

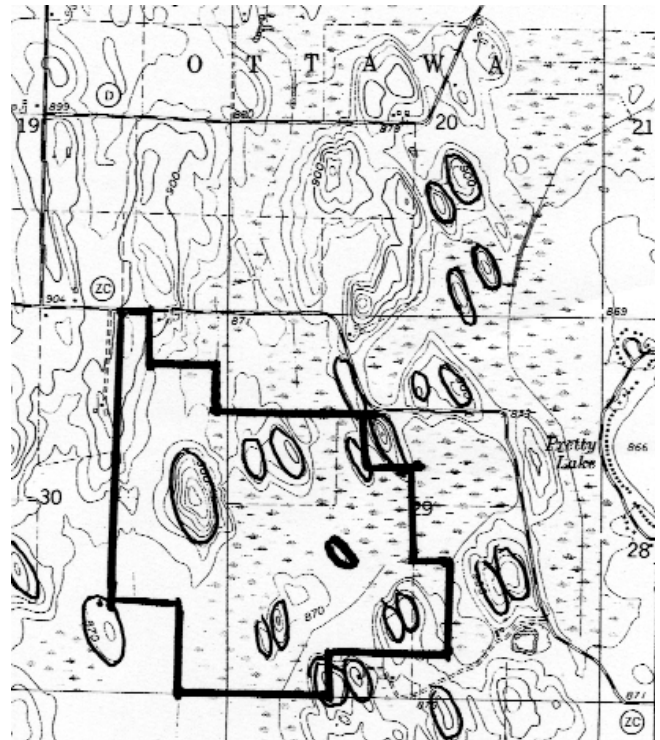


## Drumlins At Ottawa Wildlife Refuge: A Bonus for Waukesha County Land Conservancy

Typically, Waukesha County Land Conservancy purchases sites for their diversity of plants and animals. That is, in fact, what we did for the Ottawa Wildlife Refuge. After studying the site further we found we obtained a bonus in the deal! We are now the proud owners of ten special topographic features called drumlins. The Refuge takes on added significance because of our preservation of these special glacial landforms. (Many drumlins in our county have had their natural shape and appearance altered by houses, highways, radio towers and gravel pits.)

Drumlins are streamlined, oval, elongate mounds molded under flowing glacial ice. They generally have a steep slope which faces in the direction of ice advance. The opposite slope is long and tapering and lies parallel to the direction of ice flow. Drumlins have been likened to half an egg cut lengthwise or as an inverted spoon minus the handle set on the landscape. They can rise up to 150' above adjacent land, have a width of one-quarter mile and extend over two miles in length. They often occur in groups called 'drumlin fields' or 'drumlin swarms'. Drumlins give character to the landscape and contribute to scenic beauty.

Southeast Wisconsin has some of the best examples of drumlins and drumlin fields in the world. Geology students and researcher from all over the world use maps of Wisconsin drumlins as classic examples of this glacial formation. Nearly 1000 drumlins are found in Waukesha County and some of these have been the subject of scientific papers.



Oval shaped drumlins in and around Ottawa Wildlife Refuge. Arrows show direction of glacial ice flow.

The ten drumlins at Ottawa Wildlife Refuge are part of a swarm numbering 55 individuals. They are oriented in a NW/SE direction, indicating ice flowed from the northwest.

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Much of the 350 acre Ottawa Wildlife Refuge consists of wetlands which represent remnant depressions on the floor of a large ancient shallow lake (Glacial Lake Scuppernong) formed from melt water as the last continental glacier was receding. The lake covered much of Jefferson and Dodge Counties. "Our" drumlins are part of a swarm found at the eastern edge of the ancient lake where they would have appeared as small islands above the water. They are now 10'-70' high hills mostly surrounded by wetland.

Waukesha County Land Conservancy has as its mission 'to protect environmentally significant lands'. Geological features such as drumlins are an 'environmentally significant' portion of our landscape. They are a part of our natural heritage dating back 16,000-17,000 years ago when a continental glacier covered the area. As members of Waukesha County Land Conservancy, we can be proud that we are preserving the past and the present for the future!

*By Marlin Johnson*



Biologist Marlin Johnson explains significance of this tamarack bog during the recent hike at Ottawa WR.



View from a drumlin at the Ottawa Wildlife Refuge

# DONATIONS HELP PURCHASE THE OTTAWA WILDLIFE REFUGE

**W**aukesha County Land Conservancy members have once again displayed their enthusiasm for land preservation by opening their checkbooks. The purchase of the 351-acre Ottawa Wildlife Refuge has stimulated a generous response from many of you. Was it the size of the site that excited so many of you, or the thought of preserving tamarack bogs, wild orchids and wonderful bird and wildlife habitat? Whatever caught your fancy, the board of directors of the Waukesha County Land Conservancy, its members, and all future generations of Waukesha County residents THANK YOU!

We wish to thank **all donors** to the Waukesha County Land Conservancy, since more than 95% of all donations go toward land purchases.

Here is a list of those who have specified a contribution toward the purchase of the Ottawa Wildlife Refuge so far:

Michael & Luisa Andrae  
Cynthia C Arndt  
Kathy & David Averbeck  
Walter & Arlene Baade  
Richard & Barbara Baker  
Elizabeth Bostrom  
Don & Joan Brauch  
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Split Rail Foundation  
Cheryl Racette & Allen Stasiewski  
Richard Stollberg and Judy Olson  
Meribeth & Dennis Sullivan  
Susan Andrews & Cynthia Weix  
Frederick Welk Jr

Donations toward the purchase of the Ottawa Wildlife Refuge are still being accepted. You may address your tax-deductible charitable donation to the Waukesha County Land Conservancy at PO Box 2572, Brookfield WI 53008 and make a note that it is to be used toward the purchase of the Ottawa Wildlife Refuge.