MANAGEMENT PLAN FOR HORSESHOE BAY CAVE
(& WNS Prevention Plan)

APPROVED BY DOOR COUNTY BOARD – 6/24/14

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Acknowledgments

We extend our appreciation to individuals on both cave science and stakeholder advisory groups who reviewed this document and provided valuable input.

Funding

Provided by the Wisconsin Coastal Management Program and Wisconsin Bureau of Natural Heritage Conservation.

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Cover photo by J. Redell of HSB Cave Big Room

EXECUTIVE SUMMARY

The *Management Plan for Horseshoe Bay Cave* (Plan) has been developed by the Wisconsin Department of Natural Resources (WDNR) Bureau of Natural Heritage Conservation (NHC), Door County Soil & Water Conservation Department (SWCD), and Door County Parks Department (Parks Dept.) as a uniform guide for the management and protection for this unique resource. The management policies and guidance delineated in this document are designed to preserve and protect all of the diverse and significant features of HSB Cave while allowing for the public to access the cave.

Located in Door County, Horseshoe Bay (HSB) Cave is one of the longest known caves in Wisconsin and has been identified as a significant bat hibernaculum within the Wisconsin Department of Natural Resources (WDNR) Natural Heritage Inventory (NHI). Caves and other karst features are fragile, non-renewable natural resources that have unique scientific and cultural value, serve as conduits for rapid groundwater movement, and provide key habitats for rare, threatened, and endangered species. Conservation of these resources needs to be a concern for all who use or impact the cave environment as well as those communities in karst areas which are dependent on ground water.

HSB Cave provides critical habitat for all four state threatened bat species. The cave's bat population falls under the authority of the State Threatened & Endangered Species Law under management direction from the WDNR Bureau of Natural Heritage Conservation (NHC). White-nose syndrome (WNS), a disease caused by the fungal pathogen *Pseudogymnoascus destructans* poses a significant threat to cave hibernating bats throughout North America and in the Northeast its effects are already devastating: models give a 99% chance of regional extinction of the little brown myotis (*Myotis lucifugus*) within the next 16 years (Frick et al. 2010). All Wisconsin cave bat species, including one federally endangered species and another candidate for federal listing (Northern long-eared bat), are among the six species mortally affected by the disease. Because HSB cave has been identified as an environment suitable for harboring the white-nose syndrome (WNS) fungus it is also subject to administrative rules related to the State Prohibited Invasive Species Law, including the need for Door County to have a WDNR approved WNS prevention plan.

Development of the plan was part of a larger project funded by a grant from the Wisconsin Coastal Management Program. From 2012-2014 the Wisconsin Department of Natural Resources (WDNR) and project partners:

a. Installed a directional infrared beam-break bat counting system at the HSB Cave entrance to monitor seasonal bat movement, census the hibernating population, and provide information related to the anticipated arrival of WNS to the cave.
b. Installed a Passive Integrated Transponder (PIT) tag antenna to track individually marked bats' use of HSB cave and individually marked approximately 10% of the HSB cave bat population with either PIT tags or wing bands
c. Conducted a baseline inventory of the cave that documents the unique geologic, biologic, and cultural resources present within the cave system.
d. Utilized these baseline data, historical reports, public input, and the best available science in the development of a *Rapid Resource Inventory & Assessment of Horseshoe Bay Cave* document which consolidates known basic information about the physical attributes of HSB cave and highlights a number of management issues including the need for bat and WNS management

The Plan outlines:

a. Objectives for long-term management of the cave
b. Opportunities and actions to protect and learn about cave resources
c. Procedures for safe visitor education and quality visitor experiences in HSB cave
d. Policies and procedures for public access to the cave
e. Policies and procedures for proposed special activities
f. Procedures to protect fragile cave resources (speleothems, or cave formations, sediment and artifacts, and aesthetics)
g. Procedures to protect biological resources (rare and threatened vertebrate and invertebrate species)
h. Recommendations for future inventory, monitoring, and preservation efforts
i. A state required white-nose Syndrome (WNS) site-specific prevention plan setting out practices for the prevention of the introduction and transmission of *P. destructans*

This is a process document intended for an internal audience comprised of property and resource managers. It is intended as a solid foundation, and embodies certain fundamental principles. While the foundation and principles will remain constant, this Plan must be viewed as a living, breathing document that will evolve and change over time.

CHAPTER 1: PLAN OVERVIEW & ADMINISTRATIVE SECTIONS

A. Statement of Need

Over the past decades, and presently, pressure has been placed on cave owners to allow recreational caving in HSB Cave. Increased usage places pressure on karst resources and results in potential threats to public safety. Fragile and unique geological formations in HSB Cave have been damaged or illegally removed and habitats for bats and other species have been impacted by unmanaged visitor uses. The cave has been degraded by graffiti and spray paint along the cave passages. Visitor safety is a serious concern as many visitors to HSB Cave have explored its passages without adequate safety equipment and with little understanding of the hazards associated with caving. Serious injuries from falls could require emergency rescues. Death resulting from such a fall or aftermath of fall (hypothermia) is a real possibility due to the nature of this cave (vertical crevices, ledges, and standing water in passages).

Approximately 1200 bats utilize HSB Cave for hibernation each year (Figure 1). Bat conservation efforts and the need to gather baseline data on cave bat populations have become increasingly important as a result of the fungal disease white-nose Syndrome (WNS). Due to the spread of WNS, which affects bats during hibernation in caves and mines, significant cave bat population declines have been documented in North America since 2007. The US Fish and Wildlife Service (USFWS) has issued a cave advisory due to vulnerability of bats to this disease and due to the potential for human visitors to transmit the disease from cave to cave.

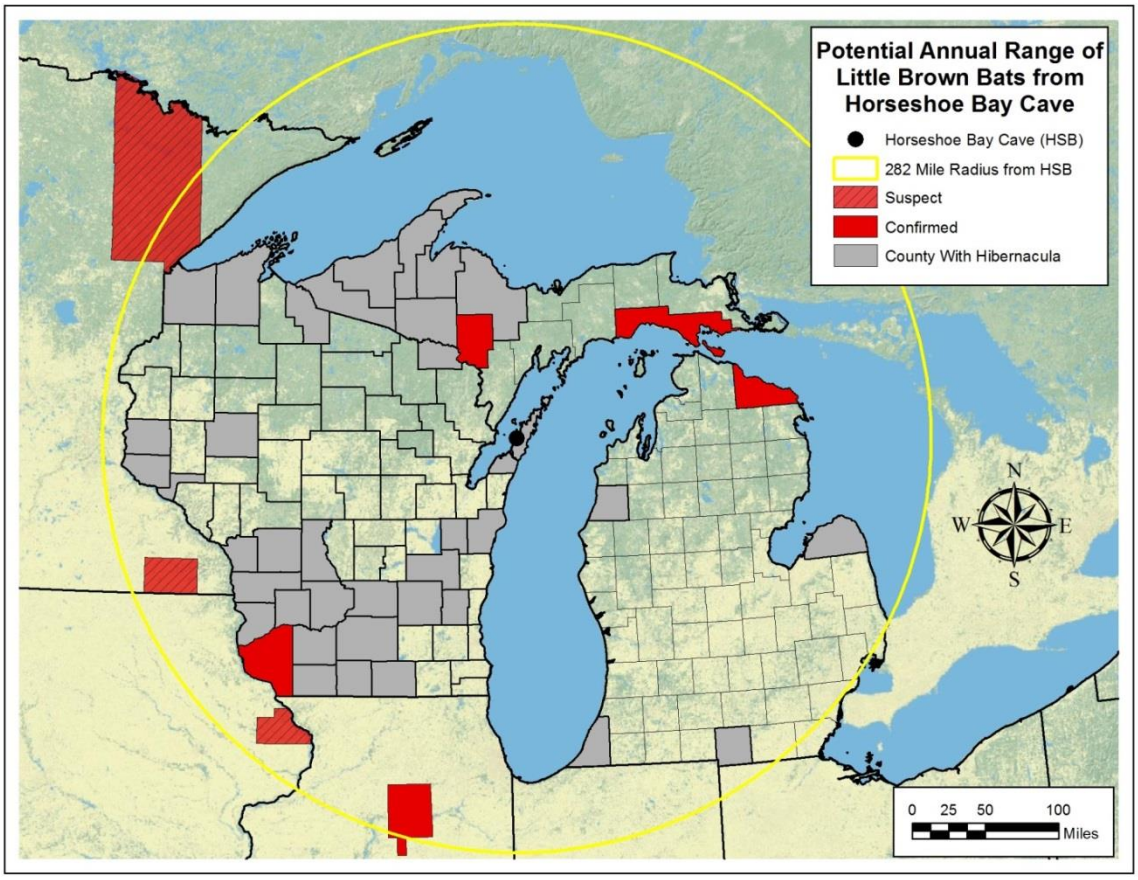


Figure 1: HSB Cave provides critical fall mating and winter hibernation habitat for bats that emerge in spring to disperse over thousands of square miles during summer months. WNS presence as of 4/15/14.

WNS was first detected in SW Wisconsin in 2014. WNS has reduced some cave bat populations to the extent that they may be increasingly vulnerable to other stressors that they may have previously had the ability to withstand (such as disturbance during the hibernation period). These impacts could potentially be seen on two levels. First, individual cave bats sickened or struggling with infection by WNS may be less able to survive other stressors. Second, cave bat populations impacted by WNS, with smaller numbers and reduced fitness among individuals, may be less able to recover making them more prone to extirpation. The status and potential for these impacts will vary across the range of the species but may lead to changes in cave management recommendations and requirements in the future.

It was the intention of Door County, in purchasing HSB, to allow some form of reasonable public access, however, every entry into a cave, by any person, creates disturbance to the cave system. The cumulative impact of even slight changes and disturbances, whether deliberate or otherwise, can lead to dramatic alterations of the HSB Cave, or to people's enjoyment of the Cave. Additionally, all undeveloped caves, by their very nature, contain some risks. It is necessary to mitigate safety/rescue issues. This plan contains an access management section to minimize the impact of access on HSB Cave and its resources and to maintain a safe and quality experience for all people / groups.

This plan is one of the first, if not the first, of its kind developed in the era of WNS, which factors in not only human use of a known bat hibernaculum, but also unique laws specific to Wisconsin that regulate caving activities as they relate to WNS. Additionally, on October 2, 2013, the U.S. Fish and Wildlife Service (FWS) proposed the northern long-eared bat (*Myotis septentrionalis*; MYSE) for listing as endangered under the Endangered Species Act (ESA). For species that have been proposed for listing, the FWS has determined that there is enough information to warrant listing them as either threatened or endangered. It is anticipated that this species will become federally listed by Oct., 2014. The information and guidance in this document should not be considered final because the FWS is still making a listing decision for MYSE. This document provides the FWS' current suggestions and recommendations for MYSE-consideration in project planning. It is important to note that, due to the preliminary nature of the state of knowledge of the MYSE, the approaches and information contained within preliminary guidance may change as we gain additional information on the MYSE and its habitat.

Management goals include:

a. Protect and preserve Cave resources
b. Enhance the scientific and educational potential of this Cave for the public
c. Offer opportunities for reasonable public access, and improving the quality and safety of visitors' experiences
d. Acknowledge and address concerns of, and limit liability risks to, the Cave owners.

B. Purpose of Management Planning

This management plan:

a. Sets out the goals and objectives for the management of HSB Cave
b. Provides information for those seeking access to HSB Cave (e.g., How will access be controlled? Who can visit the Cave and how do they obtain access? What can they do or not do in or around the Cave?).
c. Serves as a guide for future caretakers of the Cave resource

d. Contains a site-specific White-nose Syndrome Plan ("WNS Plan"), consistent with Sections NR 40.04 *and* 40.07, Wisconsin Administrative Code, or as otherwise required. This WNS Plan among other things, is intended to: prevent the introduction and transmission of white-nose syndrome fungal pathogen; *and* to minimize and mitigate the impact the endangered or threatened or uncommon species (e.g., bats) or habitat may suffer from human activity.

C. Purpose of the Property and Management Authority

The Mission Statement for all of the Door County Parks is as follows: Provide a coordinated park and outdoor recreation program including the development of park and recreation facilities to meet the needs and demands of Door County residents and visitors.

With this mission as guide, Door County's acquisition of the Cave's entrance and surface land beneath which part of the Cave passes ensures that it will (for the foreseeable future) remain in public ownership, be protected, and be available for appropriate public use(s).

Door County's mission statement and strategic priorities include the priority of the "Protect Door County's Natural Resources, especially the water quality," and "plan and manage land use in Door County to promote responsible development and to preserve our natural and aesthetic strengths." Accordingly, the HSB Management Plan strives to include the protection of the County's natural resources, specifically the Cave's resources.

Door County's parks are more than a place for people to engage in active recreation; the parks are also a part of the County's open land composition. Open land is generally defined as those areas which are characterized by the limited presence or absence of man-made structures and limited presence of man's activities. Park land and open space provides many benefits which include physical and psychological needs of humans; protecting natural resources; and providing economic benefits. Because of these benefits, it is recognized that to provide for open space is a meaningful function of government.

Door County is authorized to establish and operate public parks for public purposes (including conservation, education, and recreation) consistent with Sections 27.02 – 27.065, 59.02, 59.04, 59.51, 59.52, and 59.56 Wisconsin Statutes, and Chapter 12, Door County Code.

Door County may also cooperate with the state or any department or agency thereof, under Section 66.0301, Wisconsin Statutes, in the joint exercise of any power or duty required or authorized by law. This includes the establishment and operation of public parks.

1. Wisconsin Department of Natural Resources (WDNR)

The WDNR holds the public trust responsibility for managing wildlife (See: Section 29.011, Wisconsin Statutes). This concept is embodied in Section 29.011(1) Wisconsin Statutes, which reads as follows:

> "*The legal title to, and the custody and protection of, all wild animals within this state is vested in the state for the purposes of regulating the enjoyment, use, disposition and conservation of these wild animals.*"

Section 23.09(1), Wisconsin Statutes and Chapter NR 1.015, Wisconsin Administrative Code, speaks to WDNR's authority and responsibility for wildlife management, protection, and use. Section NR 1.015(2), Wisconsin Administrative Code provides, in relevant part, as follows:

> *"The primary goal of wildlife management is to provide healthy life systems necessary to sustain Wisconsin's wildlife populations for their biological, recreational, cultural and economic values."*

Chapter NR 27, Wisconsin Administrative Code, which is necessary to implement Section 29.604, Wisconsin Statutes, governs listed endangered and threatened species. Four cave bats are currently listed as endangered and threatened species. (See: Section 27.03, Wisconsin Administrative Code). Given this listing, the WDNR possesses responsibility and authority as to these four cave bats (See: Sections 29.604, 227.11, and 227.24 Wisconsin Statutes).

