

March 2006

## **MASTER PLAN SUMMARY**

University of Wisconsin - Madison Lakeshore Nature Preserve Master Plan

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# A Plan for the Lakeshore Nature Preserve of the University of Wisconsin-Madison

For the first time in its history, UW-Madison has produced a master plan for one of the most celebrated and beloved natural areas in Madison: the Lakeshore Nature Preserve, which includes Picnic Point and the Lakeshore Path. Our goal is to manage this precious place to protect its distinctive natural features and to increase the enjoyment and understanding of visitors so that the Preserve can serve as a national model for how cities and universities can protect and sustain the natural areas within their boundaries.

## Description

The Preserve consists of about 300 acres along more than four miles of shoreline where Lake Mendota meets the UW-Madison campus. It stretches from the Memorial Union along the Lakeshore Path around University Bay to the tip of Picnic Point, and from there west to Eagle Heights Woods on the margin of Shorewood Hills. It includes such diverse habitats as the restored Class of 1918 Marsh, the Biocore Prairie, Muir Woods, and Eagle Heights Community Gardens. Once known as the “Campus Natural Areas,” it was renamed the “Lakeshore Nature Preserve” in 2005 to help everyone know where these lands are located, and to see them as a continuous natural area that we are committed to protecting forever.

Incidentally, we recognize that “Lakeshore Nature Preserve” is a mouthful, so encourage everyone to refer to it by shorter names: “Lakeshore Preserve,” or, better still, “the Preserve,” the same way we talk about “the Arboretum.” The one thing we don’t want people ever to call it is “LNP”!

## Goals

The Preserve came into being over many decades through the accretion of parcels of undeveloped land—in part by accident, in part through the efforts of visionary people who wanted to protect natural areas on campus. Now that the campus is reaching the limits of its site, we are finally able to appreciate how extraordinary it is to have 300 acres of undeveloped land and four miles of shoreline as defining features of the campus. The Preserve symbolizes not just the beauty of UW-Madison, but its core values as one of the preeminent environmental research universities in the world. The new master plan lays out an exciting agenda—a greenprint, as it were—for putting the university’s environmental knowledge and values to work right in our own back yard.

Until recently, the Preserve wasn’t seen as a single integrated unit and wasn’t managed as a whole. Now that we’ve officially recognized this strip of green space as the “Lakeshore Nature Preserve,” we’re finally able to provide systematic care and stewardship for its ecosystems, while also helping visitors understand and enjoy the Preserve as a whole.

The master plan is a key tool for accomplishing this goal of integrated, sustainable management. It provides a systematic overview and analysis of all the resources of the Preserve, identifying problems and challenges, and making recommendations for how to address them. We believe it can transform the Lakeshore Nature Preserve from a relatively neglected part of the campus into one of our crown jewels.

The Preserve faces several important threats:

- shoreline erosion;
- runoff from adjacent structures,
- pressure for development;
- invasive exotic species,
- disappearing views;
- decaying infrastructure; and
- poorly managed human use.

The master plan makes recommendations for addressing these threats, and also for restoring natural habitats, reintroducing natural processes like fire, enhancing visitor experience, and making the Preserve even more beautiful. To move forward, we must now build partnerships between the University and generous private donors.



*Heritage Oak before Restoration Work  
Photo courtesy of Glenda Denniston*



*Heritage Oak following Restoration Work  
Photo courtesy of Glenda Denniston*

# Lakeshore Nature Preserve Mission and Guiding Principles

## Mission Statement

The University of Wisconsin-Madison Lakeshore Nature Preserve permanently protects the undeveloped lands along the shore of Lake Mendota where members of the campus community have long experienced the intellectual and aesthetic benefits of interacting with the natural world. The Preserve shelters biologically significant plant and animal communities for teaching, research, outreach, and environmentally sensitive use; and safeguards beloved cultural landscape features. The Preserve is as essential to the university as its lecture halls, laboratories, and playing fields. It contributes to a powerful sense of place and fosters an ethic of stewardship to promote mutually beneficial relationships between humans and the rest of nature.

—*Lakeshore Nature Preserve Mission Statement, June 7, 2005*

## Guiding Principles

The underlying principles of ecology and conservation biology should guide Preserve management decisions, promoting protection of remnant communities, corridors, and large contiguous blocks of habitat; removal of invasive species; and encouragement of natural processes and native communities.

The Lakeshore Nature Preserve should be a showcase for rethinking a city's relationship to the natural systems in which it is embedded to make human and non-human communities more mutually supportive and sustainable.

The Preserve should be interpreted so that visitors will better understand the history of these lands, their human uses, and the changing natural communities that have existed here over time.

