

AN ORCHID SURVEY OF THE RIDGES SANCTUARY

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ABSTRACT. The area surrounding the Great Lakes is a haven for temperate terrestrial orchids. Among the distinct geological features is the Ridges Sanctuary at Bailey's Harbor, Door County, Wisconsin. A survey of the Ridges shows that it is home to 28 species of North American native terrestrial orchids. A combination of objective fieldwork and demographic research is used to create an orchid habitat management plan. An educational component for the project is included to discourage wild collection of native orchids by visitors to the Ridges Sanctuary.

Key words: native orchid, terrestrial, habitat, management, sand ridges, conservation

INTRODUCTION

In 1998 the Northeastern Wisconsin Orchid Society (NEWOS) created the Native Orchid Conservation Committee (NOCC) to conserve and protect native orchids of Wisconsin through education. Planning and planting a demonstration garden of wild hardy orchids in the Green Bay Botanical Garden (GBBG) would meet this challenge in part. In the garden are mature orchid plants rescued from construction sites, purchased laboratory-grown hardy orchids, and donated specimen plants. The planning process for the garden included a guided tour of the Ridges Sanctuary to experience, first hand, hardy orchids in a natural setting with the idea of providing similar conditions for planting native orchids at the GBBG.

A 1-hour drive north from Green Bay takes you to Wisconsin's first State Natural Area, which is the pride of Door County. The "Ridges" receives its name from the formation of alternating series of forested sand ridges and open wet areas called swales. Each ridge-and-swale formation was created during a 30–40 year period by the natural rise and fall cycle of Lake Michigan. These ridges parallel the shoreline of Baileys Harbor and extend a mile inland. Lake breezes provide seasonal tempering to support the boreal forest that creates this unique habitat. Wind, water, wave, and rock create a perfectly suitable habitat for the 28 terrestrial orchid species (R. Lukes unpubl. data) that are found within the Ridges Sanctuary. The 1200-acre natural area has 3.4 miles of trails open to the public for hiking and sightseeing.

During a NOCC fieldtrip led by Roy Lukes, who spent 27 years as manager and chief naturalist of the Ridges, members heard details of illegal plant collection in the sanctuary over the years. Disturbed by these accounts, NOCC members were motivated to help resolve the

problem of illegal orchid digging. The answer seemed to be a simple one. NOCC would offer to grow and plant new orchids. That's what we orchid growers do. The committee members were surprised yet again when they learned that, although the offer to reintroduce orchid plants grown from Ridges seed was generous, it would not be permitted. In a few words, the Ridges Research Committee habitat management policy of "hands off" means do not take anything out and also do not bring anything in. NOCC could not reintroduce artificially propagated orchids without endangering the genetic stability, integrity, and biodiversity of the habitat. The natural area director, however, presented an alternative suggestion for orchid welfare, drawing attention to the lack of orchid population data for 99% of the "Ridges." Here was an opportunity for volunteers to search the wild "off-trail" and largely unexplored parts of the Ridges Sanctuary and collect data that would serve science and conservation.

METHODS AND MATERIALS

The Native Orchid Conservation Committee, concluding that exploration of the off-trails part of the Ridges Sanctuary was a way to contribute to orchid conservation, decided on two goals. NOCC members would produce an orchid survey to provide researchers and habitat managers with a current database of Ridges orchids. NOCC also would provide an educational survey to be completed voluntarily by daily visitors, who are restricted to the hiking trails. The educational survey would serve to discourage illegal collection by giving visitors a sense of temporary ownership.

Literature Review and Data Collection

A review of previous research conducted at the Ridges was the first step to finding orchids



FIGURE 1. The “No Dig” orchid button is designed and produced by the Northeastern Wisconsin Orchid Society, Native Orchid Conservation Committee. It is presented to visitors who take part in a voluntary survey of native orchids that they observe in bloom along the hiking trails of The Ridges Sanctuary in Wisconsin.

in the field. Reference works included Vascular Flora of The Ridges Sanctuary (J. Trick unpubl. data), *The Ridges Sanctuary* (Lukes 1988), and Progress Report on the Ramshead Lady’s-Slipper (*Cypripedium arietinum*) Project at The Ridges Sanctuary, Bailey’s Harbor, Wisconsin (J. Bender unpubl. data). Using these references, NOCC members were able to identify specific habitat types that would later be used to define representative populations of orchid species. Much time was spent interviewing Roy Lukes regarding his extensive knowledge of the property. He provided directions to existing plant locations and general descriptions of historical sites. Aerial photographs and maps were used to locate open water and wetlands within the for-

ested property. Once a population was discovered, NOCC made use of soil maps to identify the type of substrate. The search then continued for additional populations, using the soil map as a guide. Topographical maps were employed to locate access points and trails not marked on other maps. Of particular use were the orchid bloom time schedules (mid-May–September) provided by Lukes. A scheduled number of fieldtrips were coordinated with the availability of human resources. NOCC members began searching the sites most likely to reward them with blooming orchids.

To provide a standardized form that would be available for future workers and permanently recorded with the State of Wisconsin, we collected

and reported data using the *Wisconsin Natural Heritage Inventory, Rare Plant Field Report*, form 1700-049 (Revised 9/02). The form includes such information as species name, location by Global Positioning System, and directions to the site. The observation details included the date, numbers of individuals, and estimated percentages of the population in separate life stages, such as, in flower, in bud, in fruit, sterile adults, and seedlings. The form has space for data on the area covered by the population, habitat description, current management, and evidence of disturbance. A section of the form is designated for records of specimens collected and the name and location of the herbarium where each specimen has been deposited. Identifying photographs of each orchid species are provided whenever available. The form also has space for data on the storage location of each photographic record. NOCC observers complete the report by providing their contact information and a list of the taxonomic references used to describe orchids in the field. Copies of all Rare Plant Field Report forms and directive maps are sent to the Botanist, Wisconsin Natural Heritage Program. The Ridges Research Committee at The Ridges Sanctuary maintains another copy of the reports. The Northeastern Wisconsin Orchid Society also maintains a written record in the NEWOS archives of all Ridges fieldwork conducted by its Conservation Committee members.

Educational Component

The educational portion of the survey depends on the willingness of Ridges visitors to participate in observing and recording the numbers of orchids they find while hiking the trails. To take part in the survey, they must request, at the Nature Center, a form entitled, "How many wild orchids have you seen today?" The form includes color photographs of many of the orchids

found along the trails. The visitor-observer is instructed to identify the orchids found by comparing them to the form photo and description. They then make a check mark in boxes provided on the form, each time that blooming orchid is located. No attempt is made to record non-blooming plants. The strategy of collecting the visitor surveys is purely to make visitors aware of the orchids and their importance to the habitat and to discourage collection by encouraging participation in promoting the well being of the orchid population. Upon the return of the completed forms, visitors are rewarded for their participation with the presentation of a gift, the "No Dig" orchid button (FIGURE 1).

RESULTS: MEASURING SUCCESS

Future terrestrial orchid research at the Ridges Sanctuary will depend upon accurate recording of population data and its preservation in a standardized form. The members of the Northeastern Wisconsin Orchid Society's Native Orchid Conservation Committee feel that An Orchid Survey of the Ridges Sanctuary contributes to the preservation and protection of native orchids. NOCC members encourage cooperation between researchers and native orchid enthusiasts to work together in similar educational conservation efforts to make every child aware of plant diversity.

LITERATURE CITED

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