Chapter NR 40, Wisconsin Administrative Code, as required by Section 23.22, Wisconsin Statutes, addresses invasive species identification, classification and control. Invasive species are classified into the following categories: prohibited and restricted. The white-nose syndrome fungal pathogen is listed as a prohibited invasive species (See: Section 40.04, Wisconsin Administrative Code). Given this listing, the WDNR possesses broad responsibility and authority as to control of white-nose syndrome fungal pathogen (See: Sections 23.09(2), 23.091, 23.11(1), 23.22, 23.28(3), 29.039(1), 227.11, and 227.24 Wisconsin Statutes).

Chapter NR 40, Wisconsin Administrative Code also establishes preventive measures. The purpose of these measures is to prevent the introduction and transmission of invasive species. Necessary preventive measures for white-nose syndrome are set forth in Section 40.07(8), Wisconsin Administrative Code. The WDNR possesses broad responsibility and authority to ensure that such preventive measures are developed, implemented, and followed (See: Sections 23.09(2), 23.091, 23.11(1), 23.22, 23.28(3), 29.039(1), 227.11, and 227.24 Wisconsin Statutes).

Consequently, it is recognized that the WDNR (in particular it's Natural Heritage Conservation (NHC) Program) has broad discretion and considerable decision making authority regarding endangered or threatened species (e.g., four species of cave bats), invasive species (e.g. white-nose syndrome) and related matters (e.g., bat population monitoring, white-nose syndrome disease surveillance, prevention, and control).

2. Groups Benefitting from the Plan

Broadly speaking, the public (current and future generations); local, state, and federal units of government; academia, scientific community; and HSB Cave owners will all benefit from an effective management plan.

Appropriate management of the cave and its bat populations affects Door County, the WDNR, and members of the general public who will benefit from the broad effects of such natural resource management. HSB Cave's acquisition is a specific goal of the *Door County Parks Department and Open Space Plan 2011-2015.* Data acquired during the initial information gathering stage of the planning project have become part of the Wisconsin Natural Heritage Inventory & Wisconsin Bat Program's *Cave & Mine Catalogue.* Information gathered by university partners benefits their research. Because we share bats with other states, numerous groups outside of Wisconsin will benefit from effective management of HSB Cave, including federal agencies such as USFWS, surrounding state agencies from Michigan, Minnesota, and Illinois, and private and public property managers. Federal and state agencies will benefit from data about environmental conditions at affected and

unaffected WNS cave sites. The general public will benefit from access to this unique resource for educational purposes.

D. Planning Process

1. Situation and Assumptions

a. HSB cave lies within the Niagara escarpment, a known sensitive biologic community and landform subject to processes of karstification. The cave is directly adjacent to the shoreline of Green Bay and is a documented groundwater resurgence point which has implications for water runoff conditions and impacts on the coastal region. More information about hydro geologic activity in this system is beneficial and will provide a better understanding of groundwater flow within the area.
b. Understanding, maintaining, and protecting this rare resource is a necessary component of cave stewardship. Currently, little is known about HSB Cave. It is a known sensitive and unique karst and biologic resource located within the coastal management zone. However, further information is needed in order to appropriately and effectively manage this resource in the future.
c. Door County's goal for this property is to allow some form of public access while ensuring effective cave management and resource protection. The Cave resources need documentation and effective management strategies need to be developed so the County is able to meet and maintain these long-term goals.
d. A WNS prevention plan is required at all cave hibernacula within the state of Wisconsin for land owners of hibernacula per Section Nr 40.07, Wisconsin Administrative Code.
e. Much is unknown about invertebrate species at HSB Cave and a precautionary approach should be taken in managing the cave for these resources until more is known about the habitat requirements of these animals.

2. Plan Development

Baseline inventory data (geologic, biologic, & cultural resources), combined with historical reports about HSB Cave, and the best available science, were utilized in the development of a *Rapid Resource Inventory & Assessment of HSB Cave (Inventory)* document. The Inventory document provides all relevant background support for the policies and guidance provided in this Plan. Ecological threats and detailed management guidance for cave resources are outlined in the *Rapid Resource Inventory & Assessment of HSB Cave*. Complete guidance measures to avoid take of bats are also provided in Appendices 1 & 2 of this document.

Recognizing that public involvement and buy-in is important in this process, the project Core Committee (WNDR & Door County) have endeavored to communicate information to the public, actively gather input from the public, provide members of the public meaningful opportunities to participate and then consider the public's input in making decisions.

Advisory committees composed of project partners (to provide scientific and technical expertise) and stakeholders (including representatives of groups interested in human use of the cave) were formed to provide input in the form of recommendations and plan review. The final Plan is meant to serve as a site-specific resource tailored to the unique circumstances at HSB Cave.

Considerations of the Core Committee in developing the Plan:

- → Develop a framework for making consistent management decisions using a science-based process that relies on the best available scientific information, supplemented by the professional judgment of a science advisory group, considering not only the direct effect of an action on endangered and threatened resources, but also the indirect and cumulative effects.
- → Collect and maintain data regarding the cave and associated resources for use in future management decision-making (benefits both County as a site-specific resource manager, and the State as a species and habitat manager, data may also benefit Federal species management decision-making).
- → Outline a process designed to help County/users preserve and protect endangered and threatened species and thus comply with applicable laws.
- → Similarly incorporate measures into the Plan to avoid the human-assisted transmission of the fungal pathogen and thus comply with invasive species laws.
- → Describe possibilities for public access including process for gaining general access and special activities.
- → Develop processes to encourage, facilitate, and conduct high-quality scientific studies of the cave.
- → Establish appropriate staff responsibilities and policies to protect the caves from potential aesthetic and ecological impacts by visitors and staff.
- → Address cave safety as it relates to management of the cave system

3. Implementation of the Plan

The plan will be implemented in accordance with completion of the following:

Phase 1

a. Approval of Cave Management Plan by the Door County Board of Supervisors.
b. Approval of the WNS Prevention/Control Plan (Chapter 5) by the WDNR

Phase 2

a. Development & adoption of an access agreement between Door County and the Horseshoe Bay Golf Club

Phase 3

a. County seeks funding for equipment & professional development for trustees/county staff
b. County completion of a Cave Safety Strategy(Chapter 4) & work to develop a safety resource network
c. County acquires dedicated caving gear, safety & rescue cache & develops a system for borrowing, storage, & cleaning (as outlined in the WNS Prevention/Control Plan)
d. County development of Cave Monitoring Protocol & Program
e. County development of cave education/interpretation guidance
f. WNS visitor screening materials are developed with WDNR guidance
g. County development of Trustee training/development opportunities (by Zone)
h. Zone 1 Trustee applicants apply & are “trained” for Zone 1 & WNS visitor screening
i. Cave is open for general access up to the Duck Under-via permitting process
j. Other zone access, research, & special project permit & Trustee applications are accepted and reviewed and may be approved or denied throughout Phase 2
k. Phase 2 & 3 items are presented as an informational item to the County Board of Supervisors

Phase 4

a. All cave zones open for general access and special activities (via request & review process)
b. Cave Monitoring Program begins

4. Plan Revision Process

The Plan is not meant to be a static document. It will be updated with new information about the cave, bats, and WNS from research, and continent-wide WNS surveillance results, and guidance from the WI WNS Implementation Strategy.

Revision (i.e. substantive revision) of the Management Plan may be initiated by Door County, the WDNR, or Horseshoe Bay Golf Club. A proposed revision must be in writing, and filed with the Parks Director. The Parks Director will immediately send notice of and any proposed revision to the Door County Soil & Water Conservation Department, Door County Corporation Counsel, WDNR, and Horseshoe Bay Golf Club. The Parks Director will, as soon as is feasible, refer the proposed revision, along with a report and recommendations, to the Airport and Parks Committee. The Airport and Parks Committee may: approve the revisions as proposed or with changes and refer the same to County Board; refer the proposed revisions back to the Parks Director with directions; or reject the proposed revision. The County Board may: approve (by adoption of a resolution) the revision as proposed or with changes; refer the proposed revision back to the Airport and Parks Committee with directions; or reject the proposed revision. Plan revisions become effective upon County Board approval.

Changes to the Inventory & Assessment of HSB Cave Resources shall be mutually coordinated and approved by the SWCD and Parks Department and presented as informational items to the Horseshoe Bay Golf Club, Door County Airport and Parks Committee, and County Board. The WDNR will provide periodic updates with regard to bats and WNS.

(Preceding 2 paragraphs incorporated under WDNR on p. 11 or in “Plan Revision Process” p.14).

E. Policy Statements

This policy statement aims to outline a set of fundamental tenets, which will act as overarching guiding principles in management of HSB Cave.

The predominate goals of this management plan are to secure, protect, and preserve Horseshoe Bay Cave and its resources, for the perpetual benefit, enjoyment, and use of all people. To assist in fulfilling these goals, the following are accepted as true:

→ Door County will provide leadership and oversight in the active management of HSB Cave.
→ The importance of the public-private partnership between the Cave owners, Door County and Horseshoe Bay Golf Club, cannot be overstated. Finding common ground for collaboration… and establishing a framework to address problems, take advantage of opportunities, and achieve goals… is absolutely essential to the management plans’ success.
→ Policymakers and regulatory agencies should ensure that all information used or relied upon in decision-making is based on sound science. All persons involved should take a precautionary approach to decisions about Cave resources and uses when information is limited.
→ It is wise to act with regard for the accumulated consequences or effects of activities that may occur at a distance, over time, or in combination with other actions.

- → Involvement of the public in the Cave's management… especially through public awareness, education, and interpretive programs, and reasonable opportunities for public input… is important.
- → Intergovernmental cooperation, by and between local, state, and federal entities, is necessary to address Cave management issues and opportunities.
- → Enhancement of the scientific and educational potential of the Cave are ends toward which efforts are to be continually directed.
- → Offering opportunities for public access, and improving the quality and safety of visitors' experiences, are ongoing aspirations.
- → This is, by necessity, an adaptable, flexible, and sustainable management plan.

Adoption of the management plan is not the conclusion, but rather the beginning. Active management over time, to achieve the goals, is the end-game.

F. Signature Page

Responsible agencies and organizations sign the document agreeing to the Management Plan for Horseshoe Bay Cave and WNS Prevention/Control Plan:

Recommended by:

Erik Aleson

Erik Aleson, Door County Parks Director

Concurred by:

William Schuster, Door County Conservationist

Grant Thomas, Door County Corporate Counsel

Jennifer Redell

Jennifer Redell, WDNR Cave & Mine Specialist

Paul White

Paul White, WDNR Conservation Biologist

Approved by: Daniel Austad

Daniel Austad, Chairman, Door County Board of Supervisors

CHAPTER 2: BACKGROUND & SUPPORTING INFORMATION

***For supporting information please see the *Rapid Resource Inventory & Assessment of Horseshoe Bay Cave* (Inventory) document.**

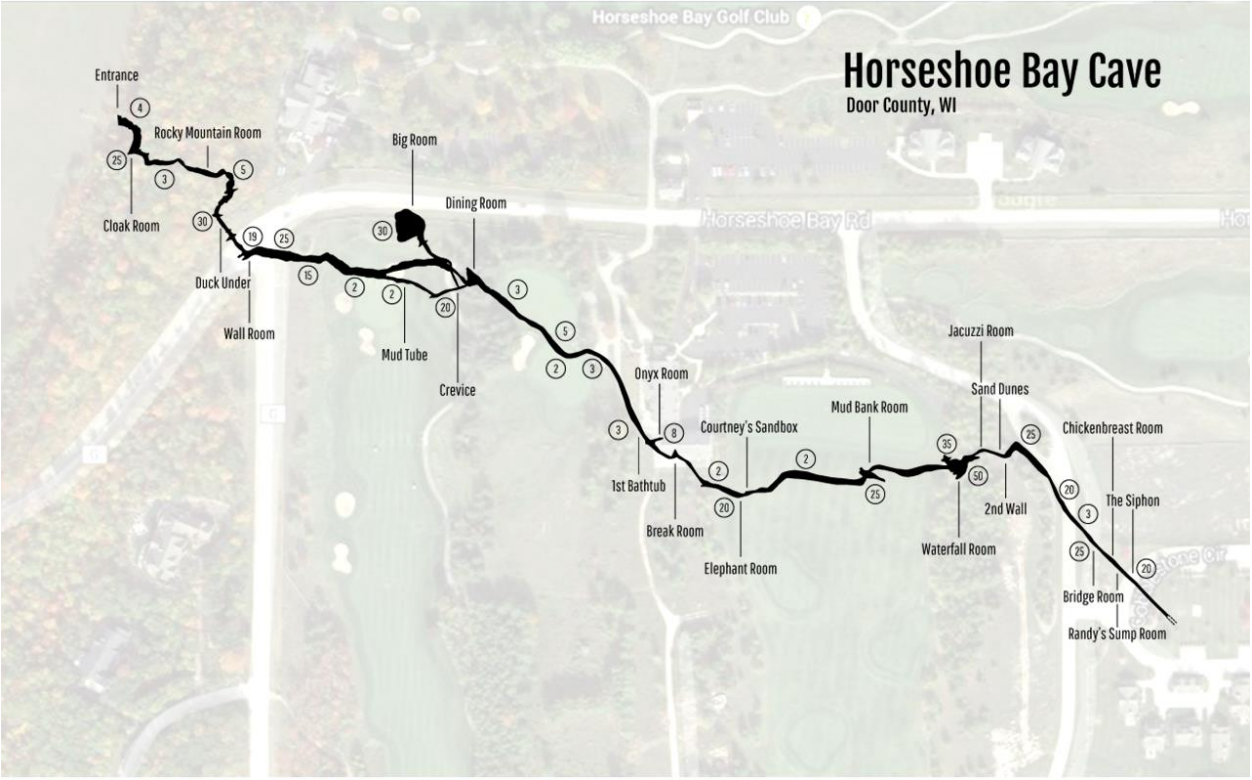


Figure 2: Map (not to scale) illustrating the approximate location of HSB Cave beneath the surface. Horseshoe Bay Golf Club will retain ownership of the majority of the cave. Door County owns the entrance of the cave up to and including the Cloak Room (Zone 1).