The Preserve should provide a retreat where people can contemplate their past, present, and future place in the larger web of life.

The Preserve should offer access to wild, non-human nature for the campus community.

Infrastructure elements in the Lakeshore Nature Preserve should:

- Be designed to protect the natural and cultural resources of the Preserve.
- Be designed to protect the safety of users.
- Minimize adverse physical, biological, and aesthetic impacts.
- Serve multiple uses whenever possible.
- Support the biological diversity that is fundamental to the educational value of the Preserve.
- Be sustainable and environmentally friendly.

Management techniques should as much as possible mimic natural processes.

Artificial structures should be kept to a minimum, blending in space, form, and color with the natural setting.

Disturbance and compaction of the soil should be minimized to discourage invasive vegetation and erosion.

Trails should provide appropriate access while minimizing fragmentation of biological communities.

Motorized traffic, noisy machinery, and oversized equipment should be kept to a minimum.

Infrastructure should be designed to minimize required maintenance in accordance with the previous guiding principles.

In determining the ecological community appropriate to a site, the existing vegetation as well as historical and pre-European data should be considered.

Major changes in community physiognomy (e.g., forest to grassland) will be undertaken only after careful consideration and stakeholder input.

Planning recommendations should only be implemented after careful study and on-site evaluation; all design and management should be adaptive, evolving in an iterative way to accommodate new knowledge and data.



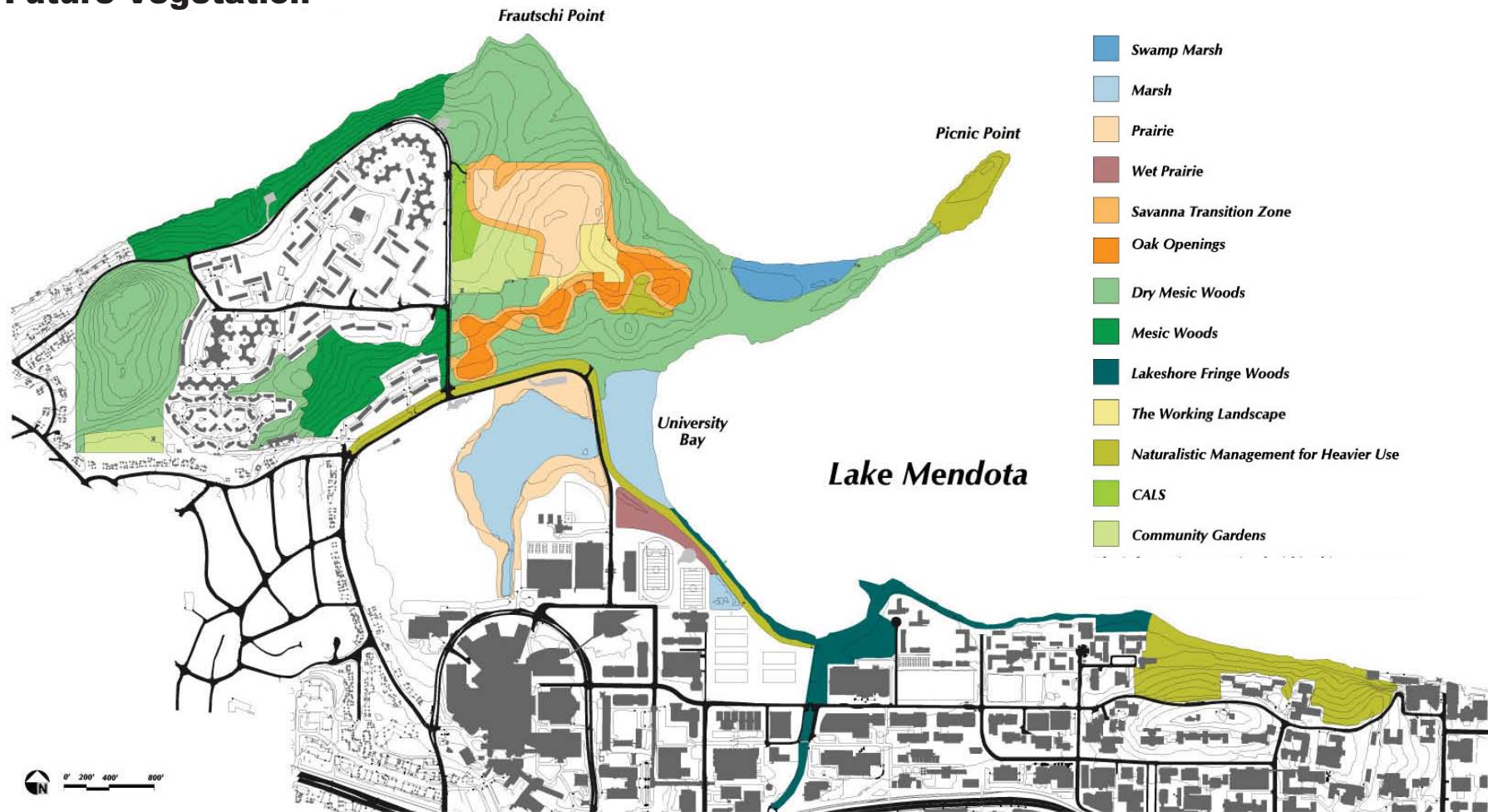
*Picnic Point Aerial toward Middleton, UW Archives, 1945*



