Ice Age National Scenic Trail
America's Great Outdoors (AGO Project):
Ice Age Complex at Cross Plains (Dane County)
to the Aldo Leopold Shack (Sauk County)

Long-Range Interpretive Plan (LRIP)

FULL TEXT DRAFT

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Interpretive Planning Services
Harpers Ferry Center
P.O. Box 50
Harpers Ferry, WV 25425

By:
Interpretive Solutions, Inc.
732 Westbourne Road
West Chester, PA 19382

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LONG RANGE INTERPRETIVE PLAN
FOUNDATION DOCUMENT
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INTRODUCTION

The Ice Age National Scenic Trail (Ice Age NST) is one of only eleven such trails in the United States. The trail follows the edge of the extent of the Wisconsin glaciation of some 10-30,000 years ago, highlighting an amazing array of glaciated features that includes moraines, kettles, kames, drumlins, erratics, kettle lakes, potholes, eskers, marshes, meltwater channels, gorges, ice-walled lake plains, outwash plains, and glacial lakebeds. These features are considered to be among the world's best examples of a glaciated landscape.

While many of the nation's 19 National Historic Trails have interpretive plans, the Ice Age NST is one of the first National Scenic Trails to create one. This plan will center on the (approximately) 70-mile segment of the trail that stretches from the Ice Age Complex at Cross Plains (Dane County) to the Aldo Leopold Shack (Sauk County). This segment was recently identified by the Federal government as one of 100 America's Great Outdoors (AGO) projects. (Two projects were selected in each state; the other Wisconsin project is the Lake Michigan Water Trail). These projects center on outdoor recreation, and are intended to help Americans connect or reconnect with nature, with special emphasis on urban populations and youth. With the AGO segment of the Ice Age Trail within a two-hour drive of a population of over 11 million people (including Milwaukee and Chicago), it is a prime candidate to help the nation meet those goals. In addition, the segment supports AGO goals that include large landscape conservation, preservation of natural and culturally significant areas, and support for creative public-private partnerships.

The trail segment selected for the AGO program – and for interpretive planning – includes two National Scientific Reserves (Cross Plains Complex and Devils Lake State Park), the Baraboo Range, which is the Midwest's largest National Natural Landmark, and the Leopold Shack, a National Historic Landmark. The LRIP may serve as a model plan for the interpretation of other Ice Age Trail segments in the future.

The AGO segment of the Ice Age NST presently includes two operating visitor contact stations, and one planned for the future. The contact stations are the Visitor Center and Nature Center at Devil's Lake State Park, and the Aldo Leopold Center. A future visitor center will be located at the Cross Plains Complex. While the visitor and nature centers offer opportunities for interpreting the trail's stories, the LRIP focuses on the trail only, not on interior, museum-style exhibits.

ABOUT THE LONG-RANGE INTERPRETIVE PLAN (LRIP)

The National Park Service (NPS) has adopted a unified planning approach for interpretation and education. This approach combines planning for interpretive media, personal interpretive services, and education programs as a single initiative. The Long-Range Interpretive Plan is intended to help parks identify target audiences, clarify

objectives, and make programming choices. It defines the overall vision and long-term interpretive goals of the park, including recommendations for the best mix of media and personal services that will effectively convey park themes, and serves as a guide to effective, goal-driven interpretation by defining realistic strategies and actions that work toward achievement of those goals.

Although LRIPs share common elements, each is customized to meet individual park needs. While it considers past interpretive programming, the LRIP is primarily a forward-looking document that concentrates on actions needed to create or sustain a vigorous and effective interpretive program for the future. It defines realistic strategies and actions that work toward achievement of the interpretive goals.

The Long-Range Interpretive Plan process features two phases. One, the Foundation phase articulates significance, themes, and target audiences. The Foundation Document addresses those elements of the plan, and includes a review of existing conditions.

The second phase of the LRIP process recommends interpretive services, media, and partnerships for the site.. A Full Text Draft, which includes the revised Foundation Document, articulates those elements, and, after review, the Long Range Interpretive Plan is finalized.

While the LRIP for the Ice Age Trail references and is based in part on elements of a recently completed General Management Plan (Record of Decision 2013) for the 1,700-acre Ice Age Complex at Cross Plains, the LRIP for the AGO-designated segment of the Ice Age NST is a separate, stand-alone document, with significance statements and primary interpretive themes centered specifically on the trail.

LEGISLATIVE BACKGROUND

The idea for the Ice Age Trail began with a Milwaukee lawyer named Ray Zillmer in 1958, who had a vision of a long, linear park winding through Wisconsin along the glacier's terminal moraine. In 1964, Congress directed the Secretary of the Interior to designate collections of the most significant geologic features left by the last glacial advance as the Ice Age National Scientific Reserve, whose purpose is to protect, preserve, and interpret Wisconsin's glacial landscape features. As a result, nine sites were identified as official units of the preserve. (They are Two Creeks Buried Forest, Kettle Moraine State Forest North Unit, Campbellsport Drumlins, Horicon Marsh Wildlife Area, Cross Plains Complex, Devils Lake State Park, Mill Bluff State Park, Chippewa Moraine State Recreation Area, and Interstate State Park. The entire trail is within the state of Wisconsin. In 1980, Congress recognized the national significance of the Ice Age Trail by authorizing it as a National Scenic Trail through an amendment to the National Trails Systems Act in 1980 (Public Law 96-370; 16 USC 1244 (a)(10)). The Ice Age Trail passes through six of the nine Scientific Reserve Units. In 1987 the State of Wisconsin named it Wisconsin's first (and, to date, only) State Scenic Trail.

PURPOSE

Purpose statements describe why a site was set aside and what specific purposes exist for it. The purpose of the trail as stated in the Ice Age Complex at Cross Plain's General Management Plan was adapted to apply to the AGO trail segment. The purpose of the Ice Age NST, AGO segment, is:

- *To ensure protection, preservation, and interpretation of the nationally significant resources and values associated with continental glaciation in Wisconsin, including moraines, erratics, potholes, outwash plains, kettle holes, tunnel channels, drumlins, swamps, lakes, and other reminders of the Wisconsin Ice Age.*

- *To establish a superlative segment of the Ice Age National Scenic Trail and provide information and interpretation about the trail to the public at significant sites along its route.*

- *To provide outdoor recreational and educational opportunities in support of and compatible with the conservation and enjoyment of the nationally significant scenic, historic, natural, and cultural resources along the trail.*

STATEMENTS OF SIGNIFICANCE

Significance statements describe what is distinctive about the combined resources of the trail. The statements can reflect natural, cultural, scientific, recreational, and inspirational values, as well as other aspects. These statements summarize the importance of the trail to the nation's natural and cultural heritage. The significance of the Ice Age NST is:

- *Nowhere are the marks of continental glaciation upon the land more impressive than along the Ice Age National Scenic Trail and in the Ice Age National Scientific Reserve units in Wisconsin. The meandering landscape that exhibits the marks of the glacier's farthest advance is a showplace of moraines, kettles, drumlins, erratics, kettle lakes, potholes, marshes, meltwater channels, gorges, outwash plains, and glacial lake beds.*

- *The Ice Age National Scenic Trail's path of glacial features provides outstanding opportunities for recreation, education, scientific observation, citizen science, inspiration, solitude, and enjoyment.*

- *The Ice Age National Scenic Trail provides outstanding opportunities to observe, monitor, and understand the impacts of environmental conditions.*

- *The AGO segment of the Ice Age National Scenic Trail offers outstanding biodiversity and remarkable scenic values while linking several nationally*

significant sites, such as the Baraboo Range (the Midwest's largest National Natural Landmark) and the Aldo Leopold Shack and Farm (National Historic Landmark) – all within a few hours' drive of 11 million people.

PRIMARY INTERPRETIVE THEMES

Primary interpretive themes describe what needs to be interpreted in order to provide people with opportunities to understand and appreciate the park's purpose and significance. They embody the most important ideas or concepts communicated to the public about the trail. They convey the significance of the resource, and highlight the links between tangible elements, intangible meanings, and universal concepts that are inherent in the park's resources. The themes connect resources to larger processes, systems, ideas, and values, and emphasize the relevance of park stories. They define the core content of the educational opportunities the park offers, and serve as the building blocks upon which interpretive services and educational programs are based. The primary interpretive themes for the trail are:

- *The Landscape:* The Ice Age National Scenic Trail landscape and its features uniquely illustrate the contrast between glaciated and unglaciated landscapes, demonstrating the dramatic earth-shaping power of glaciers, and creating the Wisconsin that we know today.

- *People and the Land:* The landscapes, both glaciated and unglaciated, have affected human migration, settlement patterns, land use, spiritual life, the economy, and values of the land for thousands of years.

- *Environmental Conditions*: The AGO segment of the Ice Age National Scenic Trail, which includes a remarkable range of biodiversity, is a living laboratory for observing, monitoring and understanding how environmental conditions affect the landscape, ecosystems, and the way we live today, and may live tomorrow.

- *Ice Age National Scenic Trail:* The Ice Age National Scenic Trail provides a range of benefits to individuals and communities: spiritual; health/wellness; opportunities to leave a mark and contribute to the future, to strengthen family and community ties, and to reconnect with and explore nature; connecting communities both physically and socially; a connection to the past; a celebration of regional identity; and a reinforced sense of place. It is a partnership park that would not exist without the collaborative efforts of a multitude of agencies and volunteers.

- *The America's Great Outdoors Project.* The AGO segment of the Ice Age National Scenic Trail was designated to protect our natural heritage and to create recreational opportunities through federal, state, tribal, non-profit,

and local community partnerships. While the other theme statements in the LRIP may apply to other sections of the Ice Age NST, the AGO theme is focused specifically on that trail segment, and centers on outreach to urban and youth audiences.

- *Stewardship:* Restoring and maintaining healthy and diverse ecosystems along the Ice Age National Scenic Trail connects people with the land, helps inspire development of a land ethic, and creates active stewardship opportunities.