A. Cave Acquisition & County Access Timeline

Horseshoe Bay Cave entrance is in Frank E. Murphy County Park. This project has, by virtue of the adoption of several resolutions, the full support of Door County's Board of Supervisors.

Door County's acquisition of the cave's entrance ensures that it will remain in public ownership, be protected, and be available for appropriate public use(s). The cave's entrance and surface land beneath which part of the cave passes.

Phase I

2010-- Door County's acquisition of PIN 008-01-03292613Q (aka "the pasture") in July, 2010. This acquisition was funded, in substantial part, by grants (including a Wisconsin Department of Natural Resources Stewardship Program Grant) and donations. This parcel consists of 14 acres and was added to Frank E. Murphy County Park primarily for purposes of expanding parking for large events. This acquisition also served to (in part) bridge the gap between the park's boundary and HSB Cave. *See:* Resolution No. 2009-27, adopted on April 21, 2009.

Phase II

2010-- Door County acquired PIN 008-01-03292611QQ through foreclosure of tax liens by action in rem under Section 75.521 Wisconsin Statutes in October, 2010. This was a landlocked parcel, which included part of the 18th hole of Horseshoe Bay Golf Club ("HBCG").

2011-- The second element of Phase II was Door County's acquisition of the entrance to HSB Cave. This was accomplished in October, 2011, by an exchange of lands, consistent with Sections 75.69(2) and 59.69(8) Wisconsin Statutes. Specifically, Door County exchanged part of PIN 008-01-03292611QQ with the HBGC for part of PIN 008-01-03292614A. The latter includes the entrance to HSB Cave. This was done without the exchange of money. *See:* Resolution No. 2010-67, adopted on July 27, 2010, & Resolution 2011-67, adopted on August 30, 2011 (Appendix 7).

Phase III

The HSB Cave Inventory & Management Plan project

2011- 2012-- In partnership with Door County, WDNR applies for and receives funding (WCMP grant) to conduct a rapid resource inventory & assessment for the HSB Cave. Baseline data are collected periodically through this period.

2012-- Science Advisory Committee and Stakeholder Committee members are identified and provide input as part of the planning process. Both Inventory and Plan development begin.

2012-- Design and installation of a new bat-friendly gate to replace the cave gate in place since 1986. The gate permits authorized human access but serves to protect the cave resource and current hibernating bat population with minimal impact to bats or other species present. Bats were tagged and banded at both the cave entrance and maternity roosts near the cave in preparation for mid-winter and fall harp trapping band recoveries and for installation of a PIT tag antenna. Baseline data continue to be collected periodically through this period.

2013-- A directional infrared beam-break system was built and installed at the cave entrance to census and monitor the bat population. The system is powered by photo-voltaic/battery system. The beam-break system is intended to be long-term, standardized, durable infrastructure and will function for many years with occasional maintenance. Baseline data continue to be collected periodically through this period.

2014-- A Passive Integrated Transponder (PIT) tag reading antenna has been installed at the cave entrance to collect data on individually marked bats. Bats were tagged and banded at both the cave entrance and maternity roosts near the cave. Individually marked bats may be detected at both HSB Cave and other hibernacula or maternity roosts in Wisconsin or other states. These movements can then provide biologists with information on hibernation timing, individual and species ranges, and migratory patterns.

Phase IV

2014— Final review of the Inventory & Plan. Presentation of both documents to the Door County Board of Supervisors for approval, followed by implementation and administration of the Plan, including development of an Access Agreement with the HSB Golf Course.

B. Issues that Guide and Influence Management and Use

1. Cave Access and Ownership

Ownership

While not entirely settled (there are few cases to provide guidance in this particular context) the majority view appears to be that the cujus est solum maxim applies to sub surface ownership. This means, in context of a cave, that the owner of the surface of the land is taken to own the subsurface.

Door County

The HSB Cave entrance and surface land beneath which part of the cave passes are owned by Door County and managed by the Parks Dept. with concurrence from the SWCD for purposes of sciences and natural resource protection.

HSB Golf Club

It is believed that the majority of the cave passes below the surface of land owned by HSB Golf Club.

2. Access Agreement

Door County and HSB Golf Club will confer and meet, in good faith, with the intention of reaching a cave access agreement or to resolve questions arising under such an agreement. It is recognized that any cave access agreement should be reviewed with regularity and care, will evolve, and be subject to change.

The Access Agreement will require both surface lands and subsurface area be considered, as well as associated activities, to address the multidimensional aspect of cave management. Assurances will need to be given that activities occurring on the surface do not adversely affect the subsurface cave and that activities occurring within the cave do not adversely affect the surface lands.

It is anticipated that, to a significant extent, the interests of HSB Golf Club and Door County will align. To the extent they do not, the interests of each should, to the degree possible, be accorded robust and roughly equal protection.

C. Access

Policies, procedures, and protocols for access will be developed and instituted. These will be periodically reviewed, and revised as necessary.

Access is a privilege, not a right. Such is granted, and may be withdrawn, at the discretion of the County of Door. The County's decision-making processes are consciously based on commitments first to protection and preservation, second to education and scientific study, and third to recreation. Persons proposing to engage in activities viewed as consistent with this management plan (e.g., education, inventory, investigation, monitoring, protection, research, and restoration) will have the greatest possibility of being granted access.

Cave access requests must be in writing (using the approved form) and submitted to the Parks Dept. This writing, if the request is for special activities access, must include a detailed statement giving the reasons and objectives for access and the benefits expected to be obtained from the contemplated activities.

Each visitor to HSB Cave must, as a condition precedent to being granted access, review complete, date and sign the HSB Cave Access form (See: Appendix 5). Persons under the age of 18 must have a parent or legal guardian date and sign their form.

Access to cave passages that lie below the surface of land owned by HSB Golf Club will be addressed in the Access Agreement referenced above.

1. General Access

(e.g., Education & Interpretation, Photography & Videography, Monitoring and Management Planning)

General access is defined as access that will not result in any disturbance (movement, alteration, touching, handling) of cave physical, including biotic, resources. Access may take a variety of forms, educational tours for the public or students, trips to document the cave through photography or videography, trips to monitor cave resources such as speleothems or water levels.

The Director of the Parks Department will review requests and render a decision (i.e. approve, revise and approve, or deny the request).

2. Access for Special Activities

(e.g., Scientific Investigation, Restoration, Research, Survey & Mapping, Modification, Collection)

The Director of the Parks Department will review requests and, in coordination with the SWCD, Corporation Counsel and the WDNR Bureau of Natural Heritage, render a decision (i.e. approve, revise and approve, or deny the proposal).

Persons granted access for the purpose of special activities, shall promptly provide the County all data and results of any such activities. Ownership of, and access to, such data shall be determined by the County.

Access granted for special activities will be presented to the County Board or designated sub-unit(s) as information items.

3. WDNR NHI Review Process

(Required for Special Activities Research & Special Project Permits)

Wisconsin's threatened and endangered species law is set out in Section 29.604, Wisconsin Statutes. The County will coordinate threatened and endangered species impact determinations with the Wisconsin DNR. If threatened or endangered species are potentially affected by an activity, then action by and authorization from the Wisconsin DNR is required.

D. Special designations and conditions

1. Brief History of Access

HSB Cave has been impacted by a long period of unmanaged and occasionally improper visitor uses and activities. Many areas of the cave bear evidence of human impacts, and are in less than pristine condition.

E. Ecological and habitat-related

See Rapid Inventory & Assessment of HSB Cave

CHAPTER 3: MANAGEMENT, DEVELOPMENT, AND USE

A. Goal for Cave Management

Management goals include items to:

a. Protect and preserve Cave resources.
b. Enhance the scientific and educational potential of this Cave for the public.
c. Offer opportunities for public access, and improving the quality and safety of visitors' experiences.
d. Acknowledge and address concerns of, and limit liability risks to, the Cave owners.
e. Encourage civic engagement (i.e., an ongoing and dynamic conversation with the public on many levels) as a means to reinforce public commitment to HSB Cave and its resources.
f. Provide opportunities for scientific study of HSB Cave and its resources.
g. Provide opportunities for educational use of HSB Cave and its resources.
h. Develop and maintain appropriate responsibilities and policies to protect the cave from potential ecological and aesthetical impacts by visitors, volunteers, and staff.
i. Adhere to guidelines, processes, and requirements for use that ensures preservation of HSB Cave and its resources and visitor safety.
j. Secure, protect, preserve, and conserve HSB Cave and its resources (e.g., biotic, cultural, geologic, hydrologic, & paleontological).
k. Use the best available science when making management decisions.
l. Utilize a cave safety strategy to ensure visitor and employee safety in and around the cave.
m. Create and install trail designations inside HSB Cave to preserve and protect sensitive features.
n. Support and promote staff and visitor education on cave and karst systems, bats & WNS.
o. Institute a Trustee (staff/volunteer) training & education program.
p. Maintain a cave resource inventory by collecting and maintaining data regarding the cave and associated resources.
q. Develop and implement policies, procedures and protocols for HBC access, including access to and ownership of scientific research data.
r. Develop a cave monitoring program in order to continue to collect data that will inform future management decisions and that will track changes to the cave system.
s. Review and update the Plan on an as-needed basis.

B. Management Zones

Management Zones **(Fig. 1)** are intended as a tool to regulate HSB Cave access. HSB Cave is divided into four management zones: Zone 1; Zone 2; Zone 3; and Zone 4. The management zones are described below. Each Management Zone is subject to the General Requirements described above. Ecological threats and detailed management guidance for cave resources are outlined in the *Rapid Resource Inventory & Assessment* for HSB Cave. Complete guidance measures to avoid take of bats are also provided in Appendices 1 & 2 of this document.

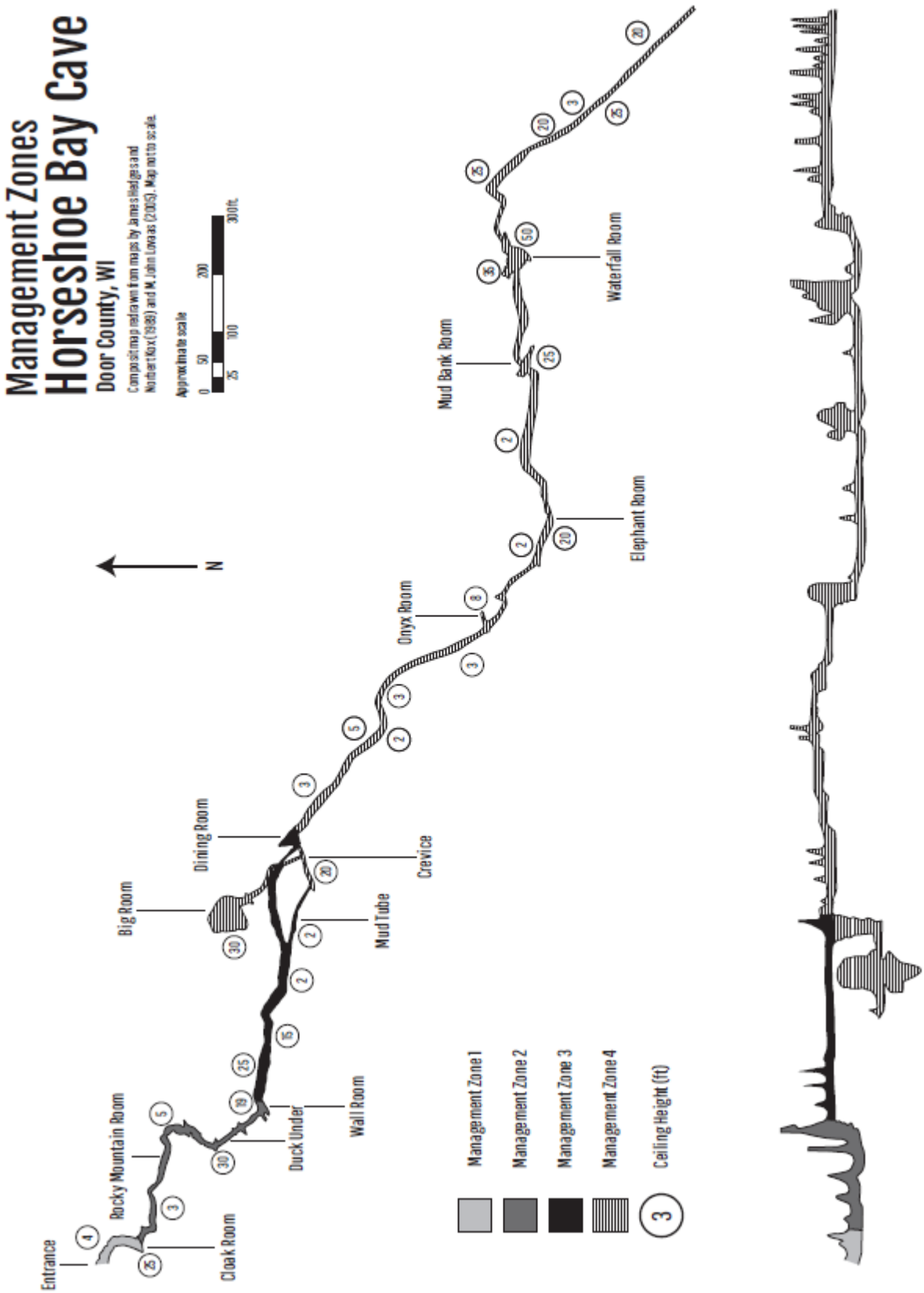


Figure 3: Management zones of HSB Cave as determined by sensitivity and safety.