*Picnic Point Aerial toward Middleton, Present  
Photo courtesy of William Cronon*



## Future Vegetation



The master plan offers complex recommendations for managing the vegetation of the Preserve with an eye to restoring a variety of native habitats in appropriate locations.

Among the most exciting of the proposed changes is a zone where existing open-grown bur oaks will be used to form the core of a restored oak savannah, a vegetation type that was once among the most common in southern Wisconsin, but that has almost disappeared since the nineteenth century.

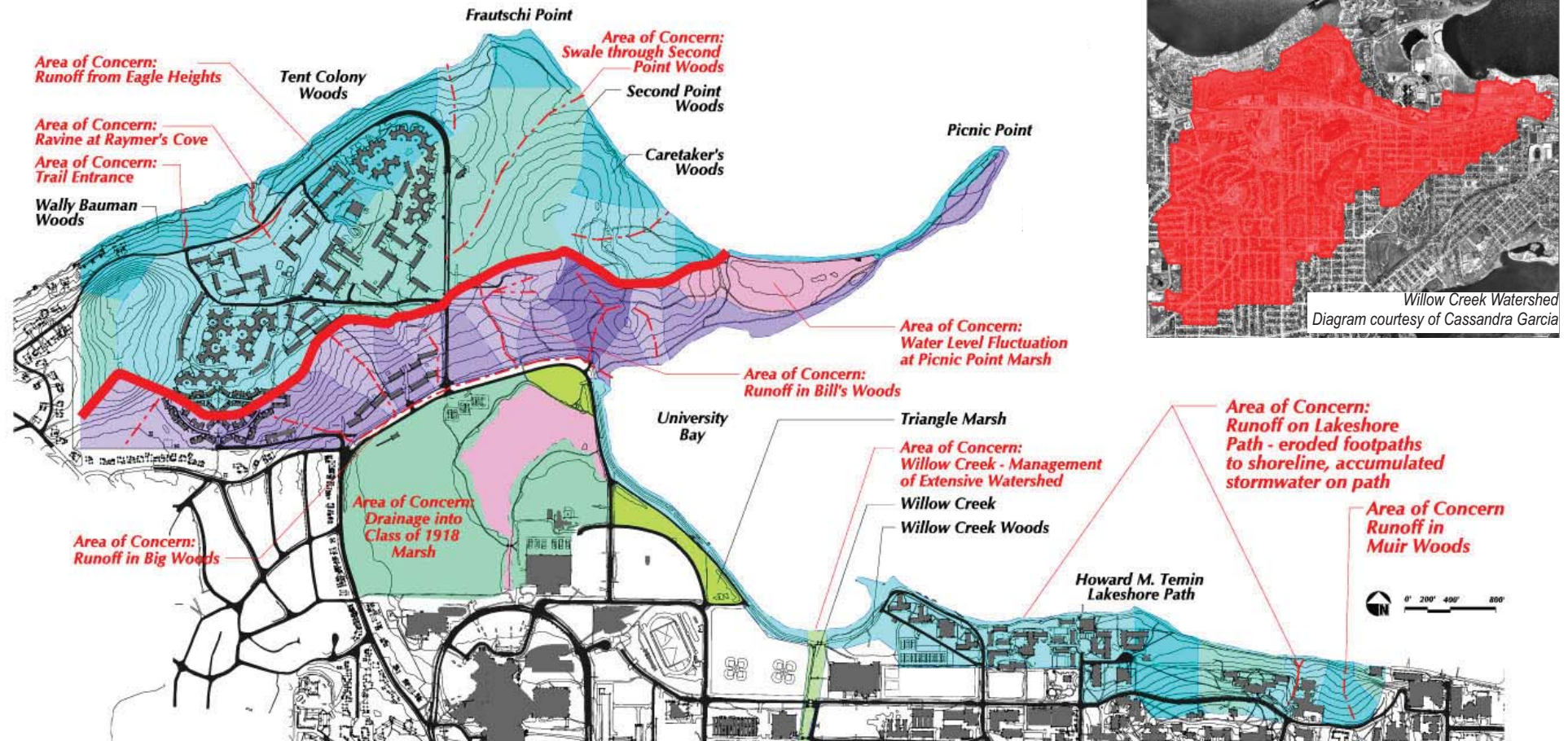
To promote restoration of prairie, savannah, and oak forest, the plan proposes to reintroduce controlled burning to the Preserve. Although regular fires were part of the ecosystems of this area for thousands of years prior to Euroamerican settlement, they have been absent from the Preserve (except for the Biocore Prairie and the Class of 1918 Marsh) for a century and a half. Reintroducing fire will be a key management tool that can serve multiple goals: removing invasive species; restoring savannah and other fire-dependent vegetation types; and experimenting with restoration techniques.