Each of the primary interpretive themes embodies abundant potential topics for interpretation. Some of these are listed below. Please see "Next steps for the Long-Range Interpretive Plan," below (in the Recommendations section), for a description of the next steps involved in capturing the meaning and relevance of each of these topics, along with how and where to interpret them.

- *The Landscape:* the process of glaciation; comparison of glaciated and unglaciated landscape; how glaciated landscape features were formed; the age of visible features on the landscape; and where within the glacier various features are formed.

- *People and the Land:* the impact of the landscape on human migration, settlement patterns, land use, and the economy; land management strategies of Native peoples; effigy mounds; prominent conservationists from the area; cultural history of the region.

- *Environmental Conditions:* surviving remnants of native vegetation; biodiversity and geology's impact; natural communities; green corridor concept; natural communities; the dynamic landscape; topography; soils; climate; environmental conditions; phenology; conservation movement.

- *Ice Age National Scenic Trail:* Partnership park managed by NPS, DNR, Ice Age Trail Alliance (IATA), and others; built and maintained by an outstanding volunteer force; links communities along the trail physically and socially; protection of significant features; construction of trail and support facilities; provides a spiritual connection with nature; strengthens people's ties as they work together to create and preserve the trail and its values; through-hikers (all 1,200 miles) and section hikers (including the "Thousand-Milers").

- *America's Great Outdoors Project:* the Department of the Interior's AGO initiative; AGO's promise to future generations; landscape conservation and partnerships; increasing public awareness of the importance of conservation; restoration of ecosystems within the Ice Age Trail corridor and surrounding areas; public land management; activities for young adults; goals centered on attracting new trail users, including minority and urban populations.

- *Stewardship:* ecosystem management strategies; long tradition of stewardship; volunteer contributions to ecosystem management; invasive species; restoring and maintaining healthy sustainable ecosystems; preservation of scenic views, biodiversity, and geological features; development of a land ethic; the rewards of nurturing a landscape (it nurtures us back); learning the value of nature; connectedness/interdependence between humans and nature; investment in the future; engaging with one's world.

MANAGEMENT GOALS

These goals describe management's intent in offering interpretive and educational programs and services. The goals for interpretive products and services are:

- To create public awareness of the Ice Age Trail and the value it brings to our lives—scenic, recreational, wellness/health, scientific, spiritual and personal relevance.
- To connect people on the trail with the significance of the landforms they will see; and to help them understand how those land forms were created and to imagine the scene 20,000 years ago when the glacier was still present.
- To create public awareness that the Ice Age Trail is a Long Distance National Scenic Trail that is used as a backbone connecting public lands and other trails across the state.
- To connect urban populations to the great outdoors for their enjoyment and to gain appreciation for the natural environment.
- To provide youth with a nature immersion experience and environmental education, a place for creative play, and to inspire them to be the land stewards of the future.

AUDIENCE SEGMENTS

The basis for categorizing audience segments for the interpretation and education program lies in whether or not a particular audience requires communication in a way that is distinct from that of the general audience. Factors to consider include the life experiences of the individual or group, level of education, learning styles, language, cultural traditions, time available for interaction, and others. The Ice Age NST's audiences are:

- *Local audience.* Given the nature of the trail and its connection to trail communities, this may be the Ice Age NST's most important audience. Not only does it include casual users of the trail for daily exercise and dog walking, but it also includes opportunities for citizen science and volunteering. The local audience will need interpretive strategies that will sustain their interest and keep them returning to the trail.

- *General audience.* The general audience for the trail could be defined as "out-of-town-travelers." They arrive by car, will observe landscape features and experience interpretive media, but may or may not hike or walk on the trail.

- *Curriculum-driven audience.* This audience comes with specific curriculum goals in mind. One target age group is 7th grade students, who study Wisconsin geology. Other targets include scouting groups that are meeting badge or community service requirements, high school and college students with service requirements, home-schooled students, charter schools, private schools, and the senior study group, Road Scholar.

- *Virtual audience.* A certain number of visitors will access the Ice Age NST via the NPS and Ice Age Trail Alliance webpage. These include people who are planning to visit, as well as those for whom the internet will be their only experience of the trail. The virtual audience can also be considered those who access interpretation via smart phone applications, although they are more likely to be on or near the trail when they do so.

- *Families.* This audience overlaps with others, but the emphasis is on connecting with family, getting children outdoors, and teaching whole families outdoor skills so they can continue to enjoy nature on their own.

- *Recreation audience.* This year-round user group includes hikers, walkers, and winter sports enthusiasts. They come to the trail for fun and activity more than interpretation, so the interpretive elements need to be strategically posed in order to reach them. Services for this group may go beyond interpretation, to facilitating their experience by providing amenities, "concierge"-style services, and even a shuttle. Rather than "dog walkers," this audience includes those who like to hike with their dogs. In addition, themes might be presented differently to different audiences, not only through a variety of media, but emphasizing specific aspects of those themes.

- *Non-English speakers.* This audience may require multilingual media.

- *Minority and urban populations.* This audience may require special outreach and additional research into how they can best be reached. Urban outreach strategies employed by other AGO units may provide a starting point to development of the Ice Age NST's own approach to these audiences.

- *Physically/cognitively challenged audience.* Universal design concepts will make interpretive media accessible to most. Physical adaptations to

the trail where feasible will support not only differently-abled visitors, but also families with small children and senior citizens.

DESIRED VISITOR EXPERIENCES

Statements of desired visitor experiences describe how the park's interpretation and education program facilitates intellectual, inspirational, emotional, and physical experiences for visitors. These statements describe what visitors to the park would like to learn, feel, do, or experience when visiting the park (either in person or remotely). These experiences for the Ice Age NST include:

- Visitors want to experience the trail as a place to escape the stress and chaos of everyday life, where they can find solitude, serenity, silence, and spirituality as they connect with the natural world, finding personal relevance in their experiences.

- Visitors want to experience the sights and sounds of nature. They want to see and smell spring wild flowers and other plants, trace with their fingers the striations in bedrock left by the glacier, hear birdcalls, and see animals or their sign.

- Visitors want to understand how the glacial features they see were formed. They want to learn to read the landscape, to identify each kind of feature, to understand how each was created, and to visualize the land as it may have looked thousands of years ago when the glacier was present. They want to learn how the glacial landscape has influenced the way people have lived on the land for millennia.

- Visitors want to hike the trail as a means to building and maintaining physical fitness, health, and strength. They want to be able to hike safely and confidently.

- Visitors want to experience beautiful natural views of pastoral and agricultural landscapes that are free of intrusions such as houses, roads, and other signs of modern development.

- Visitors want to connect with families and friends while connecting with nature.

ISSUES AND OPPORTUNITIES

This section notes issues and opportunities inside and outside the park, resource-based issues, and internal issues that affect interpretation and education. Collectively, it reflects

the perspectives of upper management, as well as staff members and stakeholders. Issues and opportunities for the Ice Age NST include:

- **Opportunities to reach new audiences.** The selection of a segment of the Ice Age NST as part of the America's Great Outdoors (AGO) project provides a superlative opportunity to identify the trail's educational and interpretive potential resources, and to serve new audiences.

    o Many people are not aware of the national significance of the trail: that it is in fact a "National Scenic Trail."

    o Service to urban audiences will require new, innovative marketing strategies.

    o The "No Child Left Inside" movement provides excellent opportunities for the Ice Age NST to participate in a nationwide initiative to get more children acquainted with and comfortable in natural surroundings.

    o The trail provides opportunities for classroom field trips, but administering and delivering school programs can be difficult given current fiscal limitations and constraints on students' time.

    o The Ice Age Trail Alliance has sponsored an audience survey by UW-Whitewater, funded by a transportation grant, that provides valuable information about visitor demographics and the trail's economic impact. Please see below for highlights of the study. The full Joint Effort Marketing Report is available at http://www.iceagetrail.org/economic-impact.

    o The plan provides the opportunity to identify new technologies to interpret the trail and reach new audiences.

- **Need for improved user services.** The trail and its connecting routes can seem confusing and hard to learn. Good orientation to the trail, including pre-visit, pre-hike, and on-trail locations, represent a critical need. There is also a need for more highway signs directing people to trail segments.
    o There is a need for public transportation to trailheads if the trail is to effectively serve urban audiences.

    o There is a need for more places to camp along the trail.

- **Support.** The Ice Age NST is supported by a strong triad composed of the National Park Service (NPS), Wisconsin Department of Natural Resources (DNR) and the Ice Age Trail Alliance (IATA). The AGO segment of the trail is also supported by the Aldo Leopold Foundation, Baraboo Range Preservation Association, Natural Conservancy, and Dane, Sauk and Columbia County Parks

and Recreation Departments. In addition, a national organization, the Partnership for the National Trails System, assists with lobbying expertise and federal funding requests; and the Knowles-Nelson State Stewardship Program and the Land and Water Conservation Fund provide monies to protect lands for the trail.

- o Many townships, municipalities, and conservation organizations have also been supportive of the Ice Age Trail.

- o While the trail has many strong partners, there remains a need for better communication among groups in the region that share similar mission, values, and goals.

- o Twenty-one trail chapters for the overall trail provide an exceptionally dedicated group of volunteers who handle nearly all trail construction and maintenance. This devoted corps of volunteers is the pride of the National Park Service. The Dane, Sauk, and Columbia County chapters are active in supporting the AGO segment of the trail.

- o The Mobile Skills Crew (MSC), in its tenth year of operation, is a statewide group of volunteers, trained in advanced crew leadership and trail construction techniques, who bring their knowledge and expertise to coordinate, manage, and train volunteers for local trail-building projects. The program provides invaluable service by bringing professional quality management and sustainable trail standards to the trail development system.

- o The Swamplovers project at Table Bluff, a private nonprofit organization that is connected to the Ice Age Trail, provides an excellent example of how hunting and conservation can exist in harmony.

- **Trail-building.** The trail as planned statewide is only half-complete. Land acquisition to connect existing trail segments continues to provide both challenges and opportunities as management seeks to fulfill the plans for the whole trail.