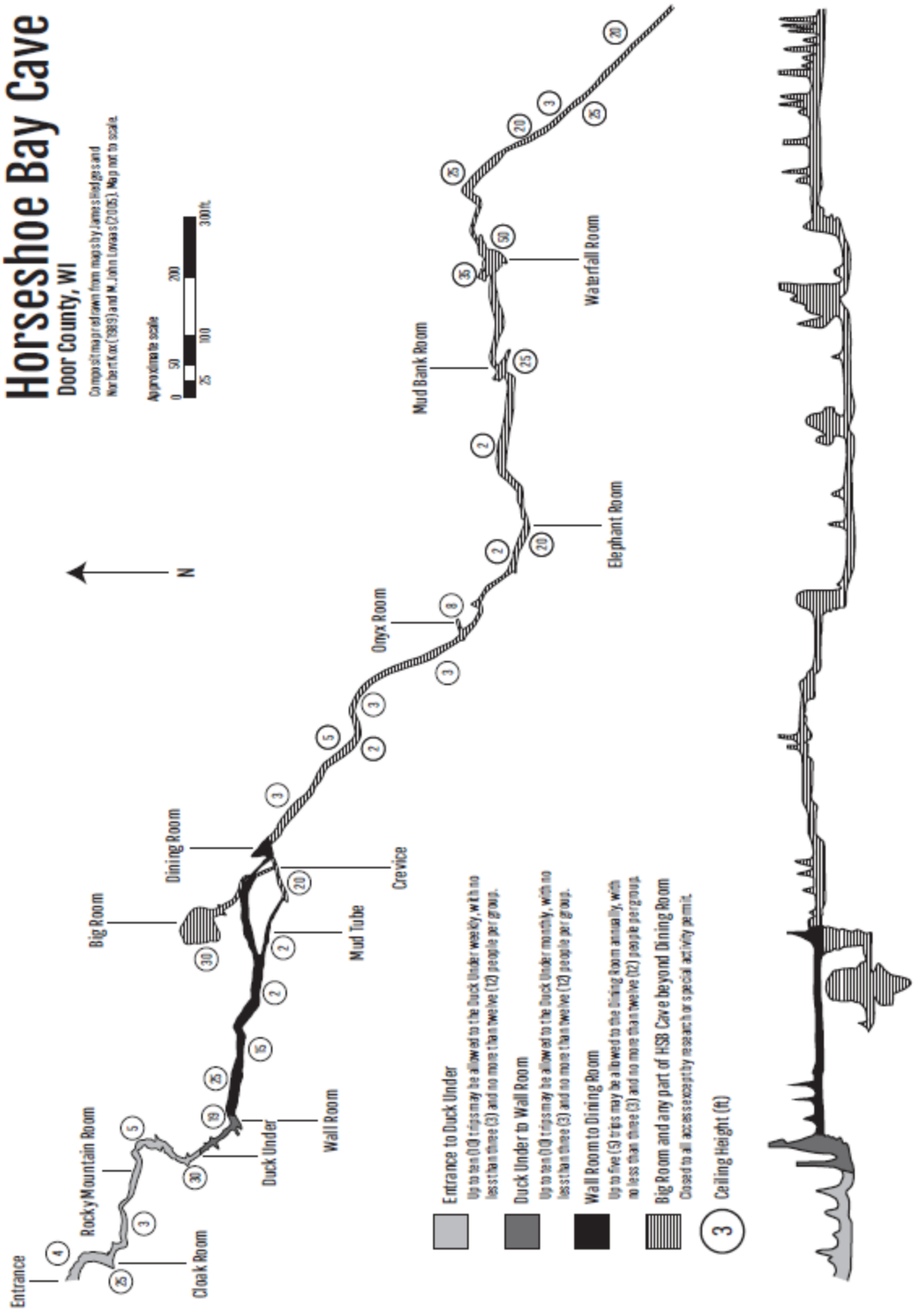
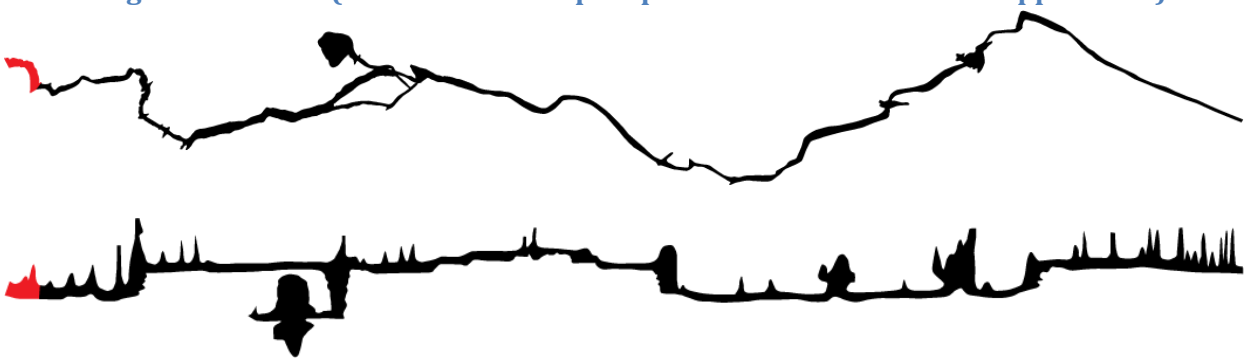


Figure 4: Access Restrictions of HSB Cave as determined by sensitivity and safety.

1. Management Zone 1 (Detailed zone maps & photos can be found in the appendices)



Passages / Rooms – Up to and including the Cloak Room

Zone ecology	Clothing & equipment	Skill & ability	Safety & rescue	Sensitivity & impacts
Variable daylight/temp/humidity	Street clothes	Minimal effort/skill	Bumping head on low ceiling	Fall swarm nightly activity Aug. 15- Oct. 1
Highest level of noise/disturbance	Helmet/gloves	Crawling all-fours	Easily accessible for rescue	Hibernation Oct. 1- May 15
33% of bats	Flashlight		5 min. travel to entrance	Sediment compaction
Fall swarm area	Knee pads may be preferred by some			Occasional flooding results in direct kill & nutrient depletion
Highest nutrient input				Invertebrate trampling
Highest richness & diversity				
Generally dry, occasional flooding				

Zone 1 Flagged/Sensitive areas- (under development)

Zone 1 Access Restrictions

Open to use with the fewest number of restrictions. This zone contains few vulnerable or fragile resources or is an area where many of the most vulnerable or fragile resources have already been disturbed or damaged and presents minimal safety/rescue concerns.

Up to ten (10) trips may be allowed to the Cloak Room weekly, with no less than three (3) and no more than twelve (12) people per group.

2. Management Zone 2 (Detailed zone maps & photos can be found in the appendices)

Passages / Rooms – Up to and including the Wall Room

Zone ecology	Clothing & equipment	Skill & ability	Safety & rescue	Sensitivity & impacts
Total darkness & less-variable temp/humidity	Clothing will get wet & muddy	Minimal effort/skill- not for the claustrophobic	Bumping head on low ceiling	Fall swarm nightly activity Aug. 15- Oct. 1
Moderate level of noise/disturbance	Helmet/gloves	Crawling all-fours	Low-air space risk at "Duck Under"	Hibernation Oct. 1- May 15
Moderate nutrient input	Headlamp & backup lights	Low-air space at "Duck Under"	Hypothermia risk	Sediment compaction & invertebrate trampling
Moderate richness & diversity	Wetsuit preferred		Easily accessible for rescue- low air space would pose challenging	Occasional flooding results in direct kill & nutrient depletion

Mud & puddles	Knee & elbow pads preferred		20 min. travel to entrance	Rocky Mtn. Rm. has fragile rimstone dams
"Duck Under" floods				Rocky Mtn. Rm. has isolated drip pools with potentially rare invertebrates

Zone 2 Flagged/Sensitive areas- (under development)

Zone 2 Access Restrictions

Open to use with the same restrictions as Zone 1 up to the Duck Under. Open to use with greater restrictions than Zone 1 from the Duck Under to the Wall Room. The resources are more fragile or vulnerable than in Zone 1, and present some safety/rescue concerns. Consequently, each visit may result in additional resource impacts and safety/rescue issues.

Up to ten (10) trips may be allowed to the Duck Under weekly, with no less than three (3) and no more than twelve (12) people per group. Up to ten (10) trips may be allowed to the Wall Room monthly, with no less than 3 and no more than 12 people per group. Trips to Management Zone 2 cannot, without the prior approval of the Parks Director or his/her designee, be conducted concurrent with Management Zone 1 trips.

3. Management Zone 3 (Detailed zone maps & photos can be found in the appendices)

Passages / Rooms – Up to and including the Dining Room

Zone ecology	Clothing & equipment	Skill & ability	Safety & rescue	Sensitivity & impacts
Total darkness & little temp/humidity variability	Complete submersion in mud & water	Strenuous crawling-not for the claustrophobic	Bumping head on low ceiling	Fall swarm nightly activity Aug. 15- Oct. 1

No noise/disturbance	Helmet/gloves	Crawling all-fours & belly/army crawl	Low-air space risk at "Duck Under"	Hibernation Oct. 1- May 15
Little nutrient input	Headlamps & backup lights	Low-air space at "Duck Under"	Hypothermia risk	Invertebrate trampling
Little richness & diversity	Full wetsuit necessary	10ft wall climb in "Wall Room"	Fall risk- single 10ft exposure	Soda-straws present in low-ceilinged passage
Mud & puddles, standing water	Knee & elbow pads preferred		Difficult & slow rescue- water, low ceiling, narrow passage, & low air space	
Flooding unlikely			45 min. travel to entrance- waiting patient would be hypothermic	

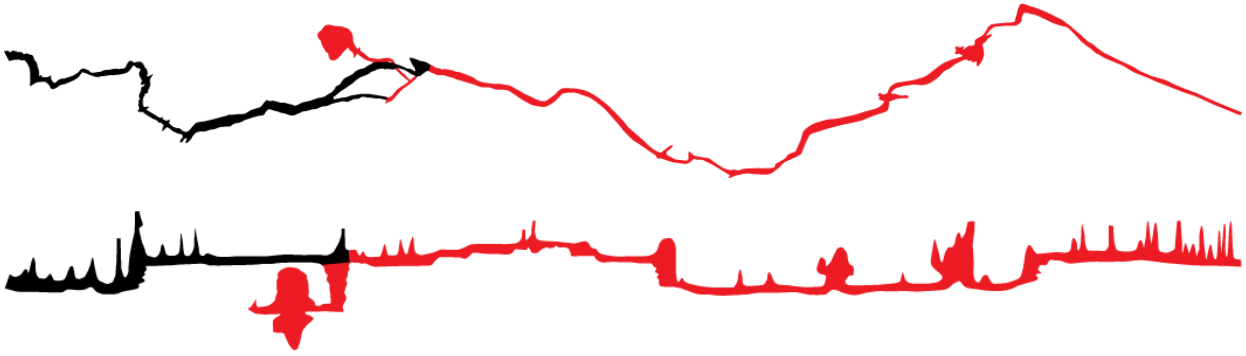
Zone 3 Flagged/Sensitive areas- (under development)

Zone 3 Access Restrictions

Open to use with greater restrictions than Zone 2. The resources are more fragile or vulnerable, and the safety/rescue concerns are greater, than in Zone 2. Consequently, each visit may result in additional resource impacts and safety/rescue issues.

Up to five (5) trips may be allowed to the Dining Room annually, with no less than 3 and no more than 6 people per group. Trips to Management Zone 3, without the prior approval of the Parks Director or his/her designee, cannot be conducted concurrent with Management Zone 1 or 2 trips.

4. Management Zone 4 (Detailed zone maps & photos can be found in the appendices)



Passages / Rooms – Includes the Big Room (4a) and any part of HSB Cave beyond the Dining Room (4b).

Zone ecology	Clothing & equipment	Skill & ability	Safety & rescue	Sensitivity & impacts
Total darkness & near stable temp/humidity variability	Complete submersion in mud & water	Strenuous crawling-not for the claustrophobic	Bumping head on low ceiling	Fall swarm nightly activity Aug. 15- Oct. 1
65% of bats in Big Room	Helmet/gloves	Crawling all-fours & belly/army crawl	Low-air space risk at "Duck Under"	Hibernation Oct. 1- May 15
Little nutrient input	Headlamps & backup lights	Low-air space at "Duck Under"	Hypothermia risk	Invertebrate trampling
Little richness & diversity	Full wetsuit & hood necessary (neoprene gloves & socks)	10ft wall climb in "Wall Room"	Fall risk- multiple spots 15ft exposure	Soda-straws present in low-ceilinged passage
Mud & puddles, standing water, breakdown & clay sediment	Knee & elbow pads preferred	20ft crevice descent & ascent while keyhole entry/exit negotiation	Extremely difficult rescue– results uncertain given hypothermic conditions & vertical crevice with narrow access points. Rescue beyond the Elephant Room is unlikely.	Calcite rafts present beyond the Dining Room

Flooding unknown-possible in passage to Big Room; Flooding frequent in Mississippi	Pack with water & food recommended	Tight crevice descent poses risk of getting stuck	2 hrs. travel to entrance-waiting patient would be hypothermic	Areas beyond the Elephant Room have been rarely visited and are pristine

Zone 4 Flagged/Sensitive areas- (under development)

Zone 4 Access Restrictions

Closed to all access except by research or special activity permit. This closure is to protect fragile or vulnerable resources and because of safety hazards. Generally, access to Zone 4 should add to the knowledge base regarding and/or otherwise give net benefit to HSB Cave. Special permit requests will be carefully screened on a case-by-case basis.

One trip every year will be reserved for photo-monitoring (following the creation of photo-monitoring stations), trail delineation and sign and flagging maintenance and any needed clean-up of the cave.

CHAPTER 4: CAVE ACCESS POLICY, PROCEDURES AND PROTOCOLS

Every entry into a cave, by any person, creates disturbance. The cumulative impact of even slight changes and disturbances, whether deliberate or otherwise, can lead to dramatic alterations of the HSB Cave, or to people's enjoyment of the cave. All undeveloped caves, by their very nature, contain some risks. It is necessary to mitigate safety/rescue issues. The primary objectives of this section are to minimize the impact of access on HSB Cave and its resources and to maintain a safe and quality experience for all people / groups.