Spring Ephemeral, Photo courtesy of Glenda Denniston



## Existing Hydrology and Areas of Concern



Hydrology and hydrologic processes within and around the Preserve greatly influence the quality and health of its diverse biotic communities. A significant ridgeline runs east-west through the northern portion of the Preserve, bisecting Eagle Heights Woods, Bills Woods, and the base of Picnic Point. Areas north of the ridgeline drain north toward Lake Mendota while areas south drain toward University Bay Drive, where grassy swales infiltrate and conduct water to the lake near University Bay Marsh.

Erosion from gullies, rivulets, and outwash flows is the result of changes in the vegetation and built

environment of the Preserve. Large areas under roof and asphalt in the surrounding area convey excessive storm water downhill rather than infiltrating it near the source. A lack of ground layer vegetation in many of the wooded areas throughout the Preserve allows surface water to erode organic material in the soil. Concentrated areas of storm water runoff from culverts and pipes create point-source erosion problems. All these forms of erosion need attention.

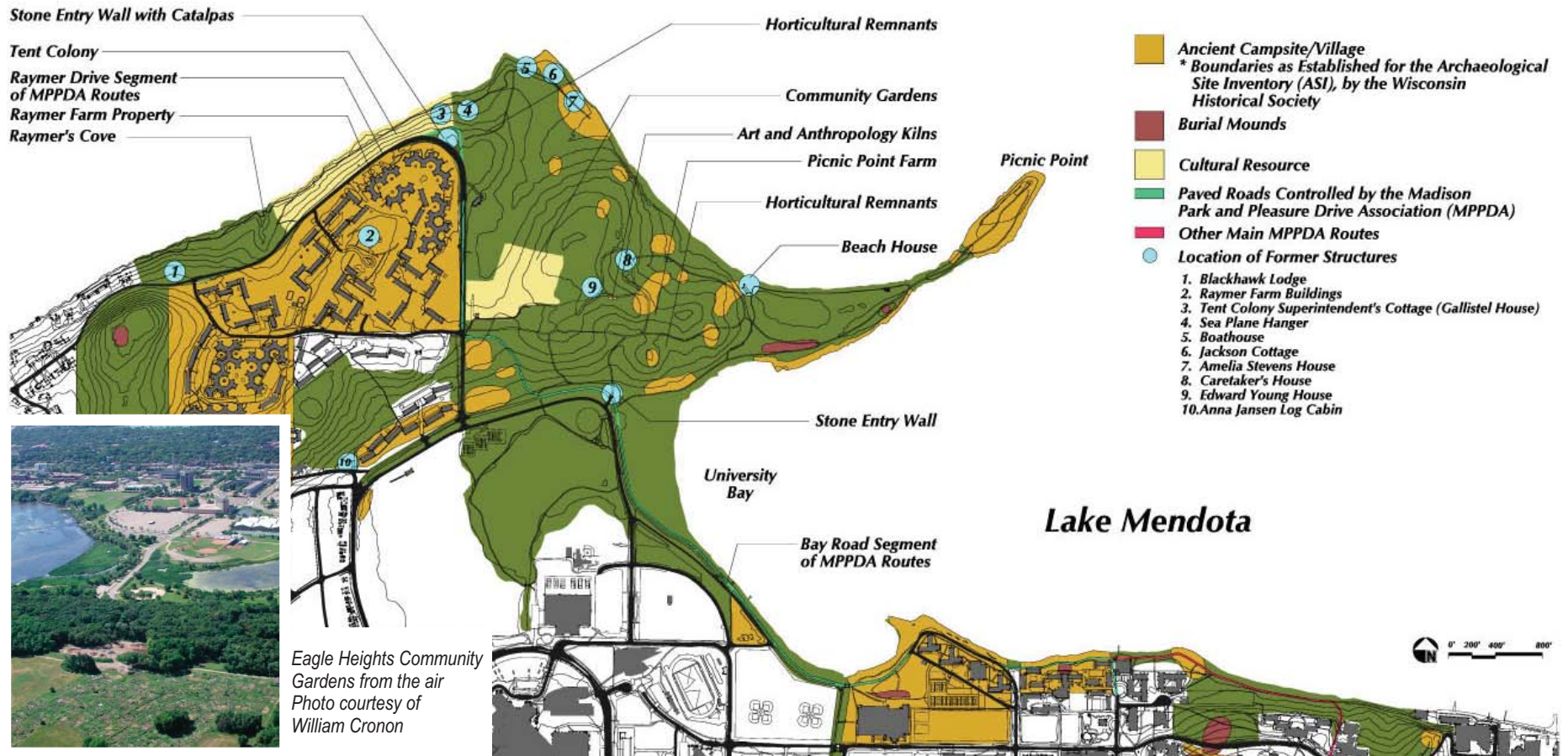
The master plan offers strategies for enhancing the Class of 1918 Marsh, a pioneering example of a restored wetland that was created with generous