  - o Approximately 60% of the 70-mile AGO Ice Age NST through Dane, Southern Columbia County and Sauk County still needs to be acquired and the trail constructed.

  - o Acquisition within the Ice Age Complex at Cross Plains continues with approximately half of the park in public ownership. Purchase of a few keys parcels will allow the Ice Age NST to cross the property. The National Park Service purchase of the former Wilkie farmstead provides new opportunities for interpretation and education, along with the responsibility of deciding on the best future use for the existing farm buildings, and on the most appropriate kinds of visitor services to be provided at the Complex.

- **Land stewardship.** Areas along the Ice Age Trail that are currently protected require regular maintenance and vegetative management. As part of the mission of the Ice Age Trail NST, agencies and volunteers are also enhancing and restoring the land surrounding the trail to indigenous native plant communities.

    o   There is a great deal of interest locally and statewide in prairie re-creation and restoration, a trend that strongly supports the Ice Age NST mission. However, there is a need for education of the public regarding the nature of the pre-contact landscape in order for such programs to be well received. The public frequently has concerns over the necessary removal of trees and shrubs, and the burning required to create a prairie.

- **Interpretive media.** Although not all visitors will have smart phones, there is widespread support for using smart phone technology and other electronic media to interpret aspects of the glacial landscape.

    o   DNR has recently produced a film that includes a series of animations that show the process of glaciation and how the resulting landforms were created.

    o   There is a need to extend interpretation through publications and souvenirs that visitors can bring home with them.

- **A planning model.** The LRIP for this trail segment may serve as a model for planning for other Ice Age Trail segments, and perhaps even for other national scenic trails.

EXISTING CONDITIONS

BACKGROUND

The Ice Age National Scenic Trail is a work in progress. As planned, the trail is about half finished, with more than 600 miles complete out of the projected 1,200 of the final route. However, connecting routes, many of them along public roads, have been identified that make it possible even today to hike the entire 1,200-mile route. The partners who manage the trail are continually in the process of carrying out the Corridor Planning Process to identify a general route for the trail in specific counties, and to negotiate land purchases that will connect existing trail segments.

The trail, the "brain child" of Milwaukee lawyer Ray Zillmer back in 1958, winds through the state along the terminal moraine of the last Wisconsin glaciation. Hikers on the trail have the opportunity to observe one of the most significant collections of glacial features to be found anywhere in the world, including moraines, kettles, kames, drumlins, erratics, kettle lakes, potholes, eskers, marshes, meltwater channels, gorges, ice-walled lake plains, outwash plains, and glacial lake beds. As they hike, they encounter wetlands, bogs, lakes, prairies, oak savannas, forests, farmland, upland habitat, the shores of Lake Michigan, and even towns and cities. Like the famed Appalachian Trail, the Ice Age Trail is mainly intended for off-road hiking. The eastern terminus of the trail is in Potawatomi State Park in Door County. The trail runs through 30 counties, with the western terminus in Interstate State Park, an Ice Age National Scientific Reserve Unit at St. Croix Falls in Polk County on the Minnesota border.

The trail is managed by a "Triad," a partnership of the National Park Service, the Ice Age Trail Alliance (IATA), and Wisconsin Department of Natural Resources (DNR). The Triad works together to preserve the natural landscape on and near the trail, which is often threatened by residential, industrial and energy development. The National Park Service is the primary administrator, providing planning and compliance, sign systems, tools and funding to support partners and trail construction. DNR coordinates the involvement of state agencies, leads the land acquisition process, and participates in the planning, development, and management of trail segments. The Alliance promotes the trail, participates in planning and land acquisition, and trains and coordinates the efforts of volunteers who build and maintain the trail.

The "prehistory" of the trail goes back nearly 30,000 years ago, when two-thirds of what is now the state of Wisconsin was covered with enormous glaciers up to two miles thick. The glaciers scraped and sculpted the landscape as they advanced, and left behind deposits as they retreated, including some erratics that were carried from a thousand miles away. Their gushing meltwaters radically shaped the land.

The unique glacial landscape has long been a source of pride and wonder to its inhabitants. Anthropologists believe that it may have inspired the ancient Mound Builders to create their own versions of the glacial features they observed on the landscape, such as drumlins, eskers, and kames, by reflecting those shapes in the rich array of effigy mounds they built hundreds of years ago.

In 1964, Congress directed the Secretary of the Interior to work with the governor of Wisconsin to create an Ice Age National Scientific Reserve (Reserve), formally established in 1971, to protect, preserve, and interpret the tangible elements of the Wisconsin glaciation. Congress authorized the Ice Age NST in 1980 as a Long Distance Trail that would connect most of the Units of the Reserve. In 1987, the state legislature designated the trail as a Wisconsin State Scenic Trail.

In 2010, President Barack Obama's administration launched the America's Great Outdoors (AGO) Initiative, calling for a grassroots approach to conservation and ways to reconnect Americans, especially youth and urban populations, with their natural heritage. Two projects were selected for each state. One segment of the Ice Age National Scenic Trail – from the Ice Age Complex at Cross Plains (Dane County) to the Aldo Leopold Shack (Sauk County) – was selected for the AGO project due to its proximity to and easy access for a large urban population. The LRIP for this segment of the trail is intended to facilitate the goals of AGO by planning for outreach to new audiences, to encourage more recreational use of the trail, and to provide effective interpretation of the trail segment's stunning array of glacial features.
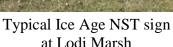
INFORMATION AND ORIENTATION

Information about the trail is available from a number of sources. The National Park Service website provides basic information, including an overview map and a link to *Ice Age: Geology of Ice Age National Scientific Reserve of Wisconsin* (NPS Scientific Monograph No. 2, 1974) by Robert F. Black. The Department of Natural Resources maintains an on-line interactive map viewer on its website that allows hikers to print out detailed maps of the trail. The Ice Age Trail Alliance website offers downloadable maps and descriptions of each segment, and the Alliance publishes the *Ice Age Trail Atlas* featuring 105 detailed, colored hiking maps, along with the I*ce Age Trail Companion Guide* that describes the trail segment by segment.

The *Atlas* and *Companion Guide* are invaluable for orientation to the trail, as trail segments are not yet continuous; it can be confusing to hikers and other visitors as to where the trail is located and how the connecting routes link the segments. The *Companion Guide* is particularly valuable for long distance hikers in finding support facilities such as campsites and in providing background and highlights on particular trail segments.

For visitors who would like more in-depth information, *Geology of the Ice Age National Scenic Trail* (Madison: University of Wisconsin Press, 2011), by David M. Mickelson, Louis J. Maher, Jr., and Susan L. Simpson, provides a wonderfully accessible account of the trail's features, including "Science Briefs" that explain the science behind glaciers and how different glacial land forms are created, as well as a segment-by-segment description of landscape elements.

On the ground, the trail is indicated in a variety of ways. There are simple wooden routed signs, upright signs that feature a map of the whole trail, standard Park Service-style wayside exhibits and other interpretive signs, and kiosks. The trail for the most part is sustainably built with native soil, and with boardwalks, bridges and other structures placed in wet areas.

| Typical Ice Age NST sign at Lodi Marsh | Ice Age Trail Kiosk, Merrimac Ferry | Ice Age NST sign near Devils Lake SP |

THE AUDIENCE

Anecdotally, it is clear that many users of the trail reside near it and use it to walk their dogs, improve physical fitness, or catch a breath of fresh air at the end of a long day. However, more than fifty hikers have achieved the designation of "Thousand-Miler" by hiking the entire length of the trail, either as through-hikers, or segment by segment.

Interestingly, when stakeholders of the trail were queried during the planning process about what population segments utilize the trail, the answers seemed to vary by segment. For example, Dane County stakeholders cited growing numbers of college-age youth and young families on the trail, while Sauk County stakeholders felt this population under-utilizes the trail.

In 2012, the Ice Age Trail Alliance commissioned an audience survey and economic impact study through Economic Development Partners and the Fiscal and Economic Research Center (FERC) at the University of Wisconsin-Whitewater. Responses for the Joint Effort Marketing Report were collected from more than 1,010 trail users through online, mail, and field surveys at various access points along the Ice Age Trail. Key findings included:

- Based on the field survey results, an estimated 1,252,685 people use the trail annually.
- Nearly 93 percent of those surveyed were repeat users and used the Trail an average of 10.26 times per year. Internet responders (targeted through the organization's email list) unsurprisingly used the trail 30 or more times per year.

- 51.1% of users seek out new sections of the trail, while 37.4% enjoy returning to familiar trail segments.
- Average number of people in the party was 4.86.
- Average age of respondents: 38
- On-trail respondents were equally divided between women and men, but the online responses broke down at 60% male, 40% female.
- 32.6% of respondents had 4-year college degrees, and another 19.4% had master's degrees, for a total of 52% of users with college degrees. Among internet responders, 75.3% had a college degree or higher.
- The overwhelming majority of respondents learned about the trail from family and friends, followed by the internet.
- 47.7% of users did not take travel distance into consideration when planning their trips.
- 60% have a household income greater than $50,000, while 26.5% had incomes of under $40,000.
- 51% of those surveyed stayed overnight in the region, with the balance being day-trippers. 52% of those who stayed overnight stayed in tent campgrounds.
- Hiking and geocaching were the highest ranked trail activities.
- Users from 31-45 years old with incomes of $40,000-59,000 were identified as a highly motivated target audience.
- The number of users in the 18-30-year-old target group seems to be growing. More than 60% in this age group use technology to connect to the outdoors, including online research, social media, blog sites, and QR codes.
- Madison, metropolitan Milwaukee, and northern Illinois were identified as primary target markets for the region. Secondary markets include Minnesota and Iowa.

EXPERIENCING THE TRAIL

This section refers to the AGO-designated section of the trail, from the Cross Plains Complex to the Aldo Leopold Shack.