A. Precepts

a. Access to HSB Cave must meet the County or State's goals and objectives for cave/bat management in a way which facilitates, helps to delineate, and provides for the informed management of the cave. Thus, access proposals must demonstrate why and how the knowledge gained from the specific visit will advance the goal of cave protection and preservation. This stringent requirement for permission to access the cave is unique, and reflects the County's perspective on the fragility of the cave and the rareness of this management opportunity.

b. HSB Cave is closed to general access each year from October 1st through May 15th to prevent disturbance to hibernating bats. Persons wishing to access the cave during this time frame are, unless exempt, required to hold an Endangered & Threatened Species permit from the WDNR Bureau of Natural Heritage Conservation. Access for purposes of bat monitoring, disease surveillance, or related WNS activities during this time period may requested or required.

c. Access requests should specify a date, the duration of the trip, the name of the responsible individual (Trustee), an explanation of why the trip is necessary, a description of how the proposed trip is consistent with and will further the purposes of HSB Cave's management, a clear trip objective including a summary of

what the trip will accomplish (in the case of educational trips a lesson plan is required), a description of group participants, and the itinerary and equipment to be used. A detailed list of requirements is provided in APPENDIX 5: HORSESHOE BAY CAVE ACCESS.

d. All non-county/WDNR staff lead trips must be accompanied by a designated Trustee specifically trained to lead trips into the cave.

e. Trustees' primary responsibilities will involve leading researchers who require cave access and guiding educational trips.

f. Trustees must insure that visitors are conservation-minded, cautious around delicate cave features at all times, follow any and all specific restrictions on activities within the cave, have the abilities appropriate for the cave (such as crevicing proficiency if they will be going to the Big Room), and are experienced in moving through delicate, physically challenging caves. However, it is the responsibility of visitors interested in accessing the cave to demonstrate these skills and attitudes to a Trustee.

g. Trustees will submit a list of trip participants with their requests. (See: APPENDIX 5: HORSESHOE BAY CAVE ACCESS.)

h. Trustees will obey all cave rules & safety procedures as delineated in this Plan and comply with state WNS rules. Trustees are also responsible for ensuring that all trip participants are aware of the challenges and risks associated with entry to HSB Cave, cave rules & safety procedures, and state WNS rules. All trip participants will be required to sign an Access Agreement prior to entering the cave.

i. One trip every year will be reserved for photo-monitoring (following the creation of photo-monitoring stations), trail delineation and sign and flagging maintenance and any needed clean-up of the cave.

j. Any damage to the cave, injuries, or related incidents that occur on a trip must be reported to the Parks Dept. immediately upon exiting the cave.

k. Access Permits (general or special) are required to enter HSB Cave at any time from May 16th through September 30th, and
   1) Permit application may be obtained from the Door County Parks Department, 3538 Park Drive, Sturgeon Bay, WI 54235, 920-746-7130, dcparks@co.door.wi.us or online at http://map.co.door.wi.us/parks/
   2) Permits are valid for the entry date / time listed on the permit.
   3) Permits cannot be transferred to others.
   4) Permits are issued on a first-come-first-serve basis. Preference for permits may be given to people / groups who applied for but did not receive a permit in the prior calendar year.
   5) The County will not process / approve permit requests, for a given Zone, when the maximum number of visits is reached, until the next allocation period begins.
   6) No more than one group will be allowed to enter HSB Cave at any one time.
   7) No more than three groups per day will be allowed to enter HSB Cave.

8) Trip reports are required for all visits. Any injury to person, damage to HSB Cave or its resources, damage to equipment, or incidents of significance that occur during a trip must be reported to the Parks Dept. immediately upon exiting the cave.

l. Door County will, in the sole exercise of its discretion, resolve any user conflicts which may arise.

m. Trips by Door County staff and/or Wisconsin Department of Natural Resources staff or their designees may, at Door County's sole discretion, be exempt from some or all of these access regulations.

B. Dedicated Gear Policy

In accordance with the approved HSB Cave WNS Prevention Plan anyone entering HSB Cave beyond Zone 1 shall be required to wear clothing & gear dedicated for use at HSB Cave.

C. Cave Modification

Trip/project participants exploring new leads or moving through a cave in a known area are not allowed to dig or to remove debris or stones. Such an activity conducted at the time, without County permission, will only be allowed if the modification activity is essential to the safety of travel through a specific area of a cave and must be reported immediately upon exit. Recognizing that air flow or water flow through a constriction or other pertinent information about a cave may often indicate undiscovered and potentially important cave resources, permission for modification must be approved by the Parks Dept. and SWCD as an approved Special Activity. Proposals for cave modification must demonstrate that the proposed modification will not cause adverse impacts to HSB Cave or it resources.

D. General Access

General access includes, but is not limited to, education & interpretation, photography & videography, monitoring, management and planning.

HSB Cave presents Door County with a unique opportunity to understand and protect a delicate, diverse cave. All entries into HSB Cave may cause seen or unseen damage to this nearly pristine natural heritage feature. Yet understanding the processes that tie the cave to the surface and which function within the cave is essential for proper management.

a. Food and beverages (other than water), including candy and gum, are not allowed in Zones 1 & 2. Responsible transport and consumption of food and beverage is allowed (and encouraged) in Zone 3 and beyond. Care should be taken not to drop/leave crumbs and to avoid spills inside the cave. All trash and leftover food and beverage must be removed from the cave.

b. Visitors to Zone 1 may not touch walls or formations inside the cave. Oily secretions from skin can discolor formations and inhibit calcite build-up. Gloves are required beyond Zone 1 and will be rubber, neoprene, or plastic to minimize the transfer of soils and the deposition of cloth fibers. Visitors traveling beyond Zone 1 should be cautioned not to touch walls or formations (except where necessary to navigate through passages). Muddy hands, arms, and other areas of the body will create dirty marks on cave walls and formations and require cleaning with clear water from inside the cave.

c. No human waste of any kind may be deposited in the cave. Solid waste must be transported in plastic bags, which can be emptied into a toilet upon reaching the surface. Liquid waste may be carried in plastic bottles, which can be emptied into a park toilet while the container itself is disposed of in a park garbage can or recycled.

d. All equipment, supplies, trash, clothing and other materials taken into a cave must be removed by the cavers at the end of their trip (unless specified in a permit).

e. HSB Cave is inhabited by a wide variety of living organisms. It is the responsibility of Trustees and all other visitors not to harm these animals, fungi, or other cave life. Visitors must be very careful to avoid injuring life of the twilight zone.

f. Bats occasionally use caves as summer roosts. When a bat is encountered that is awake, flying, chirping, or moving, Trustees and visitors should immediately leave the area. Visitors may move past solitary bats, which are sleeping or resting on a wall or ceiling. However, while moving past the bat, all visitors should be quiet, move quickly and avoid shining lights on the animal.

g. Visitors should carefully select their clothing when visiting HSB Cave. WNS Visitor Screening is required by the HSB Cave WNS Prevention Plan. (Chapter 8: WNS PREVENTION/CONTROL PLAN). Clothing and gear dedicated to HSB Cave is required for those traveling beyond the Cloak Room.

h. Carbide and carbide lamps and all tobacco products, including cigarettes, cigars, snuff, and chewing tobacco may not be used in HSB Cave. Candles and other open flames may not be used inside HSB Cave except in case of an emergency.

Other rules and restrictions related to cave safety can be found in CHAPTER 7: CAVE SAFETY STRATEGY.

E. Special Activities

Special activities include, but are not limited to, modification, research, and survey and mapping.

Special Activities are, unless there is an express indication herein to the contrary, subject to all Management Plan provisions.

Any permit issued hereunder may be revoked, at the County's discretion, upon a determination by the County that the permittee has violated any provision of the Management Plan or has failed to comply with any other condition upon which the permit was issued. The County may, at its discretion, refuse to issue a permit hereunder to any person who has violated any provision of the Management Plan or who has failed to comply with any condition of a prior permit.

Persons violating these provisions will be subject to (civil or criminal) prosecution under state and federal laws.

1. Modification

Modifications to HSB Cave can have dramatic effects, e.g., on the Cave's microclimate ... by changing temperature, humidity, and water flow. These effects may, in turn, negatively impact the Cave and its resources.

Consequently any modification of HSB Cave is prohibited without prior written permission (i.e., permit) from the County (i.e., Parks Department). Person(s) proposing any modification to HSB Cave must submit a written proposal (i.e., application) that: details the modification(s); establish the benefits of the modification(s); *and* demonstrate that HSB Cave or its resources will not, directly or indirectly, be adversely affected by the modification(s). The County may solicit the assistance of outside specialists in various disciplines in the vetting of Cave modification proposals and proposers. Decisions (e.g., approve, modify and approve, or deny) regarding HSB Cave modification proposals will be made on a case-by-case basis, and are at the sole discretion of the County.

Proposal requirements and permit forms are included in Appendix 5.

2. Research

Research, relating to HSB Cave and its resources, is vital. All research conducted in HSB Cave must be designed to: further the County's knowledge , and assist with the informed management , of the Cave and its resources; produce educational and interpretive information and materials useful to public understanding of the Cave and its resources; and involve the orderly and scholarly collection, analysis, and dissemination of research material.

There are (generally speaking) two categories of research; *basic* and *applied*. *Basic research* is the systematic investigation into and study of materials and sources in order to establish facts and reach new conclusions. The primary purposes of basic research are documentation, discovery, interpretation, or the research and development (R&D) of methods and systems for the advancement of knowledge. *Applied research* is a form of systematic inquiry involving the practical application of science. It is used to establish or confirm facts, reaffirm the results of previous work, solve new or existing problems, support theorems, or develop new theories. A research project may also be an expansion on past work in the field. To test the validity of instruments, procedures, or experiments, research may replicate elements of prior projects, or the project as a whole.

All research conducted within HSB Cave requires the submittal of a written proposal (i.e., application) and subsequent written approval (i.e., permit) of the County (i.e., Parks Department). The County may solicit the assistance of outside specialists in various disciplines in the vetting of cave researchers and research proposals. Decisions (e.g., approve, modify and approve, or deny) regarding HSB Cave research proposals will be made on a case-by-case basis and are at the sole discretion of the County.

Researchers should use non-consumptive techniques wherever possible. If it will be necessary to alter or damage HSB Cave or its resources in order to obtain useful scientific data, the researcher is required to include in the proposal an assessment of the potential for and/or level of Cave or resource impacts anticipated from the research. The researcher must evaluate the extent to which the research may individually affect HSB Cave's biological, geological, hydrological, archeological, paleontological, and other resources. Researchers must justify the need for the proposed collection or sampling.

Intellectual property protection is a fundamental consideration for all research. The intent is that ownership (including for purposes of copyright, patent, and otherwise) of any and all results generated by research is in the County. County will, upon request, extend license to allow the permittee reasonable right to use, but not sell or otherwise exploit, the results of research.

Proposal requirements and permit forms are included in APPENDIX 5: HORSESHOE BAY CAVE ACCESS.

3. Survey and Mapping

Cave surveying is the process of measuring a cave so that an accurate map of the cave can be made. Without an accurate survey any resulting map will be suspect and of limited use.

Any survey or mapping of HSB Cave requires the submittal of a written proposal (i.e., application) and subsequent written approval (i.e., permit) of the County (i.e., Parks Department). The County may solicit the assistance of outside specialists in various disciplines in the vetting of Cave survey / mapping proposals and proposers. Decisions (e.g., approve, modify and approve, or deny) regarding HSB Cave survey/mapping proposals will be made on a case-by-case basis, and are at the sole discretion of the County.

The ultimate goal is a three-dimensional map that; shows the HSB Cave layout to help in understanding the Cave and its resources; determines the relationship of the Cave to the surface land, and leads to further studies.

Ownership of any and all surveys and maps that result is in the County.

Proposal and permit forms are included APPENDIX 5: HORSESHOE BAY CAVE ACCESS.

4. Activities and permitting synopsis (details for application and permitting in Appendix 5):

Activity	Permit type	Permit requirements	Reporting
Educational tour	General access	completed permit application	use the reporting form found on the back of the permit
Photography/videography trip	General access	completed permit application	use the reporting form found on the back of the permit
Cave inventory/monitoring program work	General access	completed permit application	use the reporting form found on the back of the permit & submission of inventory/monitoring data sheets to the Parks director
Management/planning trip	General access	completed permit application	use the reporting form found on the back of the permit
Trustee/volunteer training	General access	completed permit application	use the reporting form found on the back of the permit
Research/collection	Research	Accepted research proposal	standard scientific report required (deadline to be determined during review of permit application)
Survey/mapping	Special activity	Accepted survey/mapping proposal	to be determined during review of permit application
Modification/development	Special activity	Accepted special activity proposal	standard scientific report required (deadline to be determined during review of permit application)
State/Federal known E/T species monitoring	No permit required		

County management/maintenance work	No permit required		
Rescue planning/mock rescue	Special activity	Accepted special activity proposal	Trip report required including a list of participants and summary of outcomes
Emergency response	No permit required		

CHAPTER 5: CAVE MONITORING PROGRAM

Bat monitoring at HSB Cave requires and endangered/threatened species permit and will be conducted by the WDNR and currently involves WNS detection surveillance, general health and population monitoring, tracking of marked individuals.

Ecological threats and detailed management guidance for other cave resources are outlined the *Rapid Resource Inventory & Assessment* for HSB Cave. More information is needed about cave resources, which can be collected through establishment of a resource monitoring program. Resource inventory and monitoring may include visitor impacts, water quality monitoring, water depth and flow monitoring, invertebrate monitoring, sediment and bone identification and documentation and cultural resource documentation. Cave restoration may be necessary as determined through cave inventory and monitoring.

The objectives of cave monitoring are to document and understand changes occurring in caves in the Parks Dept., particularly those which are human-caused. Establishing, conducting, and revising a cave monitoring program is the responsibility of the County. One purpose of this program will be to determine human impacts on caves in relation to the cave management objectives. Using knowledge gained from monitoring, fragile resources in the caves can be protected, restored or properly maintained. If it is determined that human use is adversely affecting cave resources, the current cave access or in-cave protocol can be changed to better protect the cave.

Visitor impact monitoring will be accomplished chiefly using a combination of photo transects and cartographic techniques. Photos should be repeated precisely using cave maps, compass bearings, inclination and exposure information, and duplicate equipment, as required. Properly documenting (dating, numbering and referencing) and filing the photographs and accompanying information will be the responsibility of the Parks Department. Photos will be stored with the Parks Department.

Cave permit and register records will be filed and maintained by the Parks Dept. Currently photo monitoring of cave passages will take place one time per year. The frequency of repeating cave-photo transects will be determined according to visitor use levels or documented resource degradation as determined by the County. Photo monitoring will not be conducted in all areas of HSB Cave because a)

in rarely visited areas the impact of monitoring may be greater than the impact of cave visitors and b) for reasons of practicality or safety.