support from the Class of 1918 in 1972. By doing a better job of managing run-off from the UW Hospital complex and other buildings of the west campus, and by working to promote a diversity of community and habitat types, the marsh can provide better wildlife habitat, healthier plant communities, and better learning opportunities.

Finally, the master plan warns of the severe sedimentation problems posed for University Bay by Willow Creek, which drains a watershed on the west side of Madison reaching all the way to Hilldale Shopping Center and beyond.



# Cultural Resources



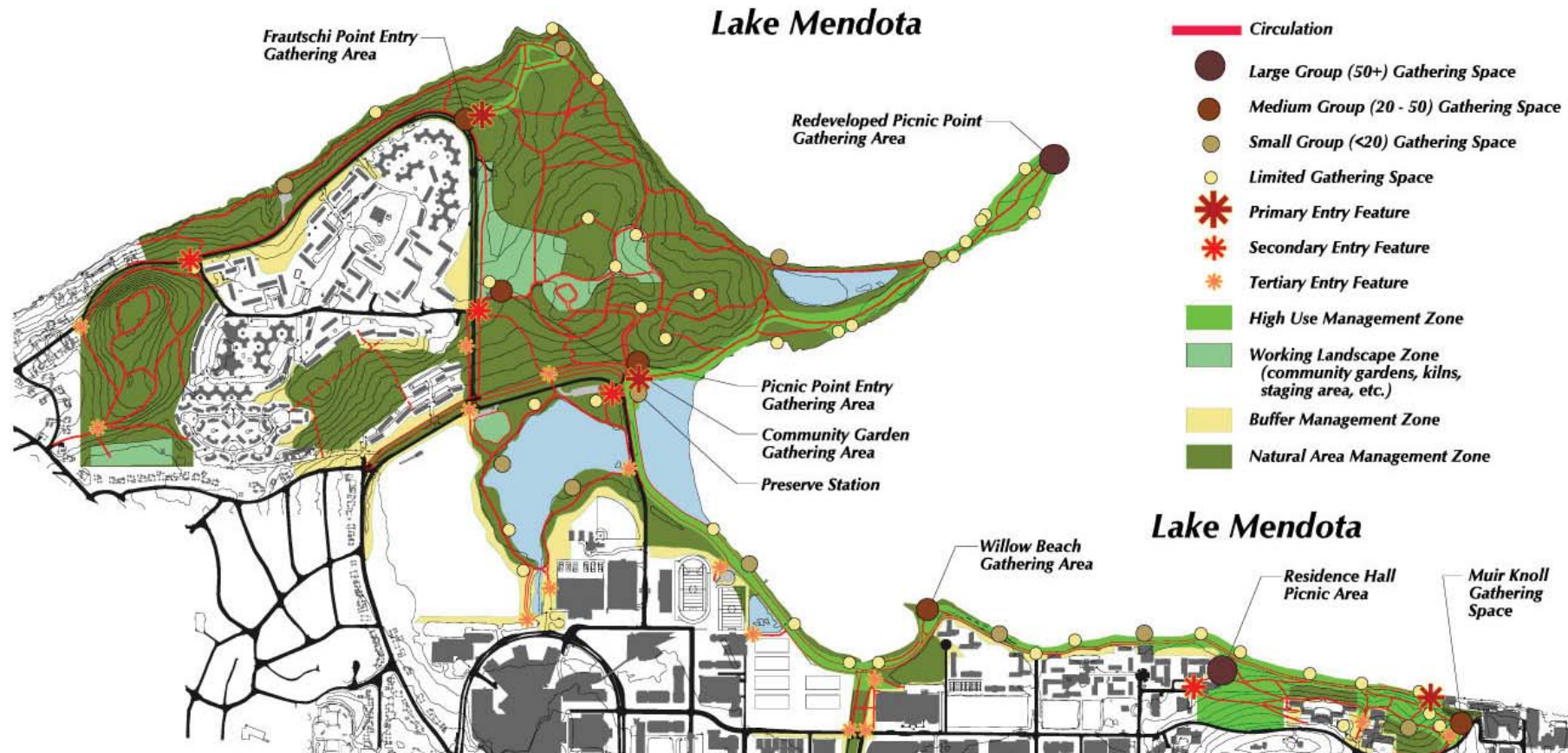
Native American cultural resources in the Preserve range from archaeological sites dating back 12,000 years to present-day sites that continue to be important places of spiritual practice.

