "hard" cash to use as match money for grants and they demonstrate public support and belief in our work. We appreciate your dues and we try to remind you occasionally when they may be due in the hope you will renew. However, dues alone aren't enough.

The Board feels we need to secure multi-year, long term support and not live grant to grant, year to year. We are ready to "swing" for the fences and we are developing some aggressive proposals to submit to foundations and government agencies. To do this we need your support. Please renew your membership if you haven't already and consider making an additional donation. I hate asking for money and I only want to make one special appeal a year.

Fortunately, this year it's very easy because an anonymous, generous project member has offered \$1,000 as a challenge. Yes, if we raise \$1,000 in donations from all of you by the end of this fiscal year our silent benefactor will match it! [See text box on this page for the details of this gracious challenge.] Many thanks to our anonymous member for your belief and donation!

What will we do if we get these grants? While we will continue the mission of the project (to work with landowners and the general public to help them understand, protect and enhance the native species and natural features of their land), I believe we need to mature and evolve as an organization. Many of you have benefited from a site visit by either Brian or Bob and you learned about your land. Now what's the next step? Would you be willing to trade a day at someone else's place cutting brush or planting seed in exchange for a group doing the same at your place? Do you have common needs with other members? We would like to not only help landowners learn about their land but also develop and implement management plans. Going the next step—controlled burning, mowing,

collecting and planting seed, etc. requires equipment and supplies and a mobilization of volunteer labor. This will be the essence of our proposals. In addition, we will work in other elements such as:

- Increase our K-12 education efforts
- Continue general community education
- Work to enhance and develop our organizational capacity
- Partner with other organizations and agencies to protect and enhance our native landscape

In closing, please help us meet the \$1,000 challenge. Your contributions are tax deductible. If you would like more information about our proposals, the project in general, or how you can help out, we'd love to hear from you. I can be reached at home most evenings at (608) 437-6247 or by email at schaal1@juno.com. Have a great autumn!

DOUBLE Your Money, Help BMP

A very generous, anonymous project member has made us an offer we cannot refuse. He will make a \$1,000 contribution if BMP can raise \$1,000 in contributions from its members and supporters.

The fine print:

- **We must receive at least \$1,000 in contributions or we do not receive the match.**
- All contributions must be beyond annual membership dues—dues do not count toward the match grant.
- The deadline for contributions is Dec. 31, 1999.
- Your contributions are tax deductible.

Please help us take advantage of this generous offer. Use the enclosed Supporter Information Sheet to send us your contribution.

Southern Wisconsin Oak Woodlands – Unlocking Their Mysterious Past

Bob Wernerehl, BMP Ecologist

One of the strong points of The Blue Mounds Project is our work in woodlands, an area not often covered by other conservation groups in our area. We have excellent oak savanna remnants on our members' lands, as well as good quality oak woodlands. Oak woods cover thousands of acres of our rugged topography. To better understand the ecology of these woods, we can start where we should start with any of Wisconsin's highly diverse plant communities—by reading about them in the classic work *The Vegetation of Wisconsin* by John T. Curtis (1959, University of Wisconsin Press). This book has earned such a fine reputation that it is used by plant ecologists all over the Midwest. What Professor Curtis did was to gather a group of highly talented graduate students around him and form the Plant Ecology Laboratory. They went all over the state and made detailed measurements of native forests, wetlands and prairies. We are very fortunate to have this baseline information collected in the 1950's. But, there are some weaknesses in the book, and one of them is the section on oak woodlands.

Curtis divided plant communities up into five groups based roughly on the richness of the soil and estimated soil moisture. These groups are dry, dry-mesic, mesic, wet-mesic and wet. Mesic is pronounced either MEE-zic or MEH-zic. It is common to hear it pronounced both ways at any gathering of biologists. Mesic soils are well drained, but usually retain plenty of soil moisture most of the year. They are rich in organic matter and soil nutrients. Mesic forests in southern Wisconsin are generally known by their dominant tree: sugar maple. These forests are common in the Kickapoo region, the Baraboo Hills, and southern Green County. In our region we have a few sugar maple forests just north and northeast of Blue Mounds and Brigham Park. The prairie fires crested these tall hills with the predominant wind from the southwest. Fire travels more slowly down hill, and the north-facing slopes held more moisture, so prairie fires only rarely penetrated these two areas. The lack of fire allowed the maples, a fire-sensitive species, to survive in an otherwise oak dominated forest.