Ice Age Complex at Cross Plains. The Cross Plains Complex is a 1,700-acre site near the village of Cross Plains, centered on the former Wilkie farm that includes an outstanding collection of glacial landforms. It is one of the nine units in the Ice Age National Scientific Reserve. The most prominent features of the Ice Age Complex are a spectacular gorge that was carved out by meltwater, an array of glacial erratics (some of which have been traced to their origin northeast of Lake Superior), four proglacial lakes, and great views to the Driftless Area, the Johnstown moraine, and areas of glacial outwash. The Complex is an especially good point for comparing views of driftless (unglaciated) and glaciated terrain. The Wilkie farm buildings include a stone house, parts of which date to the 1850s, a barn, and garage. The park applied for National Register of Historic Places designation for the farmhouse, a 1950s-era addition which had been designed by prominent local architect William Kaiser. Designation was denied on the grounds that the house was not a strong example of Kaiser's work. The potential

administrative, interpretive, or maintenance use of the buildings has not been determined. The house features beautiful views of driftless terrain, as does a bluff located behind the barn. The NPS will evaluate a number of alternative scenarios to develop the Complex, including re-use of the existing buildings, and/or a new visitor center with broad views of the glaciated and driftless terrain.

Shoveler Sink, managed by the U.S. Fish and Wildlife Service, is a former ice-dammed lake that still holds shallow water, especially during wet weather. There is a sinkhole at its northeast end. The lake features an excellent view of the terminal (Johnstown) moraine. In addition to hiking, visitors come to Shoveler Sink to hunt waterfowl and pick berries.

One of the most spectacular features in the Complex is located at the center of the site along a hiking trail just off Old Sauk Pass. A deep gorge carved by glacial meltwater is found here that is considered very significant. Located adjacent to it are erratics that were dropped along the glacier's edge, and limestone bedrock outcroppings. Habitat within the gorge is southern mesic, with remnants of oak savanna surrounding it. The property that is home to the gorge is currently owned by DNR. The NPS and DNR plan to make the trail to the gorge from the Wilkie farmstead accessible; and DNR and Ice Age Trail Alliance chapter members are currently in the process of restoring the property to oak savanna habitat.

Black Earth Creek, a Class A trout stream, runs through the Complex. It is located in the Black Earth Trench, a very large glacial drainageway that contains a 300-foot-thick bed of sand and gravel fill, the results of glacial outwash. Today State Highway 14 also winds through this drainageway.

The center of the Complex is located within a seven-to-eight square mile road-less area. The night sky and sound environment are relatively free of intrusions. Potential interpretive topics in addition to the glacial features include restoration of native plant communities, sustainable habitat, climate change, and American Indian use of area resources and travel routes. There are 30 schools within 10 miles of the Ice Age Complex.

Cross Plains Segment. This 2.7-mile segment crosses Black Earth Creek and goes right by the Ice Age Trail Alliance headquarters in the Village of Cross Plains. Visitors can stop at the headquarters for maps and other information and meet the IATA staff. Driftless Area bedrock hills lie north of the Village of Cross Plains where the Ice Age Trail winds up to offer great views both to the south and east. This part of the trail features a prairie restoration in progress.

Table Bluff Segment. Table Bluff Segment extends northwest of the Village of Cross Plains for 2.4 miles through the Driftless Area. On the south end, the trail meanders for 1.5 miles on the Swamplovers property. This property, which has been developed by a private nonprofit organization called Swamplovers, is well known for its biological diversity, displays of wildflowers, and the quality of the prairie and oak savanna

restoration. A climb up the steep rocky slopes of the bluff yields a beautiful view of the driftless region and a valley filled with glacial outwash. This landscape offers many resources, including native vegetation, wildlife communities, and geology.

In 1986, five local men bought this 450-acre parcel near Table Bluff as hunting lands and as a place to teach youth about hunting. Once the lands were purchased, they began to clear brush on the bluff and found dormant native wildflowers (shooting stars). As a result, they committed to restoring the former ecosystem, which includes 150 acres of prairie, oak savanna, oak openings, wetlands, and wetland prairies. The men created a 501(c)3 nonprofit and a $1.1 million endowment to support the restoration. The US Fish and Wildlife Service and the Ice Age Trail Alliance have contributed toward the prairie restoration, with much of the work attributable to the leadership of the Swamplovers Foundation, Inc. The northern 0.9 miles of this trail segment, owned by the Ice Age Trail Alliance, leads to Table Bluff, a distinctive rock formation composed of St. Peters sandstone.

Indian Lake Segment. Indian Lake is a 450-acre Dane County park that hosts about 80,000 visitors per year. The park features glacial outwash, erratic boulders, enormous tunnel channels, and a large kettle, which is occupied by Indian Lake. Also found within the park is a well-known small chapel. Trees include a grove of paper birch, as well as old oaks on the hilltops that are gradually being crowded out by younger hardwoods. Before settlement brought a halt to frequent fires, the area around the lake was mostly prairie.

Lodi Segments. Lodi segments include the Lodi Marsh, Eastern Lodi Marsh, and City of Lodi Segments. The township and city of Lodi have been effective, supportive partners. The IATA's Summer Saunters program, a hiking program for elementary school children that helps them develop healthy lifestyles and appreciation for the natural environment, originated there. Lodi schools make frequent use of the trail and its features. The grand view from the Lodi golf course is from the top of a drumlin, and drumlins are a major glacial feature visible in this area. There is a beautiful loop trail through the Lodi Marsh State Wildlife Area that features an Education Trail with interpretive signage; a printed guide is also available. A State Natural Area designation overlays a portion of the State Wildlife Area that contains the marsh, which is biologically rich. The State Wildlife Area is located just outside the city of Lodi. It features views of a tunnel channel, Central Bluff and Hawks Bluff (partially submerged drumlins), Gibraltar Rock, the Baraboo Hills, and the marsh. The trail goes right through Lodi, which offers hikers some nice restaurants, pubs, shops, and a German bakery. Total trail mileage here is approximately 5.0 miles

Grover Pertzborn Segment. This 1.6-mile segment winds around the north side of a drumlin. A parking lot along County Trunk J provides access to it.

Gibraltar Segment. This 2.4-mile trail segment includes a state park centered on a huge sandstone bluff, Gibraltar Rock, a preglacial feature. Spectacular views of the glaciated landscape from the top include the Wisconsin River, the Baraboo Hills, a bog, and a

scenic valley. The bluff face has a State Natural Area designation because of endangered and threatened plants, and the bluff is a spectacular post from which to watch migrating raptors riding thermal breezes near the cliff face. During the 1960s, a road was built to the top of the bluff where a picnic area was placed. Today, the picnic area has been removed and the road has been allowed to naturalize.

Merrimac Ferry Segment. The ferry is touted as the only part of the Ice Age Trail that moves. It is the last inland ferry in Wisconsin, making a half-mile crossing of Lake Wisconsin, and passage is free of charge. A large wayside exhibit with a map of the trail is planned for this location; an Ice Age NST kiosk is already in place on the south side of Lake Wisconsin (actually a reservoir created by damming the Wisconsin River) that addresses regional and local trail information. On the north side of the river, the trail passes through the 1,800-acre Merrimac Preserve, a parcel of forest, prairie, savanna, wetlands, and streams owned and managed by the Riverland Conservancy, formerly the Wisconsin Power and Light Stewardship Trust, Inc The Preserve provides a wildlife corridor between the Baraboo Hills and the Wisconsin River.

Devils Lake Segment. This approximately 10-mile-long segment is part of the Ice Age NST's Devils Lake Unit. It includes Devils Lake State Park, Wisconsin's third oldest, largest, and most visited state park. Perhaps the park's most striking features are the ancient quartzite walls (1.6 billion years old) of the Devils Lake gorge. Here the terminal moraine lies on top of and wraps around the bluffs that were largely left untouched by the glacier. The lake was formed when the ice left behind a moraine at each end of the lake, creating "plugs" that blocked the flow of meltwater and created the lake. It is unusual in that it does not have rivers or streams flowing in or out of its waters.

Glacial features include the Johnstown moraine and the beds of former lakes dammed by the glacier. Available experiences include hikes on the moraine and spectacular views of the driftless area from the top of the bluffs, as well as views of the lake.

Aldo Leopold Shack and Foundation. The AGO-designated Ice Age Trail segment ends at the Aldo Leopold Shack, the chicken coop that the famed conservationist turned into a rustic country retreat for his family. The family's careful stewardship and restoration of the land inspired Leopold's classic *A Sand County Almanac*. The Ice Age Trail will connect with Leopold Foundation trails, and through America's Great Outdoors, the Shack and the Aldo Leopold Legacy Visitor Center (the Foundation's headquarters), will also be connected via a 3,000-foot boardwalk. The Visitor Center is a spectacular modern building, created from lumber made from the pine trees the Leopold family planted on their farm, and is a LEED-certified platinum-level building. The Aldo Leopold Foundation provides education and interpretation about Leopold's land ethic through classes, seminars, and media productions.

INTERPRETIVE PARTNERS

Partners in interpretation include the Ice Age Trail Alliance, and Wisconsin Department of Natural Resources.

Ice Age Trail Alliance (IATA). The Ice Age Trail Alliance is a 401(c)3 non-profit grassroots volunteer- and member-based organization that works with NPS and DNR to support and protect the trail. The professional staff of seven plus fifteen board members addresses everything from trail layout and construction methods to land stewardship, trail maintenance, volunteer organization and support, and land acquisition.

The IATA got its start in 1958 as the Ice Age Park and Trail Foundation. In the early 1970s, the Ice Age Trail Council was formed to carry out the vision for the trail. The two organizations merged in 1990. In 2009, the name was changed to the Ice Age Trail Alliance. Seven different informal offices along the trail were consolidated into one in 2008 with the construction of the beautiful building that now serves as headquarters, which was made possible through the generosity of the Congressman Henry S. Reuss family. (Congressman Reuss was the first to publish a professional book about the trail, *On the Trail of the Ice Age,* in 1976.) The headquarters location in the village of Cross Plains is ideal: it is right on the trail, close to Madison's population center, close to partner organizations, and close to the Ice Age Complex at Cross Plains. About 20,000 cars pass the headquarters on Main Street each day. The Alliance is funded by multiple public and private sources, including the NPS and WDNR. There are 21 different trail chapters, covering 30 counties. Chapter volunteers work on trail building and maintenance, as well as providing support in the form of meals and refreshments for the workers.