Ancient Native American burial mound sites are scattered across campus but are primarily located within the Lakeshore Nature Preserve. This collection of sacred sites includes several unique effigy-type burial mounds. Indeed, the UW-Madison campus has management responsibility for more effigy mounds than any other university in the world.

Euro-American settlement and land use has significantly shaped the current landscape of the Preserve. Grazing and cropping replaced native plant species and encouraged drastically altered patterns of vegetation. The Preserve contains artifacts and remnants from early farms: old foundations, fencerows, roads, even the grave of a pet dog. More subtly, the pattern of the vegetation itself reflects these earlier periods of human use. The Preserve landscape also documents the early history of UW-Madison, including the tent colony foundations in Tent Colony Woods. The rich human history of the Preserve deserves fuller interpretation for visitors.

The Eagle Heights Community Gardens were created east of the Eagle Heights Apartments in the early 1960s. They are among the oldest community gardens in the United States, and are remarkable for the diversity of horticultures practiced there. Gardeners from around the world, mainly residents of the Eagle Heights Apartments, rent plots and tend gardens, many using traditional methods brought from their countries of origin.

## Proposed Circulation and Features



The master plan offers broad recommendations for trail alignments, removals, and classifications, with different strategies depending on levels of use.

The circulation plan utilizes the existing trail system wherever possible, though we also propose modification and removal of existing trails. Proposed modifications include realignments to improve accessibility, or to reduce impacts on natural or cultural resources. Other modifications include narrowing the widths of trails and changing surface materials, particularly where existing asphalt drives

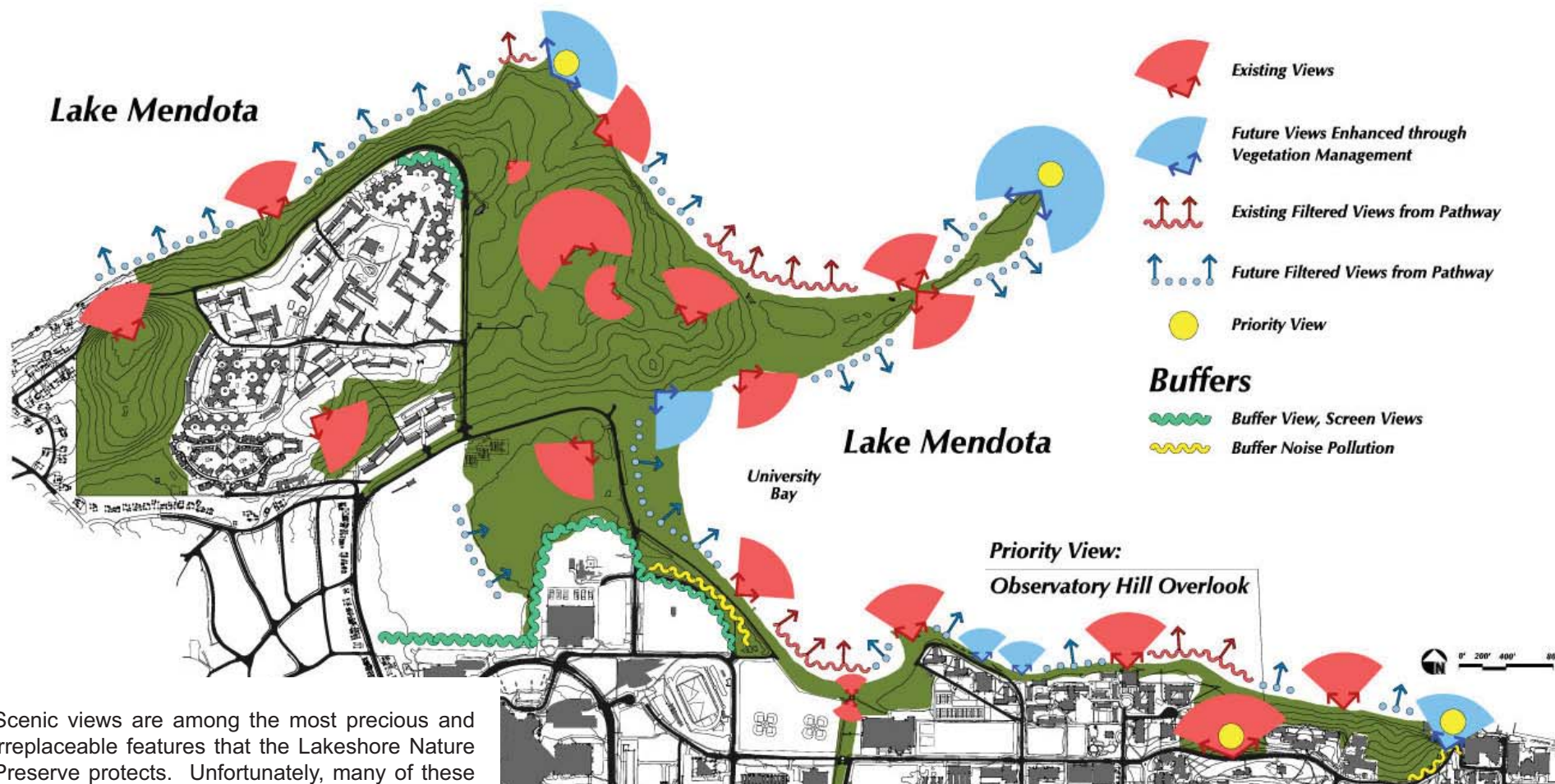
are redeveloped as pedestrian walkways. Trails have been proposed for removal where severe erosion issues are occurring, or where a current route infringes on sensitive biotic or cultural resources.