Dry and dry-mesic oak woods are the norm in our region. Curtis studied 84 stands of these two forest types, including 19 stands in Dane County. But here's the catch. Curtis knew when Dane County was surveyed in 1836 there was only one pocket of oak woods in the far east central area surrounded by tamarack swamp. The rest of Dane County was oak savanna. Yet all of his 19 Dane County sites were in the former oak savanna area, none in what had originally been oak woodland. It is hard to say why this was done. It might have been that he was just trying to measure what was present in oak woodlands at the current time, in which case the history of the wood lot wouldn't really matter. A glance at the map of all 84 sites, followed by a glance at the map of the state's original vegetation, reveals that about half of his dry and dry-mesic study sites were originally oak savanna.

With that in mind we can expect the information from these sites to tell us not only about oak woodlands but also about

savannas. And that is exactly what it appears to do. In the appendix to *The Vegetation of Wisconsin*, each forest community has a list of common understory plants listed only with scientific names, making it very difficult for those who are not trained botanists to use. Another problem is the data are arranged alphabetically, so we can't tell how common one plant was in relation to all the others. Rich Henderson was able to use computerized data to rework Curtis's data regarding prairies, presenting the lists in order from the most common to the most rare, and including common names (See *Plant Species Composition of Wisconsin Prairies*, WDNR technical bulletin #188), but it hasn't been done yet for forests.

Since I commonly make lists for my site visit reports, I thought I would take a crack at entering Curtis's data for dry-mesic forests, including common names (see accompanying table on the next page). I will present the data for dry forests in an upcoming edition of the newsletter. To compare it to your own woods, keep in mind that Curtis's dry-mesic forests were dominated strongly by red oak, with white oak being about half as dominant as red. Sugar maple and basswood were both present and about half as dominant as the white oak. To compare, the dry forest dominant was black oak, followed closely by white, then by bur oak, black cherry and red oak. So if you find mostly white and black oak in your woods, it should be compared with the list for dry forests, not dry-mesic.

The accompanying table presents Curtis's data for southern Wisconsin dry-mesic forests. The study looked at 54 stands. The first value in the table is **stand frequency** (Curtis used the term "presence") which is the percentage of the stands in which the species was found. This would be 50 if the plant was found in half the stands. The next value is **quadrat frequency**. When surveying a forest stand, many square meter quadrats were laid out. The quadrat frequency is the number of times the plant occurred in a quadrat as a percentage of the total number of quadrats in a stand. The average of all those frequencies is what is listed in the column. If those two numbers for each plant are multiplied together, a **commonness index (CI)** can be derived. The highest possibility would be 10,000 (100 X 100). That would be for a plant found in every single quadrat in every single stand.

Looking at the data, several things stand out. For now, I would just like to point out one example. Look at prickly ash (CI value 211). Wouldn't it be great if it were only as common as blue cohosh or arrow-leaved aster in our woods? Apparently that was

the case in the early 1950's. Prickly ash is fire sensitive, so it has really taken off in our recent phase of fire suppression. More on that subject another time.