The Mobile Skills Crew (MSC), one of the IATA's signature programs, is celebrating its tenth year of operation. The MSC is a statewide group of volunteers, trained in advanced crew leadership and trail construction techniques, who bring their knowledge and expertise to coordinate, manage, and train volunteers for local trail-building projects. The program brings professional quality management and sustainable trail standards to the trail development system. Depending on the project, the Mobile Skills Crews can number from 30 people to more than 300, and have completed over 70 Ice Age Trail projects to date. Many participants have gone on to join the IATA staff or board leadership.

Wisconsin Department of Natural Resources. The DNR manages the wide range of conservation and recreation functions that would be expected of such an agency. It oversees forest management, environmental protection, water resources, and outdoor recreational activities. It manages licensing and regulation; provides for statewide recreational opportunities from ATV riding to wildlife viewing; and educates the public about recreational safety, outdoor skills, tracking, trapping, angling, and invasive species. It provides a number of services to educators, including access to a web-based program on sustainability called *Green & Healthy Schools*; an ecology unit called *Project Learning Tree*; water education for teachers (WET); and Project WILD, which teaches

about wildlife and responsible human actions. The interpretive resources that DNR brings to the Ice Age NST AGO project are truly exceptional.

Aldo Leopold Foundation. The Aldo Leopold Foundation is a 501(c)3 not-for-profit, donor-supported organization based at the Aldo Leopold Legacy Center in Baraboo, Wisconsin. The foundation's mission is to inspire an ethical relationship between people and land through the legacy of Aldo Leopold. Leopold regarded a land ethic as a product of social evolution. "Nothing so important as an ethic is ever 'written,'" he explained. "It evolves 'in the minds of a thinking community.'" The foundation's membership forms a modern day "thinking community," and the foundation's programs create opportunities for rich, diverse, and productive dialogue with members and others about humanity's relationships to land, allowing the idea of a land ethic to unfold in myriad ways. The foundation has eleven professional staff whose expertise consists of education and land management specialists, ecologists, biologists, and administrative staff.

The Aldo Leopold Foundation owns and manages the original Aldo Leopold Shack and 300 surrounding acres, in addition to several other parcels, and also manages much of the remainder of the 1,800-acre Leopold Memorial Reserve. The foundation is committed to the ongoing restoration of the Leopold Shack and Farm, where, in 1935, Aldo Leopold and his family undertook a revolutionary experiment in returning health to a worn out farm. Celebrated in Leopold's classic, the transformed land now supports vibrant forests, wetlands, and prairie and draws visitors from around the world. First published in 1949, *A Sand County Almanac* has sold over two million copies in ten languages.

PERSONNEL

It would be virtually impossible to list all the individuals who have supported, sustained, and maintained the Ice Age NST throughout the years of its existence. National Park Service personnel assigned specifically to the project include a Superintendent, Trail Manager, two outdoor recreation planners, a part time GIS specialist, and administrative staff. The staff does not include any interpreters. The Department of Natural Resources brings a wide range of expertise to the trail in all fields, from recreation planning to wildlife management, including interpretation and education programs. The Ice Age Trail Alliance staff includes an executive director, manager of field operations, director of land conservation, information systems coordinator, publications coordinator, eastern field representative, GIS specialist, administrative and executive assistants, and a coordinator for the Saunters program. Most important are the many volunteers in 21 county chapters located along the Ice Age Trail that have made possible the creation and maintenance of the trail. In 2012, volunteers contributed over 69,000 hours.

RECOMMENDATIONS

INTRODUCTION

Recommendations for interpreting the AGO segment of the Ice Age National Scenic Trail were created along two tracks: a track that focuses specifically on the goals of the America's Great Outdoors initiative, and a second track that recommends programs, services, and media in general. In addition, three matrices were created (see Appendices B1-3) that provide an inventory of tangible geological, biological, and cultural/historical assets and the rough locations of each along the trail. As planning continues, the topics listed under each interpretive theme will be fleshed out to identify the primary messages for each as they are developed into subtheme statements. Each topic will then be aligned with the appropriate interpretive assets listed in the relevant matrix, creating a "theme map" of the trail segment's essential stories. Placement of interpretive media, whether through wayside exhibits, handheld digital devices, or any other method, can then be planned in detail.

The recommendations also address the need to develop interpretive infrastructure to support programming and services. A summary of evaluative methodologies completes the recommendations section.

NEXT STEPS FOR THE LONG-RANGE INTERPRETIVE PLAN

Within a year of the completion of this document, the NPS Ice Age NST staff will convene a meeting of a group of stakeholders who will work together to create interpretive messages centered on the topics. These messages will link the themes and subthemes to the information provided in the matrices. Stakeholders will be identified according to their particular area of expertise, and teams of subject matter experts will be formed to address the topics listed under each primary interpretive theme. In reviewing the primary theme statements, the subject matter experts may identify additional topics that they feel should be addressed as part of the overall primary theme.

All the teams will meet together for a briefing on the project and to receive their assigned topics. Each team will meet separately to develop subtheme statements for their topics and, using the matrices, to determine the best locations for their presentation. The end result will be a draft map of the trail segment that identifies the best place to interpret each of the subthemes. With assignments complete, the teams will again meet together to share ideas and review each others findings. After revision of the draft theme maps, the park will create an overview map that places each subtheme in context. The park will use this information in the future to develop, prioritize, and strategize regarding the LRIP's recommendations.

This approach provides a model for interpretation of other trail segments in the future, with localized themes and subthemes identified within each segment, but within the context of the larger primary interpretive themes.

THE AMERICA'S GREAT OUTDOORS (AGO) PROJECT

President Barack Obama began the America's Great Outdoors Initiative in April, 2010 by directing the Department of the Interior to launch a nationwide listening tour to learn from local communities about innovative and successful conservation initiatives taking place in every state of the union. The program is intended to foster a 21st-century, partner-driven approach to conservation of the natural environment. Goals for the project include engaging youth and urban audiences in outdoor recreation, increasing public awareness about conservation, identifying better management strategies for public lands (especially through creative partnering strategies), and conserving large rural landscapes. Two AGO projects were designated for each state: Wisconsin's designations include the Lake Michigan Water Trail, and a segment of the Ice Age National Scenic Trail. The latter was chosen in part because of its location within a two-hour drive of a population of over 11 million people, including two major cities, Milwaukee and Chicago. The following recommendations have been specifically developed to support and sustain the AGO programs goals.

       Outreach to new audiences. Interpretation of the AGO trail segment includes a strong focus on youth and urban audiences, both of which present marketing challenges. The country's youth are increasingly turning to electronic media for their primary experience of their world, and in addition, they often are involved in a wide array of school-related and extra curricular activities that take up much of what otherwise would be free time available to spend outdoors. In addition, many urban audiences are simply unfamiliar with natural and rural environments, tend to have fewer traditions that involve outdoor activities, and in some cases may even harbor fears about the dangers of the natural world. The following recommendations address potential strategies to strengthen outreach to these special audiences.

- **Research.** Ninety-nine other AGO units in the U.S. are facing the same challenges of recruiting new youth and urban audiences. An audit of the approach of others could yield worthwhile strategies, many of which are described in the Department of Interior's AGO Fifty-state Report (http://www.doi.gov/americasgreatoutdoors/documents/upload/AGO-50-State-Report.pdf). For example:
    - At Indiana Dunes National Lakeshore, special education and youth programs get underserved audiences out onto Lake Michigan in kayaks and canoes.
    - Public agencies in Hartford, Connecticut, have created a highly successful urban youth rowing program.
    - The City of Detroit has plans to engage youth, particularly in underserved minority communities, to help with waterfront and river restoration work.
    - The River Pathways Program in Phoenix, Arizona, will educate 25,000 inner city youth (94% minority) in basic environmental literacy by 2015. Youth will help build regional trails, monitor fragile riparian resources in the Agua Fria National Monument, and help restore avian and aquatic habitat. The project will also expand urban opportunities for fishing.

- The state of Alabama is exploring opportunities for expanding outdoor education as part of its public school curricula, including hunter and angler education.
- The state of Georgia created "Get Outdoors Georgia," a program focusing on both youth and adult populations in urban and rural areas with the goal of achieving a healthier population through outdoor activities.

- **Recommendations.** The following recommendations address urban and youthful audiences.
  - Provide specialized sensitivity training to staff to ensure these audiences receive a warm welcome; attempt to hire more minority park rangers.
  - Create a section of the website that provides advice for uninitiated families regarding clothing, food, water, trail safety, amenities, and where to find additional information.
  - Reach the family- and community-oriented African-American and Hmong audiences by working through community groups and churches, especially those with youth groups.
  - Partner with the Ho Chunk Nation to engage their youth.
  - Promote urban birding, an up-and-coming hobby for people of color.
  - Increase engagement of minority youth in trail building programs.
  - Partner with *Outdoor Afro: What's Good in My Hood* program.
  - Coordinate with U.S. Forest Service programs like Urban Trails, Urban Treehouse, Neighborhood House, etc.
  - Coordinate with Centro Hispano, a Hispanic youth group with local activities that encourage outdoor skills.
  - Conduct market research to target and involve urban- and rural-based organizations like Big Brothers/Sisters, Boys and Girls Clubs, Sunshine Coach, Boy and Girl Scouts, YMCA/YWCA, 4H, City of Madison Recreation Department summer programs, and Future Farmers.
  - Develop a marketing campaign aimed at urban communities.
  - Participate in "mom blogs" that promote family activities and outdoor activities for families.