1. Restoration guidance

Certain activities have caused damage to the cave resources. Broken formations, muddied speleothems and walls, graffiti, sediment piles from digging, trash, and altered microclimates are all evident in HSB Cave. While some of this damage can never be repaired, it is possible to correct some of these problems. In general, clean-up and restoration activities should be conducted in a cautious manner to insure that no additional damage to cave features occurs through inadvertent actions. Special attention should be paid to biological resources, sediments, and speleothems (for example, removing wood and other organic material a little at a time over an extended period to allow invertebrates living in or near the wood to relocate).

CHAPTER 6: CAVE EDUCATION & INTERPRETATIVE PROGRAM (currently being developed)

The natural history interpretation of HSB cave resources is an appropriate and important response to the presence of these resources. As an integral aspect of Murphy County Park, the cave can be an excellent backdrop to quality interpretation, designed to answer the visitors' questions concerning park geology, biology, and cave-specific speleology.

While it is very important to obtain high quality information about cave resources, it is equally important to communicate the results to land managers and landowners, and visitors. Caves are sensitive, potentially variable features, which are challenging to understand and assess. They are important County and State resources and of significance in their own right. Caves could also present an extreme hazard to inexperienced or unskilled visitors who attempt to visit them. Cave conservation is a management challenge that requires a conservative, judicious approach to the dissemination of information, an active approach to research, information gathering and data collection, and sensitivity on the part of cave managers to the special features of caves which may be easily and irreparably damaged, and which may present potential dangers to uninformed members of the public.

All partners involved in the use of HSB Cave (including the cave system itself) benefit when a larger portion of the target audience understands the role of caves and karst. Presentations, tours, pamphlets, interpretive signs, websites, news stories (including photographs + diagrams of the subterranean "plumbing"), public meetings and, especially, face-to-face discussions are all avenues of effective communication about the cave.

Communication: It is hoped that the cave inventory results will be shared and discussed by landowners, land managers, agency personnel, local conservation groups, law enforcement/emergency personnel and tourists/visitors. Any mention of Horseshoe Bay Cave should include a message regarding cave preservation & protection. Interested parties seeking information on

caves should be given assistance and information based upon the purpose of their inquiry and the management criteria pertinent to their area of interest.

Sensitive information: HSB Cave is part of the Cave & Mine Catalogue in Wisconsin's Natural Heritage Inventory (NHI) database. NHI data about endangered or threatened species are sensitive because many rare species are vulnerable to collection, disturbance and/or destruction. Sharing NHI data with the public may threaten the continued existence of these species. NHI data are exempt from the Wisconsin Open Records Law and WDNR staff may not share specific information with external individuals or organizations. Caution should be used when sharing information specific to the use and timing of HSB Cave as a bat hibernation site (for example, spring emergence and fall swarm dates should not be shared or advertised unless staff will be on hand at the event to provide guidance for the public about how to watch without disturbing bats).

Partnerships: A dialogue between County cave managers and Natural Heritage Inventory staff should continue to be an important outcome of this project. Cave science advisory group members and similar resource experts will continue to be important to cave management efforts. Opportunities exist for establishing strong partnerships with other agencies, academic institutions, public schools, and conservation groups.

Landowner stewardship: An attempt should be made to work with private landowners to inform them of the ecological significance of their properties and how to effectively manage them. Alternatives, such as conservation easements or tax law incentives, should be presented to landowners to enroll their land in some sort protection status.

Educational programming: Cave tours are an "active" form of interpretation and can be conducted by volunteer Trustees. Other possible active forms include evening programs and guided hikes. Further options, involving a passive form of interpretation, include signs, brochures for the general public, messages on permits, and displays teaching about bats. Proper training of Trustees is necessary and will be provided by the County with assistance from the WDNR.

Interpretive talking points/tour script for Zones 1 & 2: Currently being developed.

Interpretive displays/signage: Future needs for or plans for education-related infrastructure within the cave or near the entrance will be addressed through the Special Activities proposal, review, and permitting process on an as-needed basis.

CAVE TRUSTEE PROGRAM

A. Recruitment, Screening, and Selection

B. Skills Required

C. Training Required

D. Assessment of Skills

E. Activities

F. Authority and Responsibilities

The Cave Trustee program is a new and evolving idea based upon the long-used, cave-management concept of trip leaders.

a. Cave trustees may serve as volunteers, may be considered County employees, may be unpaid interns, or may be independent contractors. Issues related to insurance, liability, and indemnification will be addressed on a case-by-case basis.
b. Trustees working with children in any capacity shall be subject to a background check.
c. Trustees' primary responsibilities will involve leading researchers who require cave access and guiding educational trips. Trustees must insure that visitors are conservation-minded, cautious around delicate cave features at all times, follow any and all specific restrictions on activities within the cave, have the abilities appropriate for the cave (such as crevicing proficiency if they will be going to the Big Room), and are experienced in moving through delicate, physically challenging caves. However, it is the responsibility of visitors interested in accessing the cave to demonstrate these skills and attitudes to a Trustee.
d. Final determinations of a person's qualifications to enter the cave will be made by the Parks Dept. Trustees leading trips beyond the Wall Room will need to be accomplished “crevicers” and "chimneyers" who have experience moving and supporting their body weight in narrow passages (one to five feet wide) far above the cave floor, and be comfortable with and have experience in tight passages.
e. Trustees are expected to be active contributors of ideas for conservation-oriented management of the cave. They can act as a ready source of knowledge and experience for the County.
f. Application for Trusteeship should be sent to the offices of the Parks Dept. in letter form and should include the individual's experience with cave conservation (clean-ups, cave-gating, cave safety training, etc.), vertical experience (longest drops, most drops per trip, rigging ability, etc.), personal caving experience (numbers of times in HSB Cave, recent caving trips, long caving trips, etc.) other qualifications and three references. Trustee applicants should seek positive, honest references from others active in caving.
g. Applications for Trustees will be accepted at any time.

CHAPTER 7: CAVE SAFETY STRATEGY (Currently being developed)

Safety (risk management) is a primary consideration in the management of HSB Cave. That being stated, it must be recognized that the County cannot make HSB Cave completely safe at all times for all users.

The purpose of this Cave Safety Plan is to establish procedures, processes and protocols that can be followed to assure minimal risk to persons entering HSB Cave. This Plan consists of risk assessment, pre-planning, cave safety guidelines, and servce and rescue.

A. Safety planning

1. Safety resources

Safety resources group:

2. Safety training

3. Mock Rescue

4. Safety cache

B. General Safety Strategy

1. Visitor Screening

Education, physical ability, and awareness (mental preparedness, physical awareness)

2. Top-Cover Procedure

3. Equipment

a. Helmets are required in the cave. Caving or rock-climbing helmets with a 5-point harness are required for those traveling beyond the Wall Room.
b. All persons traveling beyond the Wall Room must wear a neoprene wetsuit.
c. Etc.

C. Conservation during search and rescue operations

Caves contain potential dangers to cavers, park employees and other visitors. A large scale search or rescue will require the assistance of outside resources, organized and managed by the County, but the County alone will be responsible for an initial response, based upon the procedures described in the Cave Safety Plan (Chapter 4).

The cave resources of HSB Cave are unique and significant. Cave rescue operations can easily have a detrimental effect on these resources and rescuers must consider the cave in their operations. In situations where the safety of the victim can be maintained, options which help to protect the cave must be exercised. Examples of options which may be available include alternate passages, alternate routes in the same passage, rigging areas to avoid a high volume of rescuer traffic, padding or covering cave formations, careful placement of litter bearers, use of "spotters" to assist rescuers in avoiding speleothems, speleogens and other features, and having rescuers follow the normal trails and routes used by cavers on recreational or research trips into a respective cave, etc.

Rescue operations when bats are present (October 1- May 15) shall endeavor to minimize disturbance to hibernating bats. (For example, rescuers may not wait in the cloak room or discuss operations in/near the Cloak Room if staging and discussions can take place outside the cave or in areas with fewer hibernating bats.)

D. Safety Strategies & Guidance by Zone

1. Management zone 1: Entrance- Cloak Room
2. Management zone 2: Cloak Room- Wall Room
3. Management zone 3: Wall Room- Dining Room
4. Management zone 4: Big Room/Beyond the Dining Room

E. Incident & Rescue Operations

1. Chain of Command
2. Incident Command System (ICS)

Reporting and review of safety & rescue

CHAPTER 8: WNS PREVENTION/CONTROL PLAN

A. Plan Approval and Exemption

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
Box 7921
Madison WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
FAX 608-267-3579
TTY Access via relay - 711

June 24, 2014

Subject: Plan Approval and Exemption for Horseshoe Bay Cave located in Section 3, T29N-R26E, Door County, Wisconsin

Dear Door County:

New rules that took effect in Wisconsin on December 13, 2010, require any person who owns or operates an active mine or a commercial cave or mine to ensure that each individual entering or exiting the person's active mine or commercial cave or mine complies with several specific **preventive measures** that are intended to stop or slow the introduction into or transmission within Wisconsin of *Geomyces destructans,* the fungus that is associated with white-nose syndrome in cave bats.

These preventive measures include a ban on bringing or placing any equipment, gear, clothing or other object of any kind in or near a Wisconsin cave or mine if the object has been in or near a cave or mine located outside of Wisconsin.

The preventive measures also require that Department-approved cleaning or decontamination protocols be followed before any equipment, gear, clothing or other object that has been in or near a cave or mine in Wisconsin it is brought or placed in or near another cave or mine in the state. In addition, the preventive measures require that Department-approved cleaning or decontamination protocols be applied to any equipment, gear, clothing or other object of any kind that is removed from any cave or mine or from the area within 100 feet of any cave or mine. Finally, the preventive measures require that Department-approved cleaning or decontamination protocols be applied to any person or object that has been in contact with a bat. (Dedicated equipment, gear, clothing and other objects used exclusively in or near a single cave or mine and stored exclusively in or near that cave or mine are exempt from the protocols.)

However, to provide for regulatory flexibility, the new rules allow the Department to exempt any person, including owners and operators of mines and caves and their visitors and employees, from the preventive measures if it will not significantly increase the risk that *Geomyces destructans* (white-nose syndrome fungal pathogen) would be introduced or transported to other locations.

With certain exceptions, the new rules also call for owners and operators of caves and mines to develop and submit a written **prevention plan** for each cave or mine to prevent the introduction and transmission of *Geomyces destructans* (white-nose syndrome fungal pathogen). The prevention plan must include a description of practices that will be installed or implemented by the owner or operator to prevent the introduction or transmission of *Geomyces destructans* via human transmission. The plan may include practices such as screening visitors, cleaning equipment, gear, clothing and other objects before they are brought into the cave or mine or upon their removal, the use of dedicated equipment, gear, clothing and other objects, and modification of the cave or mine environment to make it unsuitable for establishment and transmission of *Geomyces destructans*.

In approving a prevention plan, the department must include any exemption from the preventive measures that it has granted to the owner or operator. In establishing conditions of a plan approval, the Department must consider the site-specific risk of *Geomyces destructans* introduction and transmission along with the feasibility and reasonableness of alternative practices for the prevention of *Geomyces destructans* transmission or introduction.

Determination

Based on information available to the Department, including the attached white-nose syndrome prevention plan dated August 23, 2010 for the Carolyn's Caverns system and Montgomery Cave (cave or mine), and discussions between the you (the owner or operator) and Department staff, the Department has considered the site-specific risk of *Geomyces destructans* introduction and transmission along with the feasibility and reasonableness of alternative practices for the prevention of *Geomyces destructans* transmission or introduction and has determined that the attached plan should be conditionally approved.

The Department has further determined that a conditional exemption from the preventive measures required by s. NR 40.07 (8) (b) and (c), Wis. Adm. Code, for the owner or operator and for persons entering and leaving the cave or mine will not significantly increase the risk that *Geomyces destructans* (white-nose syndrome fungal pathogen) would be introduced or transported to other locations, if the owner or operator complies with the attached prevention plan as approved by the Department.

Accordingly, under s. NR 40.07 (8) (e) and (f), Wis. Adm. Code, the Department hereby approves the attached white-nose syndrome prevention plan and grants this exemption, subject to the following conditions:

1. The owner or operator shall comply with and implement the plan as approved by the Department and shall maintain as appropriate all practices specified in the plan.

2. The owner or operator shall maintain a copy of the approved prevention plan and this exemption at the cave or mine covered by the plan and exemption or an alternate location approved by the Department and shall make the copy available for inspection upon request by the Department at any reasonable time.

3. At the request of the owner or operator, the Department may modify the conditions of this plan approval and exemption at any time in writing.

4. This plan approval and exemption may be transferred with prior written approval of the Department.

5. Unless the Department determines that emergency conditions require a shorter time, this plan approval or exemption may be modified or revoked by the Department following written notice provided 30 days in advance to the owner or operator if, based on new information or changed circumstances, the Department determines that the approved plan or exemption will significantly increase the risk that *Geomyces destructans* (white-nose syndrome fungal pathogen) would be introduced or transported to other locations or it determines that any condition of this plan approval and exemption is not being complied with.