### Recommendations

- Provide routes that offer diverse educational, recreational, and aesthetic experiences throughout the Preserve
- Develop a consistently signed trail system to help visitors experience the Preserve as an integral whole
- Minimize fragmentation of habitats
- Develop clear entry points to welcome and orient visitors as they arrive
- Minimize service vehicle traffic
- Eliminate redundant paths
- Eliminate or modify paths in erosion-prone areas
- Avoid negative impacts on sensitive cultural and ecological resources
- Provide barrier-free access where this can be accomplished without undermining other goals of the Preserve



## Proposed and Existing Views and Buffers



Scenic views are among the most precious and irreplaceable features that the Lakeshore Nature Preserve protects. Unfortunately, many of these views have not been well managed or cared for in recent years. Some are still visible today, while others have become overgrown and will require restoration to be fully appreciated. Thick understory vegetation, often composed of invasive species, blocks many of the Preserve's most iconic views. With careful management and selective removal of invasive plants, existing views can be maintained and former views that have disappeared can be restored.



View of Picnic Point from the Lakeshore Path before removal of Invasive Understory



View of Picnic Point from the Lakeshore Path after removal of Invasive Understory  
Photos courtesy of William Cronon



## Fighting Invasives and Restoring Views at Picnic Point

Perhaps the most exciting new design proposed by the master plan is located at the tip of Picnic Point, an area that has become so overgrown with buckthorn, honeysuckle, and other exotic shrubs that it is literally impossible to see the spectacular view of Lake Mendota and the Madison skyline that is a key reason visitors make the mile-long trek to the end of the peninsula. To see this view, visitors are now forced to scramble down steep slopes with exposed tree roots, mutilated vegetation, and heavily eroded soils because the view everywhere else is blocked-and because no well-designed route has been provided for reaching the water's edge, as virtually every visitor to Picnic Point eventually wishes to do.

The master plan therefore proposes to redesign this heavily eroded and damaged area by providing a stone storytelling circle where large groups can gather (as many UW students do every semester). Although extensive additional design will be needed before any work is actually done at the site, we propose a council ring in the tradition of the great midwestern landscape architect Jens Jensen (whose council rings can also be found in the UW Arboretum and elsewhere on campus).

In addition, rustic stone steps will be constructed to guide visitors down the slopes to the edge of the lake in such a way that eroded slopes will be stabilized and damaged vegetation can regrow. Finally, invasive shrubs will be cleared and views will be reopened so that the full beauty of the lake and the city skyline will once again be visible from this famed vantage point-a place that city residents have been celebrating for its views since the middle of the nineteenth century. Mature trees will be left in place, and are likely to be healthier once they no longer have to compete with invasive shrubs and the abuse to their roots from thousands of feet clambering down to the lake.