Reaching non-English speakers. In the central Wisconsin area, the main segments in this audience category are Hispanic, Hmong, and Slavic/Russian people, but the trail does receive international visitation, as well.
  - Install multilingual signs at trailheads, especially for safety messages, which should be offered in each relevant language, along with graphics that will help reinforce the message more universally.
  - Translate audio, auto tours and smart phone applications into multiple languages.
  - Translate print and electronic materials, including AGO segment map, into Japanese, Chinese and French for international visitors. An opportunity will arise when the Ice Age NST brochure is reprinted.

PROGRAMS, SERVICES, AND MEDIA

These recommendations are divided into three categories. Level One recommendations are those that are achievable given current staffing levels (in FY13). Many of these initiatives are partner-driven. Level Two recommendations require at least one new interpretative specialist on staff in order to be implemented. Level Three recommendations include those that are long-range in nature, and that will be initiated as opportunities arise. That is, they would only take place when certain parameters are in place. The "triggers" that would launch each of these initiatives are identified. The recommendations are broken out by media-based services (including signs, printed matter, and digital content, etc.), and personal services (face-to-face interpretation, such as ranger talks, lectures, classes, etc.). The theme that each recommendation addresses is listed, along with the main audience segment it targets.

      Wayfinding issues. Because the trail segments are not contiguous, wayfinding can present a challenge. The Ice Age Trail Alliance's Atlas and Companion Guide provide a wealth of information for those who have access to them, but visitors who encounter segments of the trail on their own, or who have heard about the trail and wish to find segments of it, are often confused about the trail's official route, the connecting links, etc. There is a need for additional information at trailheads (kiosks) at carefully selected strategic locations, especially those on DNR property, that provide the casual hiker with the information he/she needs to access the trail. Trailhead signage with a QR code and a web link to a downloadable smart phone app should be installed. See below for more recommendations regarding QR codes and a smart phone application.

Level One Recommendations: achievable at current staffing levels

      Media-based interpretation. Given current staffing levels, media presentations will deliver the most effective interpretive services. The Ice Age NST staff currently includes a part-time media-savvy employee, making it possible at the time of this writing to implement some digital media-based interpretive services in addition to traditional forms of media. The Ice Age Alliance website is due for an upgrade, and many of the features planned for it dovetail with recommendations for the Ice Age NST. The website will be dynamically designed (automatically reformats for web, tablet or smart phone platforms), so visitors on the trail will be able to access the information, but *only where there is connectivity*. Many locations along the trail receive little or poor phone service. To provide full functionality and access to digital media, a "native app" (downloaded to the phone when connected, but does not require connection to function) will be necessary.

Level One Recommendations: media-based services	Theme addressed	Audiences targeted
Create a smart phone application that highlights geological and (especially) glacial features. Visitors can download the app from the internet, or access it via QR codes posted at strategic trailhead locations.	Landscape, People and the Land, Environmental	All; recreational, virtual

Management should experiment first with simple posts with QR code decals affixed to assess the level of vandalism to be expected before launching a full-scale QR code program. A number of free templates are available for developing smart phone apps, so it is no longer necessary to hire a developer – although creation of an app does require technical knowledge of the digital world. A wide range of features could be incorporated into the application, and additional features could be added each time the app is upgraded. Some potential features include: • Repurpose the seven animations created by Pigorsch Media Design for the DNR-produced film *Mammoths & Moraines: On the Trail of the Ice Age* that demonstrate the formation of glaciated features. Additional animations could be created as needed. This augmented reality approach provides animations of the formation of geological (bedrock and glacial) features as an overlay superimposed over an actual view of the existing landscape. An animation should be developed for each type of glacial feature, so it can be used for all features of that type along the trail, rather than being specific to a single, specific example. The animations can also be featured on the web site, along with contemporary photographs of glacial features along the trail. • General descriptive information about each segment (much like what is in the trail's printed Companion Guide). The information should include level of difficulty (perhaps including trail profiles), level of accessibility (surfaces, barriers, etc.), scenic values, restroom locations, etc. • Trail segment maps (GIS-enabled) that point out geological, biological, historical and cultural features. • Trip planning features including information on camping, parking, nearby B&Bs, Leave No Trace practices, etc. • The ability to customize one's hike by selecting trail segment; level of difficulty or accessibility; geological, biological, cultural and scenic features, etc.	Conditions, Stewardship, Ice Age National Scenic Trail	

- Feedback loop: a way for visitors to report on trail conditions, provide reviews, share their on-trail experiences, including bird and other wildlife sightings, and upload photographs. This element could be configured as a separate community blog. Geo-located photographs could be posted to a Google Earth map. - Share button for social media sites (Facebook, Twitter, etc.) - Link to opportunity to join as member or volunteer. - Nature guides that are specific to the trail, or even to trail segments. These could be habitat-based and include typical wildlife and plants from each habitat. - The possibility of linking to apps created by others that serve as nature guides, citizen science platforms, and data collectors. There is no need to recreate these types of programs, which include Project Noah and many others. - A scavenger hunt-type activity, where users search for geological features, wildlife, trees, flowers, leaves, etc. – and even invasive/exotic plant species. The Alliance's Coldcache activity, based on geocaching, would be a good model for this. Coldcaching is like earthcaching in that it does not involve the exchange of cached items. The cache is recorded via GIS-located photographs. - A geological timeline/continuum that provides a concrete metaphor for the large expanse of time revealed along the trail (like the walking stick analogy in *Mammoths & Moraines*). - Ranger/naturalist video talks and demonstrations can be included where they would be more effective than an animation. The "formation of a kettle" demonstration from *Mammoths & Moraines* is a good example. - A link to a series of suggested demonstrations, experiments, or follow-up activities that teachers and parents could use to continue to engage their students/children (informal educational opportunities). - Augmented reality features using historical photographs that allow viewers to toggle back and forth between the historical view and the		

scene today.		
Develop the area around both Merrimac Ferry landings as an Ice Age Trail gateway. The ferry is part of the trail, and its location is ideal for attracting the attention of the thousands of tourists that cross on the ferry every year. An Ice Age Trail kiosk already exists on the Lodi (Columbia County) side, and there are plans to install wayside exhibits as well. The existing kiosk could be better utilized, and a more prominent presence for the Ice Age NST could be installed on both sides of Lake Wisconsin. Specific recommendations for interpretation at the Merrimac Ferry landings include: • Install a segment map on the existing Ice Age Trail kiosk at Merrimac Ferry. • Include on the Merrimac Ferry kiosk information about nearby Ice Age Trail features, such as Devil's Lake SP. Note that the full-color map can be obtained there • Include on the kiosk graphic panels interpreting nearby glacial geology features and promoting the National Natural Landmark (Baraboo Hills), Gibraltar Rock, the City of Lodi and others. Consider partnering with the cities of Lodi and West Point, as well as Columbia County. • Work with cities of Lodi and West Point and Columbia County to provide more visitor amenities at the south ferry landing, such as restrooms, nicely landscaped picnic areas, and an ice cream vendor. • Install a QR code at the ice cream shop on the north side of the lake (Sauk Co. side) and post a color AGO segment map there. Consider making black and white copies of the map available at the ice cream shop if the local chapter will volunteer to keep them supplied. Include a sign stating that the color version of the map is available at Devils Lake SP. • Install an Ice Age Trail interpretive kiosk on the Sauk Co. side of the lake (perhaps on DOT property?), perhaps in partnership with other organizations like the Fox-Wisconsin Heritage Parkway, or with Sauk County. • Investigate the possibility of placing	Landscape, People and the land, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	All

interpretive materials in the public bathrooms on the Sauk County side of the lake. • Install a QR code on the Merrimac Ferry itself (along with the Ice Age Trail logo). • Create a short, accessible loop trail (no more than 1 mile) in Roznos Meadow, for travelers who want to experience hiking the trail, but are unlikely to want a more extensive hike.		
Partner with DNR to create a **wayside exhibit at Devils Lake SP that uses pollen records to show changes to the plant community** over time. Incorporate the same interpretation on the Alliance website and the Trail's smart phone application. See David M. Mickelson, Louis J. Maher, Jr., and Susan L. Simpson, *Geology of the Ice Age National Scenic Trail,* University of Wisconsin Press, 2011, pg. 47.	Environmental Conditions	All
Add tips for parents to the website on hiking with children: clothing, food, water, best places to go (running water, rocks to climb, dinosaurs, mammoths and other special kid-oriented interests), best places for family photographs, etc.	Ice Age National Scenic Trail	Families
In conjunction with enhancing trailhead signs, add short "interpretive tidbits" for hikers	Landscape, People and the Land, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	All, Recreational
Connect with the cell phone tour being developed at Devil's Lake State Park (mainly for hikers) by providing information in Ice Age Trail materials regarding the numbers and prompts to call.	Landscape	All; recreational

     Personal services. At current staffing levels, many Ice Age Trail themes are best interpreted through media as described above, rather than through personal services. However, some focused personal services are possible and desirable. Many of the services can be provided via partnership arrangements.