6. This plan approval and exemption takes effect on the date of this determination.

Sincerely,

Erin Crain, Director
Bureau of Natural Heritage Conservation

cc: Dreux Watermolen – SS/7
Chandra Harvey LS/8
John Welke – LE/8
Attach.: white-nose syndrome prevention plan

B. Site-specific WNS Prevention/Control Policies

Wisconsin Department of Natural Resources
White-Nose Syndrome Prevention Plan
for underground sites with high human visitation

Horseshoe Bay Cave, Door County, 5/16/2014

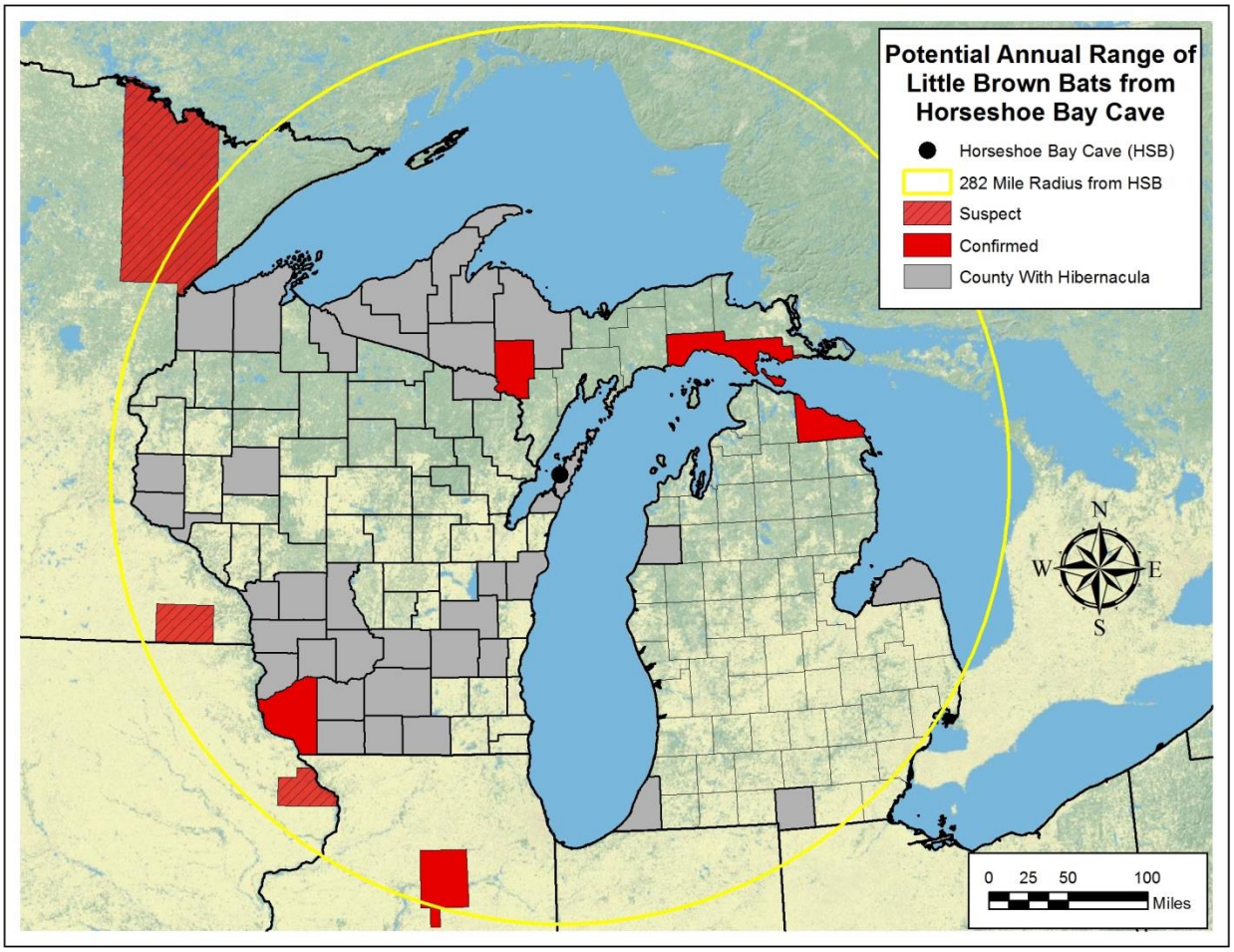


Figure 5: Individuals emerge each spring and disperse to summer roost and foraging areas. The same individuals will return each autumn to the cave entrance to mate and prepare for hibernation in HSB cave.

Goal:
Risk Management: prevent the introduction of white-nose syndrome (WNS) into Wisconsin tourist caves or mines which may then be spread to additional hibernacula through bat to bat transmission.

Objective:
Balance natural resource protection in Wisconsin with additional values, i.e., economic factors related to tourism, cave recreation, education and awareness building.

Wisconsin Department of Natural Resources
Proposed actions at underground sites with bats and high human visitation:

a. Prevent unauthorized human access to HSB Cave
b. Provide decontamination protocols to cave users
c. Use WNS visitor screening materials for the general public visiting Zone 1
d. Use HSB dedicated gear (and only dedicated gear) in Zones 2-4
e. Create a WNS educational plan and materials for HSB Cave

Methods at Horseshoe Bay Cave:

a. Unauthorized access to HSB Cave is not allowed by Door County and access is restricted by the presence of a bat-friendly cave gate at the cave (drip-line) entrance. Access policies and procedures are outlined in the *Management Plan for HSB Cave* document.
b. Due to varying levels of risk from different user-groups, i.e., recreational cavers, Door County staff, general cave visitors, researchers, etc. each will receive different levels of decontamination protocols. The Department can provide these protocols in a simple and easy to follow checklist for each user-group (ex. visitor screening flow-charts for the general public). Additionally, the Department can provide decontamination protocol training and visitor screening and education training to make the process as user-friendly as possible for County staff and volunteers.
c. Education and visitor screening will be used to inform visitors of the requirement that all clothing, footwear, and gear worn in any other cave may not be worn or carried in or near HSB Cave Zone 1.
d. Clothing and equipment dedicated for use at HSB Cave and only HSB Cave, to the exclusion of all other clothing and equipment (with the exception of equipment exempted from state WNS law) shall be used in HSB Cave Zones 2-4.
e. Education and awareness for the general public regarding WNS is an important component of this management action. With the opportunity to reach citizens that are interested in caves, it is worthwhile to invest in a WNS education plan that fits with the overall goals of Door County's unique cave access/education program.

Benefits to the Department and Door County:

a. An opportunity to utilize and test multiple actions used to diminish the likelihood of a highly visited site from becoming a new epicenter of WNS transmission to bats.
b. Public recognition from the WI DNR to the Door County Parks Department for joining the state in helping to prevent the spread of a devastating wildlife disease – white-nose Syndrome (WNS).
c. Door County will have the opportunity to inform visitors that they are concerned about the state bat population and participating in an effort to help reduce the negative effects of WNS.
d. Efforts to reduce these negative effects may someday provide refuge for a remnant population of Wisconsin bats.

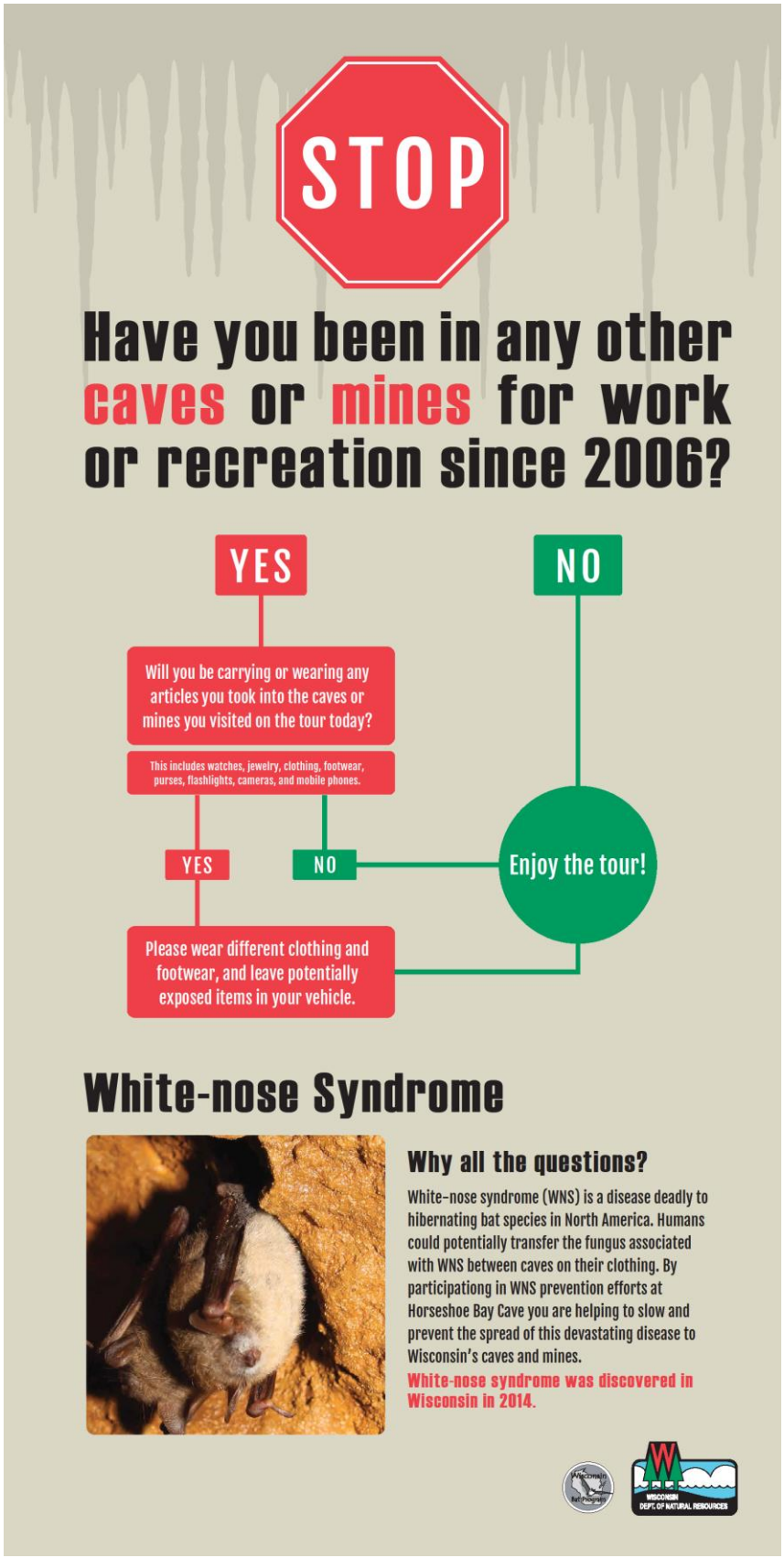
C. WNS Prevention/Control Supplemental Materials

Those things you wore caving
in some other state—
I know they're your favorites but
listen, just wait:
Those old shoes, pants, or sweatshirt
that you want to save
to get down and dirty
(or walk ☺) in OUR cave—
They may carry fungal spores
that are sooooo BAD for bats,
we must ask you a favor:
the favor is that…

…You do not wear or bring anything into Ledge View's caves that was already worn or carried into a cave in states outside of Wisconsin. Even if it has been washed. This includes caves in the states listed above. It includes jewelry and cameras. With any luck, and with your help, Ledge View's caves will remain free of the fungus that causes WNS.

For more information, visit www.wiatri.net/inventory/bats or www.nwhc.usgs.gov/disease_information/white-nose_syndrome/.

Example of a WNS educational flyer sent to schools/teachers prior to field trips to Ledge View Nature Center



Visitor screening flow-chart designed for the general public visiting HSB cave Zones 1 & 2

APPENDIX 1: GUIDANCE FOR HSB CAVE MANAGEMENT AS A BAT HIBERNACULUM

(Adapted directly from USFWS Interim Guidance for the Northern long-eared bat)

While it is not possible to predict every possible threat to cave bats, the following information includes common actions that could affect hibernating bat species and should be considered during management decision-making and plan updates.

Types of actions that may take of cave bats
The following includes, but is not limited to, the types of projects that *could* cause take of cave bats:

Impacts to cave bats and/or Winter Hibernacula Habitat

• Wearing clothing or footwear or bringing equipment that was used in a WNS-affected state or region into a cave or mine in an unaffected state or region may exacerbate the spread of WNS.

• Impacts to hibernacula openings may restrict bat flight and movement and/or may modify air flow or microclimate, reducing suitability of the hibernaculum for bats or decreasing survivorship. A few degrees change may make a cave unsuitable for some hibernating bats.

• Entering a hibernaculum during the winter. Cave-dwelling bats are vulnerable to human disturbance while hibernating. Bats use up their energy stores when aroused and may not survive the winter or may result in termination of pregnancy.

• Blasting or drilling within ½ mile of caves or mines where bats hibernate during the winter may disturb hibernating bats.

• Impacting water resources that flow into hibernacula during the winter, which may affect the cave climate.

• Clearing trees within 5 miles of caves or mines where bats hibernate, reducing staging/swarming habitat.

• Human ignited fires (e.g., prescribed burning) near caves or mines where bats hibernate and where the smoke may enter the cave, disturbing the bats (during winter).

Impacts to cave bat species and/or Summer Habitat

• The permanent or temporary removal of forested habitat from a variety of actions may adversely affect bats by reducing the amount of habitat available for roosting, foraging, or travel. Additionally, bats may also be directly disturbed or killed if such projects are conducted while they are present.

• Burning, although potentially necessary to maintain habitat, could disturb or kill bats by smoke inhalation or scorching.

• Although many types of timber management, when properly designed, will not impact (or may improve) bat habitat, some types of timber management (e.g. clear-cutting) can reduce the viability of bat populations if key areas of a home range are removed.

• Removal of occupied suitable man-made roosting structures.

• Lethal bat removal from occupied homes/structures.

• Use of pesticides and herbicides in a way that exposes bats (e.g., aerial application at night) or significantly reduces their prey.

• Loss of clean water sources (e.g., fill, degradation of water quality), which could reduce bat drinking sources, foraging habitat and/or prey.

Impacts during Migration

• Wind turbine operation has been documented to kill bats, particularly during the fall migratory period.

Measures to avoid and minimize impacts to cave bats

The following is a list of recommended conservation measures for cave bats adopted from the USFWS Northern Long-Eared Bat Interim Conference & Planning Guidance. Conservation measures are considered any measures that contribute to the conservation of cave bats and include, but are not limited to, avoidance measures, minimization measures, mitigation measures, and proactive measures. The basis for these suggestions come from our knowledge and experience with the Indiana bat, and may change in the future as we learn more about the specific needs of the Northern long-eared bat and other three state-listed cave bat species.

These conservation measures should further be considered as advisory recommendations by the FWS since there are no requirements to avoid or minimize impacts to a proposed species unless it becomes listed. Also, note that application of any of these measures should be based on the anticipated effects of a specific project on cave bats in a specific area; therefore, not all measures will be appropriate for all projects.

The seasonality of cave bat habitat use varies somewhat throughout its range, and thus the time periods associated with conservation measures varies accordingly. These differences are due to local and regional variability in climate, which are known or anticipated to drive cave bat seasonal habitat use. For example, the summer maternity season may be longer in the southerly portions of the species' range versus the northerly portions. When referenced in a conservation measure, please see the table at the end of this appendix for the appropriate time period based on the phenology of Wisconsin's cave bats.