The master plan also proposes a smaller gathering place at Frautschi Point, and a small open-walled welcoming structure at the entrance to Picnic Point. The latter will offer visitors maps and interpretive panels, much-needed restrooms, and a low, unobtrusive observation deck for viewing the Class of 1918 Marsh and the campus and city skyline across University Bay. By providing a main gateway at Picnic Point, we hope to give visitors a much better appreciation of the Preserve as a whole.



*Picnic Point Gathering Space, Plan and Section*



*Wheeler Ring UW-Madison Arboretum  
Photo courtesy of Nan Fey*

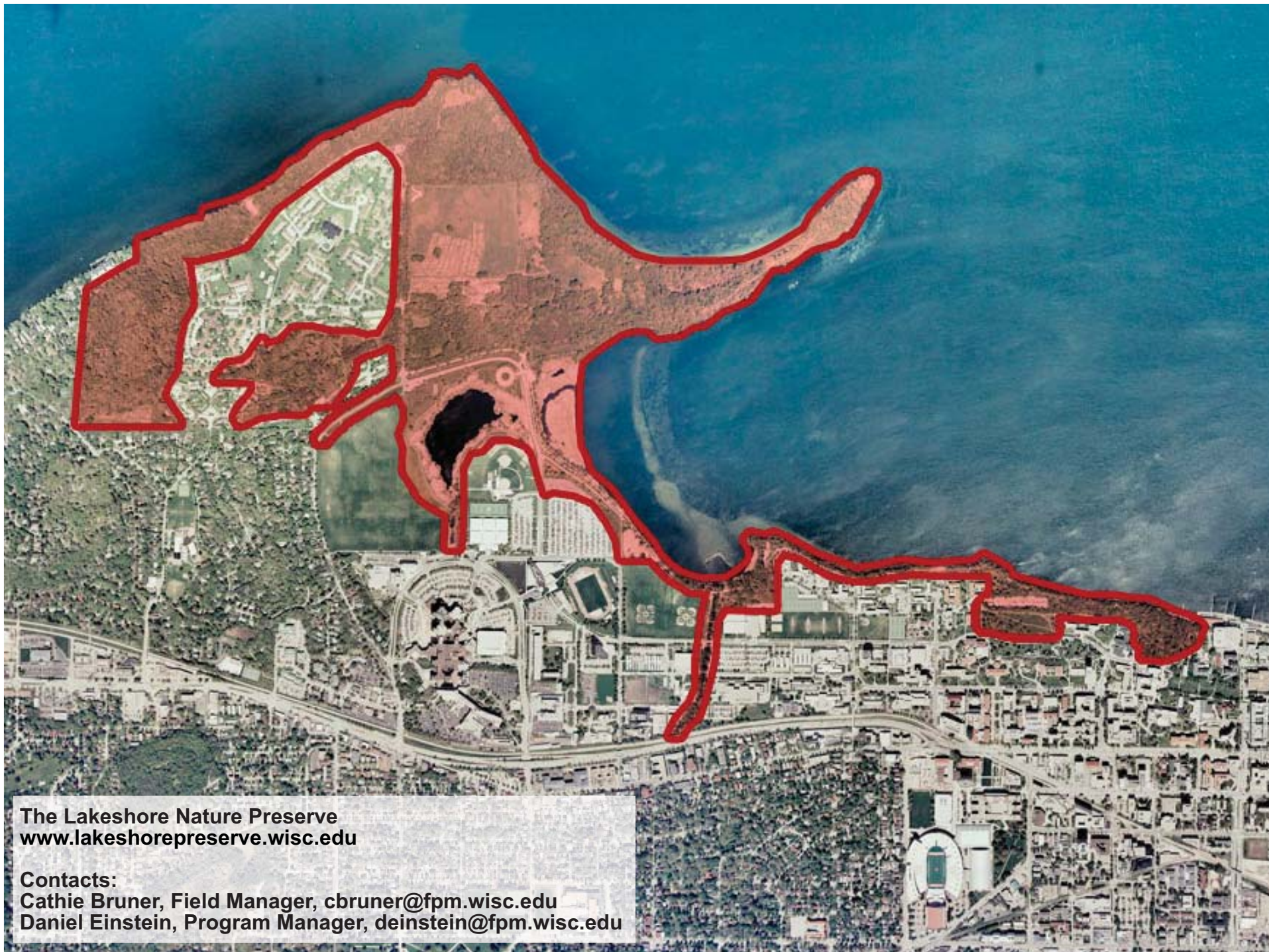


*Wheeler Ring UW-Madison Arboretum  
Photo courtesy of William Cronon*



*Picnic Point from the Air  
Photo courtesy of William Cronon*





**The Lakeshore Nature Preserve**  
**[www.lakeshorepreserve.wisc.edu](http://www.lakeshorepreserve.wisc.edu)**

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