Level One Recommendations: personal services	Theme addressed	Audiences targeted
Partner to provide living history programs at historical venues near the AGO segment.	People and the Land	All, but especially local
Tell these stories through partnered programs, exhibits and lectures: Circus World, Wisconsin State Historical Society, Devil's Lake SP, the Aldo Leopold Center, local historical societies, etc.	People and the Land	All, but especially local
Offer programs, clinics and workshops on prairie restoration that will contribute to the public's education about and understanding of prairie conditions and management strategies. • **Invite the public to watch** the controlled burns of the prairies.	Environmental Conditions, Stewardship	All; local
Offer a series of special events in different locations annually to address the environmental conditions, influence of the Ice Age on the contemporary landscape, wildlife watching, etc.	Environmental Conditions	All; local, recreational
Work to get Alliance members involved with Leopold Center's Land Ethic Leaders program.	Environmental Conditions, Stewardship	All; local
Partner with the Alliance to offer **scheduled guided hikes** that address what conditions were like during the glacial period and how they have changed since then: exotic species, land management practices, roads, etc.	Landscape, Environmental Conditions, Stewardship	All; recreational
Sponsor a quarterly lecture series to address important stewardship questions: What is your imprint? How do we know what is best? The emphasis would be on "intent." Why these practices? Why is sustainability important? Why is stewardship important? What has the land meant to people throughout history? What are their values regarding the land? Who looks at land differently, and why/how? Ask people to envision the future in the glacial scale of 12,000 years. • Consider a lecture series specifically directed at urban populations and youth.	Stewardship	All; local
Partner with the Alliance to create trail work days that provide context, through hikes or other programs that help participants understand why stewardship is	Stewardship	All; local, youth, urban

important.		
Partner with the Alliance to create volunteer opportunities other than trail crew work, such as presenting educational talks to community groups, so that people who prefer it can address stewardship in ways other than trail building.	Stewardship	All; local
Work with the Alliance to form a committee to focus on stewardship issues.	Stewardship	All; local
Encourage Alliance members to speak to local community clubs and organizations	Ice Age National Scenic Trail	Local
Partner with Audubon Society and/or Devils Lake SP to offer Saturday mornings walks with professional naturalists, for example a bird walk followed by breakfast and a slide show.	Landscape, Environmental Conditions, Stewardship	All; local
Partner with Wisconsin's Master Naturalist program volunteers to promote awareness, understanding, and stewardship of the state's natural resources. Coordinate the program with the trail chapters.	Stewardship	All; local
Emphasize the volunteer-driven nature of the Alliance by interpreting the volunteer program.	Ice Age National Scenic Trail	All, but especially local, youth and urban
Offer Night Sky programming and nighttime walks/hikes	Landscape	All; local, recreational
Continue to develop overnight public, private or dispersed campsites every 8-10 miles along the trail	Ice Age National Scenic Trail	Recreational
Partner with Alliance to offer **workshop on logistics and preparations for the through-hike**	Landscape, Ice Age National Scenic Trail	Recreational

Level Two Recommendations: achievable with addition of interpretive specialist

With an interpretive specialist added to the staff, the possibilities for outreach and expanded programming increase.

Level Two Recommendations: media-based services	Theme addressed	Audiences targeted
Building on the matrices developed as part of this plan (see Appendix B1-3), **create an auto tour** that provides the "big picture" view of the AGO segment's geological, biological and cultural features: the Baraboo Range, Leopold Shack, Circus Museum, etc. The format: a paper map and brochure distributed at shops, visitor centers, chambers of commerce, etc., that can also be printed from the internet or downloaded to smart phones and tablet computers. It can include QR codes that link to additional web-based information and can be tied to the trail's app for smart phones. • With the addition of small prompts at key locations, the downloadable version of the auto tour map could include MP3 audio podcasts – short descriptions of observable features that go beyond what can be listed in the map/brochure. These may already have been developed as part of the smart phone application.	Landscape	All; physically challenged visitors
Call out cultural features on the AGO segment map, such as agriculture (ex: hops growing), historic towns, Native American settlements (like big Ho Chunk towns at Black Earth Creek, Indian Lake and the Merrimac Ferry area), and effigy mounds. Emphasize family stories, contemporary culture, businesses, the Freethinker movement, land use/management over time (including native leaders, John Muir, Aldo Leopold), paleo Indians of the glacial period, their connection to the Ho Chunk, etc. These should include links to additional web-based information.	People and the Land	All
Install QR codes in specific locations that provide web links to information about trail features: for example, a direct link to a webpage explaining drumlins. This implies considerable added content to the website.	Landscape	All; virtual
Provide visitor services info via the website, to include where to eat, stay overnight, find groceries and resupply outlets, laundries, post offices, etc., targeting both through and day/segment hikers. Provide links to	Ice Age National Scenic Trail	Recreational

chambers of commerce. Some of this content will have been developed as part of the smart phone application.		
Create a series of downloadable online AGO brochures, one for each of the 6 primary interpretive themes, that develops thematic content more fully.	Landscape, People and the Land, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	All; virtual
Develop an enhanced, online version of the NPS brochure	Landscape, People and the Land, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	All; virtual
Create an illustrated interactive time line via smart phone that interprets environmental conditions over time.	Environmental Conditions	All; virtual
Create an interactive, web-based map that uses the historic record and phenology data to show how nature's timing has changed	Environmental Conditions	All; virtual
Create a short PSA for TV showing the value of the trail to citizens.	Ice Age National Scenic Trail	All
Post You Tube videos by trail ambassadors who have benefitted from use of the trail, including doctors touting the health benefits.	Ice Age National Scenic Trail	All
Offer an annual art/photography show in the barn at the Cross Plains Complex	Landscape, Stewardship	Local
Add more contemporary photographs to the website, including images of volunteers having fun at work on the trails.	Landscape, Ice Age National Scenic Trail	Virtual
Add more historical information to the website, including photographs; include images of the same or similar scenes from today.	People and the Land	Virtual

Create low-tech downloadable treasure hunts (easy and hard); participants photograph their findings; photographs can be published on website.	Landscape, Stewardship, Ice Age National Scenic Trail	Families, recreational
List best wildlife watching opportunities, times and seasons on the website.	Landscape	All; recreational, families
Create activity backpacks for families to borrow while on the trail.	Landscape, People and the Land, Environmental Conditions, Stewardship	Families

The following Level 2 recommendations call for personal services that would only be possible when an interpretive specialist is added to the staff.

Level Two Recommendations: personal services	Theme addressed	Audiences targeted
Partner with the Alliance to develop **citizen science programs** that include data collection, especially phenology, reported sightings, invasive species, etc.	Environmental Conditions	All, but especially local
Expand wellness/fitness incentive programs with hospitals, doctors and health insurance companies; the Trail becomes part of the "nature prescription" program. Engage doctors who are Alliance members to serve as ambassadors to promote the health benefits of walking meditation and hiking the trail. Examples of related programs include regular walking groups, incentives/prizes for hiking a certain number of miles or completing a number of segments, pedometers on loan or distributed for free, downloadable hiking logs, etc.	Ice Age National Scenic Trail	All, but especially local and recreational
Engage with the VA hospital to encourage use of the trail in rehabilitation as part of the Wounded Warriors program.	Ice Age National Scenic Trail	All, but especially local
Partner with others to present outdoor programming, including camping, fishing, hunting, archery, orienteering, fire-building, paddling, wilderness survival, etc. Examples include DNR's GO (Get Outdoors) program, which could involve using Indian Lake County Park or the Ice Age Trail Complex at Cross Plains as a venue for land-based activities,	Ice Age National Scenic Trail	All, but especially local, families, youth, and urban.

including winter sports. Other suggestions include borrowing snowshoes from Havenwoods State Forest for loan to visitors, and connecting with the Hoofers group at UW-Madison, a club for people learning outdoor skills, via special field trips, booked in advance, that include bus transportation.		
Offer snowshoe clinics marketed to summer hikers (corporate sponsorship).	Landscape, Ice Age National Scenic Trail	Recreational
Partner with the Alliance to **offer scheduled hikes,** perhaps focused on changing topics or as part of a series of quarterly season-based hikes.	Ice Age National Scenic Trail	All, but especially local
Seek commercial sponsorship to make recreational equipment like snowshoes available to borrow for free.	Ice Age National Scenic Trail	All, but especially local, including youth and urban
Develop informal workshops and other programs centered on the arts: writing, songwriting, poetry, art, photography, etc.	Landscape, Stewardship	Local
Offer contests for writing, songwriting, poetry, art, photography, etc., that is centered on the Ice Age NST	Landscape, Stewardship	Local
Offer photography workshops	Landscape	All; local, recreational
Offer workshops on creating art from recycled materials	Stewardship	Local
Develop a special event/fair centered on sustainability and/or alternative energy	Stewardship	All, local
Partner with the Alliance to create work details for schools groups that focus on education about invasive species, etc. Offer high school service hours.	Stewardship	Local
Partner with Aldo Leopold Center's Nature Net program, which offers grant funding for buses; become a partner in the Nature Net/Nature Passport program.	Stewardship	Curriculum-based, local
Create regular family-oriented special events.	Landscape, People and the Land, Changing	Families, urban, youth

	Environment, Stewardship, Ice Age National Scenic Trail	
Offer special family-oriented volunteer opportunities that include a stewardship message, programming, and fun.	Stewardship	Families
Create print versions of all audio programming	Landscape, People and the Land, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	Hearing-impaired visitors

Level Three Recommendations: will occur if and when conditions are met

Level Three recommendations are opportunistic: when certain parameters fall into place, it will be possible to implement them.

Level Three Recommendations: media-based services	**Theme addressed**	**Audiences targeted**
Working with partners such as DNR and the Fox-Wisconsin Heritage Parkway, **create a narrated virtual tour** of the Ice Age Trail, including a segment-by-segment flyover, possibly to be viewed side-by-side with an elevation profile of the trail. *Triggers for this recommendation include partnership opportunities, the availability of aircraft and video cameras at reasonable cost, and perhaps discovery of existing footage for some segments.*	Landscape	All, virtual, physically challenged visitors
Create a dog cam: a dog's eye view of hiking the trail. The program includes easily digested tips for people who wish to hike the trail with dogs, and would connect well with children. *Trigger: availability of suitable technology and a willing canine.*	Ice Age National Scenic Trail	Virtual, local
Install web cams showing the best views of and from the trail. *Trigger: availability of technology and technological knowhow on the part of the staff.*	Landscape	Virtual

Install a tactile topographical map of the AGO segment. *Trigger: availability of a space to display the unit.*	Landscape	All; visually impaired and cognitively challenged visitors

Level Three Recommendations: personal services	**Theme addressed**	**Audiences targeted**
Partner with others to present outdoor programming. Connect with the BOW (Becoming Outdoors Women) program, a nationwide program for women learning outdoor skills that began at UW-Stevens Point and offers dozens of activities in all seasons, including hiking, camping, hunting, fishing, and winter sports, but requires a place for an overnight stay. *Trigger: availability of overnight lodging, perhaps at Devils Lake State Park.*	Ice Age National Scenic Trail	Women, urban, recreational
Promote after school programs to schools that have buses available, tied to fitness/wellness programs**.** *Trigger: classroom and other teaching spaces become available at the Cross Plains Complex*	Landscape, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	Curriculum-based, local
Provide transportation for school classes. *Trigger: successful application for transportation grants/scholarships; classroom and other teaching spaces become available at the Cross Plains Complex*	Landscape, Environmental Conditions, Stewardship, Ice Age National Scenic Trail	Curriculum-based, local
Partner with Alliance's Coldcache program by making GPS units available to teachers, homeschoolers, scouts, and after school and summer programs through libraries or Cooperative Educational Services Agency (CESA). *Trigger: classroom and other teaching spaces become available at the Cross Plains Complex*	Landscape, Stewardship, Ice Age National Scenic Trail	Curriculum-based, local

INTERPRETIVE INFRASTRUCTURE

In order to present effective interpretive programs, a certain level of infrastructure must be in place to support planning and presentation. The categories of infrastructure include training and professional development, resource-based research, visitor-based research, access to images and audio files, access to collections and archives, and availability of interpretive materials like models, props, and replicas. Note: the Ice Age NST staff does not include professional interpreters at this time; interpretation is provided by partners. The plan covers a ten-year time period going forward, so the following recommendations are focused on preparations for the addition of interpretive specialists to the staff.