Scientific Name	Common name	% Frequency		CI
		Stand	Quad.	
Geranium maculatum	wild geranium	100%	35.8%	3580
Smilacina racemosa	Solomon's plume	98	25.8	2528
Galium concinnum	shining bedstraw	93	26.0	2418
Osmorhiza claytonii	hairy sweet cicely	94	23.6	2218
Circaea lutetiana	enchanter's nightshade	89	24.6	2189
Parthenocissus spp.	Virginia creeper	85	23.9	2032
Amphicarpa bracteata	hog peanut	94	21.6	2030
Uvularia grandiflora	bellwort	93	16.6	1544
Arisaema triphyllum	Jack in the pulpit	81	17.2	1393
Sanicula gregaria	black snakeroot	83	15.1	1253
Phryma leptostachya	lopseed	83	15.0	1245
Carex pennsylvanica	Pennsylvania sedge	78	14.4	1123
Aralia nudicaulis	wild sarsaparilla	76	11.9	904
Corvus americana	hazelnut	82	10.7	877
Sanguinaria canadensis	bloodroot	65	12.8	832
Cornus racemosa	gray dogwood	70	11.5	805
Viola cucullata	hooded violet	70	11.1	777
Viola pubescens	yellow violet	59	12.9	761
Desmodium glutinosum	tick trefoil	93	7.9	735
Rhus radicans	poison ivy	72	9.8	706
Thalictrum dioicum	early meadow rue	72	9.4	677
Athyrium filix-femina	lady fern	74	7.6	562
Adiantum pedatum	maidenhair fern	81	6.9	559
Botrychium virginianum	rattlesnake fern	83	6.3	523
Celastrus scandens	climbing bittersweet	67	7.8	523
Galium aparine	cleavers	50	10.1	505
Pteridium aquilinum	bracken fern	54	9.0	486
Podophyllum peltatum	mayapple	70	6.9	483
Brachyelytrum erectum	long-awned wood grass	67	7.2	482
Rubus idaeus	red raspberry	48	9.5	456
Helianthus strumosus	woodland sunflower	63	6.7	422
Rubus allegheniensis	blackberry	52	7.9	411
Anemone quinquefolia	wood anemone	65	6.2	403
Solidago ulmifolia	elm-leaved goldenrod	59	6.8	401
Geum canadense	white avens	50	6.4	320
Prenanthes alba	lion's foot	80	4.0	320
Cryptotaenia canadensis	honewort	59	5.4	319
Vitis aestivalis	summer grape	69	4.5	311
Aster shortii	Short's aster	61	4.7	287
Ribes cynosbati	prickly gooseberry	74	3.6	266
Hydrophyllum virginianum	Virginia waterleaf	44	5.5	242
Fragaria virginiana	wild strawberry	57	4.1	234
Galium triflorum	sweet-scented bedstraw	50	4.3	215
Caulophyllum thalictroides	blue cohosh	65	3.3	215
Xanthoxylum americanum	prickly ash	48	4.4	211
Aster sagittifolius	arrow-leaved aster	54	3.9	211
Polygonatum pubescens	downy Solomon's seal	44	4.7	207
Lonicera proliifera	yellow honeysuckle	57	3.6	205
Parietaria pennsylvanica	pellitory	43	4.6	198
Smilax ecirrhata	upright carrion flower	72	2.6	187
Osmunda claytoniana	interrupted fern	46	3.9	179
Elymus hystrix	bottlebrush grass	67	2.6	174
Dioscorea villosa	wild yam	57	2.7	154
Apocynum androsaemifolium	spreading dogbane	52	2.6	135
Smilax herbacea	carrion flower	61	2.1	128
Ranunculus abortivus	small-flowered buttercup	48	2.6	125
Lactuca biennis	tall blue wild lettuce	52	2.0	104
Cornus rugosa	round-leaved dogwood	43	2.2	95
Rosa spp.	native wild rose	56	1.6	90
Cornus alternifolia	pagoda dogwood	48	1.6	77
Aralia racemosa	spikenard	61	1.2	73
Veronicastrum virginianum	Culver's root	48	1.5	72
Triosteum perfoliatum	tinker's weed	52	1.0	52
Agrimonia gryposepala	tall agrimonv	43	1.0	43
Sambucus canadensis	elderberry	44	0.8	35
Anemone virginiana	Virginia thimbleweed	41	0.8	33

we become an independent nonprofit organization? While we resolved the name change ideas, we have continued to discuss the organizational issue and will feature it as a theme for our Annual Meeting.

To assist us, we have asked Vicki Elkin, Executive Director of Gathering Waters Inc., to speak at our Annual Meeting. Gathering Waters is a nonprofit organization created to assist other nonprofit conservation organizations and groups like ours. Vicki will speak about the roles of nonprofits in local conservation efforts and share with us how Gathering Waters can help us continue to evolve and be an effective leader in community based conservation. Look for more details later and break out that new calendar.