Training and professional development. Based on DNR's leadership, the following options are available:

- DNR's annual interpretive workshop ($100 for three days) is available to Ice Age Trail personnel.
- National Association for Interpretation options *(*www.interpnet.com*),* including
  - o Professional certification
  - o NAI webinars
  - o NAI Regional and National Workshop (annual event)
- Attend Chicago Wilderness conferences and programs
- Connect with The Partnership for the National Trails programs and events

Resource-based research. This refers to the ability of interpreters to access detailed information about the trail, including background on all geological, biological, and cultural stories. A small library of resource materials currently exists, but as interpreters join the staff, there will be a need for a centralized, easily accessed location for resources. Other sources of information include:
- The State Geological and Natural History Survey: its staff, website, and publications
- DNR's resource management staff and excellent website
- Dane, Columbia, and Sauk County Park systems
- State Historical Society's excellent website
- Other state agencies

Visitor-based research. This kind of research is important for understanding the audience and targeting programs to them. A recent (December 2012) Joint Effort Marketing (JEM) study conducted by Economic Development Partners (EDP) in association with the Fiscal and Economic Research Center (FERC) at UW-Whitewater offers some insights. (See above for a summary of the findings). Additional steps can be put in place to enhance interpreters' knowledge about visitors. They include:
- Demographics survey attached to smart phone application (OMB approval required)
- Trail chapters can conduct periodic parking lot surveys of license plates.
- Trail chapters can conduct "clipboard" surveys at trailheads, indicating zip code of visitors and number in party.

- Make use of surveys by others, including:
  - SCORP (Wisconsin Comprehensive Outdoor Recreation Plan at dnr.wi.gov/topic/parks/planning/scorp/)
  - The National Survey of Fishing, Hunting, & Wildlife (FHWAR), conducted every five years for the U.S. Fish and Wildlife Service (http://www.doi.gov/news/pressreleases/upload/FWS-National-Preliminary-Report-2011.pdf)
  - *Trails and Their Gateway Communities: A Case Study of Recreational Use Compatibility and Economic Impacts* by University of Wisconsin Extension (http://learningstore.uwex.edu/Trails-and-Their-Gateway-Communities-A-Case-Study-of-Recreational-Use-Compatibility-and-Economic-Impacts-P1199.aspx)

Access to imagery. Interpreters need these resources when preparing programs, whether media-based or personal services. Eric Sherman, Information Systems Coordinator for the IATA, is a good source of contemporary images of the trail at this time. Historic photographs are available from local historical societies, the State Historical Society, and Devil's Lake SP. DNR has a public Flickr site with images available for use by all.

Access to collections/archives. Collection access is less of an issue for the Ice Age Trail, but material on the history of the trail and its partners is available from local historical societies and from Devil's Lake State Park's archives.

Access to interpretive materials. These include items like props, equipment, replicas, and costumes. When Ice Age Trail interpreters join the staff, a budget for these types of educational items will be needed.

EVALUATION

As for training and professional development, the Ice Age NST can follow DNR's custom and practices for some evaluative strategies. The traditional framework for evaluation includes:

- **Front end evaluation.** Front end evaluation takes place before a project begins. It is intended to find out what visitors know and do not know about a topic, and what they would like to know.
- **Formative evaluation.** Formative evaluation takes place as the project develops. DNR conducts this mode of evaluation informally, by running copy, images, and layout, etc., by numerous people.
- **Summative evaluation.** Summative evaluation takes place once a project is completed. Sometimes it involves visitor feedback as to the effectiveness of the product. Ideally, money has been set aside in the budget to remediate any deficiencies that the summative evaluation identifies. But even if that is not the case, the information gained from summative evaluation can help to inform the next similar project.

Evaluating personal services. Personal services among DNR interpreters are evaluated through forms, self-evaluation, and by supervisors.

Digital feedback. The production of a smart phone application offers another opportunity for evaluation, especially with regard to visitor demographics and origin. In addition, with approval from the Office of Management and Budget (OMB), the smart phone application could include survey questions that could begin to assess the effectiveness of various interpretive strategies. Before including such a survey, it would be important to learn from other places with such surveys (like the Edsel Ford House Museum in Michigan and the Underground Railroad Museum in Cincinnati) whether or not they are gaining useful feedback via their surveys.

THE MATRICES

The material that follows summarizes the information that can be found in more detail in the matrices (Appendix A1-3) developed as a part of this plan. Separate matrices were created for geological, biological, and cultural features observable along the AGO trail segment. They inventory features found on identified trail segments and can be used as the basis for interpretive programs and services. Also included are maps that identify specific features and locations where the six interpretive themes may be presented. The matrices and maps will form the basis of theme maps to be developed, which will identify precise locations for the placement of interpretive media and programs.

THIS REST OF THIS PAGE IS A PLACE HOLDER FOR SUMMARY OF BEST LOCATIONS FOR INTERPRETATION OF GEOLOGICAL FEATURES (by Park). Photographs will be included.

THIS PAGE IS A PLACE HOLDER FOR SUMMARY OF BEST LOCATIONS FOR INTERPRETATION OF BIOLOGICAL FEATURES (by Park). Photographs will be included.

The summary will also include the need for sensitivity with regard to identifying locations of threatened and endangered species. Locations will be indicated in general terms to protect these species from unwanted attention.

THIS PAGE IS A PLACE HOLDER FOR SUMMARY OF BEST LOCATIONS FOR INTERPRETATION OF CULTURAL FEATURES by Park. Photographs will be included.

Appendix A: Dr. Stanley Temple re: Ice Age NST as migration corridor

The "conservation corridor" label for trails, roadsides, utility corridors and other long, narrow, linear ribbons of habitat has been used--and abused--as one of the justifications for their creation. Such corridors could potentially help a very limited range of species, but they are not generally a winning strategy for most species of conservation concern and most ecological situations.

When conservation biologist talk about effective conservation corridors they are usually envisioning wider swaths of fairly uniform, good quality habitat that either (1) connect isolated patches of similar habitat or (2) provide migration and dispersal pathways. Conservation corridors that connect isolated patches of habitat facilitate exchanges of individuals that can enhance the overall viability of a metapopulation (a regional population composed of discrete isolated subpopulations that otherwise have obstacles to the interchange of individuals). Conservation corridors designed to facilitate migration and dispersal movements must not only be suitable habitat but also be aligned with the directions targeted species need to move. In both situations, conservation corridors should be designed specifically and deliberately to accommodate particular species of conservation concern. The ecological characteristics of the corridor must be known to be useful for these targeted species. Just hoping that "If we build it, they will come" does not usually insure success without careful, science-based planning.

From what I know, the design and layout of the ice age trail segment do not obviously meet the requirements for an effective conservation corridor:
(1) No targeted species of conservation concern that might use the trail corridor have been identified.
(2) The trail corridor is typically too narrow to accommodate the needs of any but species with very small space requirements and tolerance of ecological edges (remember, the species actually has to be able to live and survive in the corridor).
(3) The habitat within the trail corridor is not uniform enough to be an attractive pathway for habitat specialists (the typical conservation targets) that can be blocked by gaps in the continuity of their preferred habitat.
(4) The trail corridor does not obviously connect isolated patches of habitat occupied by targeted species that cannot otherwise move freely between the patches.
(5) The trail corridor is not obviously aligned in such a way to accommodate either seasonal migration movements or long-term dispersal movements needed to adapt to climate change.
(6) There is already a potentially more attractive corridor in the general region (along the Wisconsin River).
(7) Finally, the proposed trail route crosses the Wisconsin River, which, barring a modern-day Noah, presents a barrier to movements of most species along the corridor!

So, my recommendation would be to emphasize the many easily justified benefits of the trail and reserve the conservation corridor argument for more easily defended situations. Let me know if the group would like to hear more from me on the subject.

Stanley A. Temple
Beers-Bascom Professor Emeritus in Conservation, University of Wisconsin
and Senior Fellow, Aldo Leopold Foundation

APPENDIX B-1, MATRIX AND MAP IDENTIFYING BEST LOCATIONS FOR INTERPRETATION OF GEOLOGICAL FEATURES (BY PARK): TO COME

APPENDIX B-2, MATRIX AND MAP IDENTIFYING BEST LOCATIONS FOR INTERPRERATION OF BIOLOGICAL FEATURES (BY PARK): TO COME

APPENDIX B-3, MATRIX AND MAP IDENTIFYING BEST LOCATIONS FOR INTERPRERATION OF CULTURAL FEATURES (BY PARK): TO COME

[APPENDIX C: GLOSSARY OF GEOLOGICAL TERMS, BY THE PARK (TO COME)]