Volunteers Needed

Some have asked what they could do to help out with the Blue Mounds Project. Here are some quick ideas:

- Communication—mailing and emailing support
- Book keeping, financial record keeping, reporting
- Legal—bylaws, landowner advice, 501C3 application
- Meeting arrangements, note taking
- Data base—membership and site visit information
- Fundraising
- Write letters of support and appreciation to donors, granting foundations and agencies

If you have time or expertise in any of these areas, or have other ideas, let us know. Call us, email us, mail us or come to one of the monthly meetings held the first Tuesday of the month at 6:30 pm at the Mt. Horeb Community Center.

Board Meeting Schedule

Your voice is important; this is your organization and we value your input. Please attend a board meeting:

Dec.7, 6:30 pm, Mt. Horeb Community Center.

Jan. 4, 6:30 pm, Mt. Horeb Community Center.

Feb. 1, 6:30 pm, Mt. Horeb Community Center.

Ants - Their Role as Soil Builders

Wendell Burkholder, Entomologist

Recent complaints about ant mounds causing bumpy rides for people while mowing prairies have prompted me to provide the following information about prairie ant colonies. What are the benefits of the amazing mound-building ants?

Annual Meeting

It's not too early to plan ahead! Mark March 4th, 2000 on your new millennium calendars for the Blue Mounds Project Annual Meeting. If you will recall, last year we considered a name change for the organization as part of an overall discussion on the evolution and future direction for the project e.g., should

John T. Curtis (The Vegetation of Wisconsin, 1959) wrote that in some Wisconsin prairies there are 40 to 50 ant mounds per acre. The mounds were about 12 inches tall and 24 to 36 inches in diameter. He suggested that ants, along with earthworms and rodents, turn over the upper 24 inches of soil in a prairie once during a century.

F. Paul Baxter and Francis D. Hole (UW Soil Science Dept., 1967) noted the importance of biotic factors, including ants, in the development of the prairie soil. The excavated soil of ant mounds may occupy up to 1.7% of the surface area of a prairie. The mounds have an average volume of 0.71 cubic feet of which 12% consists of channels and chambers. The channels reach at least 5 feet below the soil surface. There is an unusually high content of available potassium and phosphorus, both essential plant nutrients, in the mound, probably a result of the concentration of organic materials by the ants. For example, the plant sap the ants collect from plant-feeding aphids and other honeydew-producing insects. The ants also promote mineralization of organic matter and mix lower soil levels with the upper soil layer.

Baxter and Hole suggested that the upward movement of soil material by ants appears to be an important factor for maintaining relatively high amounts of clay in the upper level of the soil profile. Ant activity also results in an increased thickness of the upper level of the soil profile which is important because this is the portion of soil where most plant roots grow.

J. T. Medler and R. O. Wagner (UW Entomology/Botany Dept., 1960) studied the ant mounds of the prairie ant (*Formica montana*) on the Ipswich Prairie near Platteville in Grant County, in southwestern Wisconsin. They found 620 ant mounds per acre with 75% of the mounds occupied by active colonies. It takes about 6 years to build a new colony which at its maximum may number as many as 6,000 ants. A colony dies out in about 12 years and the inactive mound gradually shrinks from about 12 inches tall to about three. An abandoned ant mound gradually loses the colony odor after which the site will again be acceptable for a new ant colony.

Medler and Wagner concluded that with a 12-year occupancy for each mound combined with a continuous establishment of new mounds, every point on the Ipswich prairie may support a mound within 600 years. The soil profile could be 3,500 years old. In this period the biota of this prairie, particularly the prairie ant, could have formed a prairie soil from a previous forest soil that had developed over about 5,000 years.

It may take many years for ant mounds to develop in new

prairies unless ant mounds from remnant prairie sources are nearby.

These may include old rail and road beds, old fields, hedgerows or fence lines. Some females have wings but appear to be poor flyers and usually disperse along the ground to new locations (G. Henderson, UW Entomology, 1989).

The benefits of mound-building ants are clear. The constant mixing of plant and animal remains with the excavated soil improves both the fertility and texture of the soil.

A Weed By Any Other Name...

The last newsletter contained an article discussing seed collecting opportunities at a prairie restoration near Mineral Point. Among the species the article mentioned were available for collecting was ox-eye daisy (*Heliopsis helianthoides*), a native forb.

A reader expressed concern that the ox-eye daisy referred to in the article was actually *Chrysanthemum leucanthemum*, an exotic, aggressive forb that also has the common name of ox-eye daisy. You may know this plant as the common daisy, a plant with white petals (rays, technically speaking) and a yellow center (actually disk flowers) that often grows along road sides and in gar dens.

BMP agrees with the reader that *Chrysanthemum leucanthemum* is an aggressive, European exotic

species that should not be planted in any natural area or as part of a restoration. However, *Heliopsis helianthoides*, the species actually referred in the article, is a native prairie plant and is suitable for use in restorations.

Now you know why botanists and ecologists frequently speak in Latin.

Calendar of Events

Program and Education Committee

Mike Anderson, Wendell Burkholder

Dennis Boyer, Author Appearance

Saturday, Dec. 4, 10:30 AM

The Prairie Bookshop, 117 East Main St., Mt. Horeb

Come and meet Dennis Boyer, co-editor of the book "A Place to Which We Belong". Dennis's book is a collection of essays made for 1000 Friends of Wisconsin, a local land conservation organization. The essays, which revolve around the theme that the land is a community to which we belong,

explore a wide variety of interesting topics and share a personal perspective about the human sense of place within the part of the world we call Wisconsin.

Effects of Deer Herbivory in Southern Wisconsin
February 5, 2000, 10:00-11:00 AM
Mt. Horeb Community Center, Mt. Horeb

Large herbivorous mammals, such as the white-tailed deer, interact with their environment in complex and important ways and are a significant factor causing habitat change. Join us as

Don Waller, UW Botany Professor and researcher, discusses the effects of deer herbivory on the plants and animals of Southern Wisconsin. You'll learn how deer herbivory can result in the local extinction of some plant species, alter successional trends in native plant communities, negatively impact birds, small mammals and other wildlife, and much more.

BMP Annual Meeting
March 4, 2000
Mt. Horeb Community Center, Mt. Horeb

In addition to our annual report, committee updates, and the opportunity to share your comments and suggestions, the annual meeting will feature Vicki Elkin, Executive Director of Gathering Waters, Inc. Gathering Waters is a nonprofit organization created to assist other nonprofit conservation organizations and groups like ours. Vicki will speak to us about the roles of nonprofits in local conservation efforts and share with us how Gathering Waters can help us continue to evolve and be an effective leader in community based conservation. Mark your calendar today, stay tuned for additional details..



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Your Advertisement Here

BMP is now accepting advertisements for inclusion in our newsletter. The revenue generated will help defray publishing costs which will allow our grant monies to be used for other purposes more directly beneficial to our members.

If you would like to advertise in the newsletter, please contact The Blue Mounds Project, c/o Mike Anderson, 2505 Richardson Street, Fitchburg, WI 53711-5474, or call (608) 277-9960.

Services For The

Native Restoration
 site analysis, species selection, design, installation, maintenance

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Science and Stewardship

Our Mission:

The Blue Mounds Project is a community based organization that seeks to inspire, inform and empower private landowners in the Southwestern Wisconsin region to enjoy, protect and restore native biodiversity and ecosystem health.

Our objectives:

- 1) Promote understanding, appreciation and conservation of native woodlands, prairies, wetlands and savannas and their special species in an economically viable manner, through community outreach programs and private contacts.
- 2) Act as a clearing house for information from people and organizations involved in preserving native biodiversity including information about plant, animal and habitat identification, management, restoration, seed sources, native plant nurseries and invasive, non-native species.

3) Encourage cooperative, volunteer restoration and management activities.

4) Identify public and private land use changes that may affect ecosystem health and promote community-based stewardship of the unique natural heritage of the Blue Mounds and the Southwestern region of Wisconsin.

The Blue Mounds Project is sponsored by Community Conservation Consultants (CCC), a nonprofit organization.

The Blue Mounds Project Newsletter is published quarterly. Send your comments, suggestions, and submissions to Mike Anderson, editor, BMP, PO Box 332, Mount Horeb, WI 53572.

**The Blue Mounds Project
PO Box 332
Mount Horeb, WI 53572**

Address Correction Requested

**TIME TO RENEW?? Please check the address label for your membership expiration date.
If you're receiving a complimentary copy, please consider joining.**