The WDNR and FWS may adjust the seasonal dates or other aspects of these conservation measures based on site-specific and project-specific information.

Conservation Measures for WI Priority 1 bat hibernacula and 5-mile Buffer:

Cave bats may be present in hibernacula during the regional or local hibernation season (see Table 1). They may also be present in larger numbers within a 5-mile radius of hibernacula during spring staging and fall swarming. However, males and non-reproductive females may be closer to hibernacula year-round.

1. Take actions to protect bat hibernacula. Where a known bat hibernaculum is experiencing threats, work with the WDNR, USFWS and other partners to provide the necessary protections (e.g. limit human disturbance, install bat-friendly gates, ensure the use of "clean" clothing and gear).
2. Participate in actions to manage and reduce the impacts of WNS on cave bat species. The WDNR has developed a WNS Implementation & Response Plan to address WNS prevention and management in

Wisconsin. A national plan was prepared by the FWS and other state and federal agencies that details actions needed to investigate and manage white-nose syndrome. Many state and federal agencies, universities and non-governmental organizations are researching this disease in an attempt to control its spread and address its effects.

3. Avoid disturbing/injuring hibernating bats.
    - Avoid entering hibernacula during the hibernation season, unless authorized for survey, research, or other management purposes.
    - Comply with all cave and mine closures, advisories, and regulations.
    - Avoid burning or other sources of smoke within 0.25 mile of known or assumed hibernacula during hibernation season, or coordinate with the WDNR.
    - Activities involving continuing (i.e., longer than 24 hours) noise disturbances greater than 75 decibels measured on the A scale (e.g., loud machinery) should be avoided within a one-mile radius of known or assumed hibernacula.
4. Avoid destruction/alteration (e.g., fill, cause collapse of) of caves/mines that may support hibernating bats.
    - Avoid woody vegetation or spoil (e.g., soil, rock, etc.) disposal within 100 feet of known or assumed hibernacula entrances and associated sinkholes, fissures, or other karst features.
    - When blasting within 0.5 miles of a known or presumed occupied hibernacula entrances and passages, coordinate with the local FWS office to ensure that the blasting will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the hibernacula.
    - When drilling or fracking within 0.5 miles of a known or presumed occupied hibernacula entrances and passages, coordinate with the local FWS office to ensure that the drilling will be conducted in a manner that will not compromise the structural integrity or alter the karst hydrology of the hibernacula Since fracking can affect lateral geology for much greater distances, a wider buffer may be necessary to protect hibernacula from this activity.
    - Avoid modifying cave or mine entrances that may support hibernating bats. If there are safety concerns or concerns about bats (e.g., disturbance, vandalism) at a site, install only “bat friendly” cave/mine gates. Consult the FWS office in your state for more information on “bat friendly” cave/mine gates.
5. Avoid/minimize alterations of clean drinking water and foraging areas.
    - Protect potential recharge areas of cave streams and other karst features that are hydrologically connected to known or assumed hibernacula.
    - Set back equipment servicing and maintenance areas at least 300 feet away from streambeds, sinkholes, fissures, or areas draining into sinkholes, fissures, or other karst or mine features.
    - Follow available standards on spill prevention, containment, and control.
    - Restrict use of herbicides for vegetation management near known or assumed cave bat hibernacula to those specifically approved for use in karst (e.g., sinkholes) and water (e.g., streams, ponds, lakes, wetlands).
    - Implement strict adherence to sediment and erosion control measures, ensure restoration of pre-existing topographic contours after any ground disturbance, and restore native vegetation (where possible).

6. Avoid disturbing/killing/injuring NLEBs during spring staging/fall swarming.
    - Avoid clearing of suitable spring staging and fall swarming habitat within a 5-mile radius of known or assumed cave bat hibernacula during the staging and swarming seasons.
    - Activities involving continuing (i.e., longer than 24 hours) noise disturbances greater than 75 decibels measured on the A scale (e.g., loud machinery) within a five-mile radius of known or assumed cave bat hibernacula should be avoided during the spring staging and fall swarming seasons.
    - During spring staging and fall swarming, use tanks to store waste fluids to ensure no loss of bats by entrapment in waste pits within 5 miles of known or presumed hibernacula or assumed cave bat hibernacula.
    - Avoid prescribed burning or other sources of smoke in known or assumed cave bat habitat during the swarming/staging or hibernation season, or coordinate with the local FWS office.
    - Operate wind turbines during periods (e.g., months, hours, wind speeds) when cave bat activity is unlikely.
7. Avoid or minimize the spread of white-nose syndrome (WNS).
    - If you must enter a cave or mine that could harbor hibernating bats, and it does not have a cave and mine closure policy, follow approved WNS decontamination protocols (see whitenosesyndrome.org/topics/decontamination). Under no circumstances should clothing, footwear, or equipment that was used in a WNS-affected state or region be used in unaffected states or regions.
8. Maintain spring staging/fall swarming forested habitat within a 5-mile radius of known or assumed cave bat hibernacula.
    - Retain snags, dead/dying trees, and trees with exfoliating (loose) bark ≥3-inch diameter at breast height (dbh) in areas ≤ one mile from water.
    - Minimize impacts to all forest patches.
    - Maintain forest patches and forested connections (e.g., hedgerows, riparian corridors) between patches.
    - Maintain natural vegetation between forest patches/connections and developed areas.

<u>Conservation Measures for cave bat in Known or Potential Summer Habitat</u>

Cave bats may be present in suitable summer habitat during the regional or local summer season (see Table 1). See the main guidance document for a description of suitable cave bat summer habitat.

9. Determine where cave bats occur in the summer.
    - Coordinate with partners to gather and evaluate cave bat location information.
    - Review both positive and negative data (e.g., acoustic transect surveys).
    - For wind facilities, review project pre-construction surveys and post-construction fatality reports for detection of cave bats.
    - We recommend that large landholders (e.g., U.S. Forest Service, Department of Defense, National Wildlife Refuges, state natural resource agencies) perform baseline bat surveys.
10. Take actions to protect cave bats and their habitat within known cave bat home ranges.

11. Avoid killing or injuring cave bats during tree clearing activities.
    - Do not clear maternity colony summer habitat during the summer maternity season to avoid direct effects to females (pregnant, lactating, and post-lactating) and juveniles (non-volant and volant).
12. Minimize other direct effects to cave bats.
    - Avoid clearing of summer habitat during the time of year when females are pregnant or the pups are non-volant (consult the FWS office for these times).
    - Minimize use of pesticides (e.g., rodenticides, sticky traps) in and around structures with roosting bats.
    - During prescribed burns, where the proposed perimeter fire line is constructed by hand, construct it at least two tree-lengths away from any known cave bat habitat, or potential roost trees that have been identified. If such trees are adjacent to a fixed part of the fire line such as the road, a trail, or the river, they will have fire line constructed around the bases, so long as their remaining in place does not jeopardize firefighter safety.
    - Whenever possible, conduct prescribed burns outside of the summer maternity season. Burns conducted during the summer maternity season should be low/moderate intensity to minimize direct impacts to cave bat.
    - Fire-effects monitoring should be used before, during, and after the burns to ensure that burning conditions and effects are within the desired ranges.
    - Use tanks to store waste fluids to ensure no loss of bats by entrapment in waste pits.
    - Avoid conducting construction activities after sunset in known or suitable summer habitat to avoid harassment of foraging NLEBs.
    - Operate wind turbines during periods (e.g., months, hours, wind speeds) when cave bat activity is unlikely.
    - Avoid/minimize altering clean drinking water and foraging areas.
    - Minimize use of herbicides and pesticides. If necessary, spot treatment is preferred over aerial application.
    - Minimize use of chemicals (e.g., colorants) in/around storm water detention basins.
    - Minimize potential lighting impacts (e.g., reduce the number of lights, use motion sensors, use shields/full cut-off lens, angle lights downward and away from forest).
    - Contaminants, including but not limited to oils and solvents, should be strictly controlled so the quality, quantity, and timing of prey resources are not affected.
    - Implement sediment and erosion control measures, ensure restoration of pre-existing topographic contours after any ground disturbance, and restore native vegetation (where possible).
    - Site equipment servicing and maintenance areas at least 300 feet away from waterbodies (e.g., wetlands, streams). Follow available standards on spill prevention, containment, and control.
    - Avoid filling, channelizing, or degrading streams, wetlands, and other watering areas.
13. Maintain summer maternity habitat.
    - Retain and avoid impacting potential roost trees, which includes live or dead trees and snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, or cavities. Do not remove trees surrounding potential roosts to maintain the microclimate.
    - Where possible and not a safety hazard, leave dead or dying trees standing.
    - Avoid reducing the suitability of forest patches with known cave bat use.

- Maintain or improve forest patches and forested connections (e.g., hedgerows, riparian corridors) between patches.
- Clearly demarcate trees to be protected vs. cut to help ensure that contractors do not accidentally remove more trees than anticipated.
- Avoid/minimize tree clearing that fragments large forested areas or tree lined corridors. For example, route linear features along the edge of a woodlot instead of through the middle of it; use horizontal directional drilling for pipeline crossings of wooded stream corridors and upland tree lines.

14. Conduct humane exclusion of cave bats in structures.
    - Minimize use of pesticides (e.g., rodenticides, sticky traps) in and around structures with roosting bats.
    - If bats (of any species) are using structures (e.g., barns or other out-buildings) as roosts, and these structures are proposed for removal, removal should be performed outside of the summer maternity season, unless there are human health or safety concerns associated with the structure. Consult a nuisance wildlife specialist for humane exclusion techniques[1].
    - Prior to the initiation of any construction activities on bridges, including the removal of any bridge structures, we recommend the underside of each bridge be carefully examined for the presence of bats. If any bats are found roosting in the bridge, contact your state FWS office.

Conservation Measures for Cave Bats During Migration

15. During spring and fall migration, operate wind turbines during periods (e.g., months, hours, wind speeds) when bat activity is unlikely.
16. Use of feathering below a cut-in speed of 6.9 m/s at night during migratory seasons has been used to avoid mortality of the Indiana bat. When bats are potentially exposed to wind turbines, we suggest that this cut-in speed be used to avoid mortality of migrating bats.

Table 1.

State	Hibernation season	Spring staging season	Summer maternity season	Fall swarm/mating season
Wisconsin	Oct 1-May 15	Apr 1-May 15	Apr 1-Sep 30	Aug 15-Oct 15

APPENDIX 2: GUIDANCE FOR NON-FEDERAL LANDOWNERS/PROJECT PROPONANTS DURING PROPOSED FEDERAL LISTING OF THE NORTHERN LONG-EARED BAT

Background

The Northern long-eared bat (*Myotis septentrionalis*) (cave bat) was proposed for federal listing under the Endangered Species Act (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) on October 2, 2013, and a final listing decision is expected within one year. For species that have been proposed for listing, the U.S. Fish and Wildlife Service (FWS) has determined that listing as either threatened or endangered is warranted. Cave bat populations have declined by as much as 99% in the Northeast U.S., primarily due to the disease white-nose syndrome (WNS). WNS has (and continues to) spread rapidly from the Northeast to the Midwest and the Southeast. The degree of mortality attributed to WNS in the Midwest and Southeast is currently unknown.

The cave bat has been found in the United States from Maine to North Carolina on the Atlantic Coast, extending southward to parts of southern states from Georgia to Louisiana, westward to eastern Oklahoma and north through the Dakotas, even reaching into eastern Montana and Wyoming. In Canada it is found from the Atlantic Coast westward to the southern Yukon Territory and eastern British Columbia.

During the summer, NLEBs roost singly or in colonies in a wide variety of forested habitats, in cavities and crevices or underneath bark of both live and dead trees of all sizes. NLEBs have also been occasionally documented roosting in man-made structures (i.e., buildings, barns, bridges, etc.) during the summer. They forage for insects in upland and lowland woodlots and tree lined corridors. During the winter, NLEBs predominately hibernate in caves and abandoned mines.

Legal Protection

While the ESA prohibits take1 of fish and wildlife species *listed* as endangered or threatened, *proposed* species are not afforded this protection. However, upon publishing of a final listing rule, the ESA section 9 take prohibition becomes effective 30 days later. The take prohibition for listed species applies to all individuals, companies, and organizations. The FWS anticipates that the final listing rule, if warranted, will be published by early October 2014. The FWS encourages all non-federal landowners and project proponents to implement measures to avoid and minimize impacts to cave bat, whether proposed or listed. For projects that will be ongoing after the final listing decision, and that could cause take of cave bat, we advise coordinating with the FWS promptly. Early coordination will help to ensure that potential delays due to listing are avoided as much as possible.

1 Section 3 of the ESA defines “Take” as, “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.”

Coordination with the FWS

The FWS is interested in working with non-federal project proponents and land managers to determine what measures are appropriate to avoid and minimize take of the cave bat both before and after listing. Please contact the FWS Field Office (FO) in your state with questions. Contact information for each state office is available at: www.fws.gov/offices/index.html.

Over the short-term, we recommend that you review the list of the types of projects that may take cave bats and review the list of conservation measures to determine measures that could be applied to avoid and minimize take. Further, you may coordinate with your local FWS FO regarding the specific project type and location to determine the most appropriate conservation measures for your situation. At this point, we recommend focusing your discussions with the FWS on those actions that will be ongoing after the final listing decision and that may require authorization for take.

Otherwise lawful non-federal activities that are likely to result in take may be permitted under section 10(a)(1)(B) of the ESA. Pursuant to this provision, the project proponent typically develops a Habitat Conservation Plan (HCP) which describes the impact of the taking, the avoidance, minimization, and mitigation measures that will be implemented, and whether the residual impacts will jeopardize the species. Upon receipt of an adequate HCP, the FWS issues an Incidental Take Permit (ITP) authorizing a limited amount of incidental take. Close coordination with the FWS is necessary in developing the HCP and associated documents. In order to maintain compliance with Section 9 of the ESA, no take of listed species may occur until an ITP is issued. If your project will cause take, it will be necessary to implement avoidance measures upon listing and when an ITP is issued. More information about HCPs is available at http://www.fws.gov/endangered/what-we-do/hcp-overview.html.

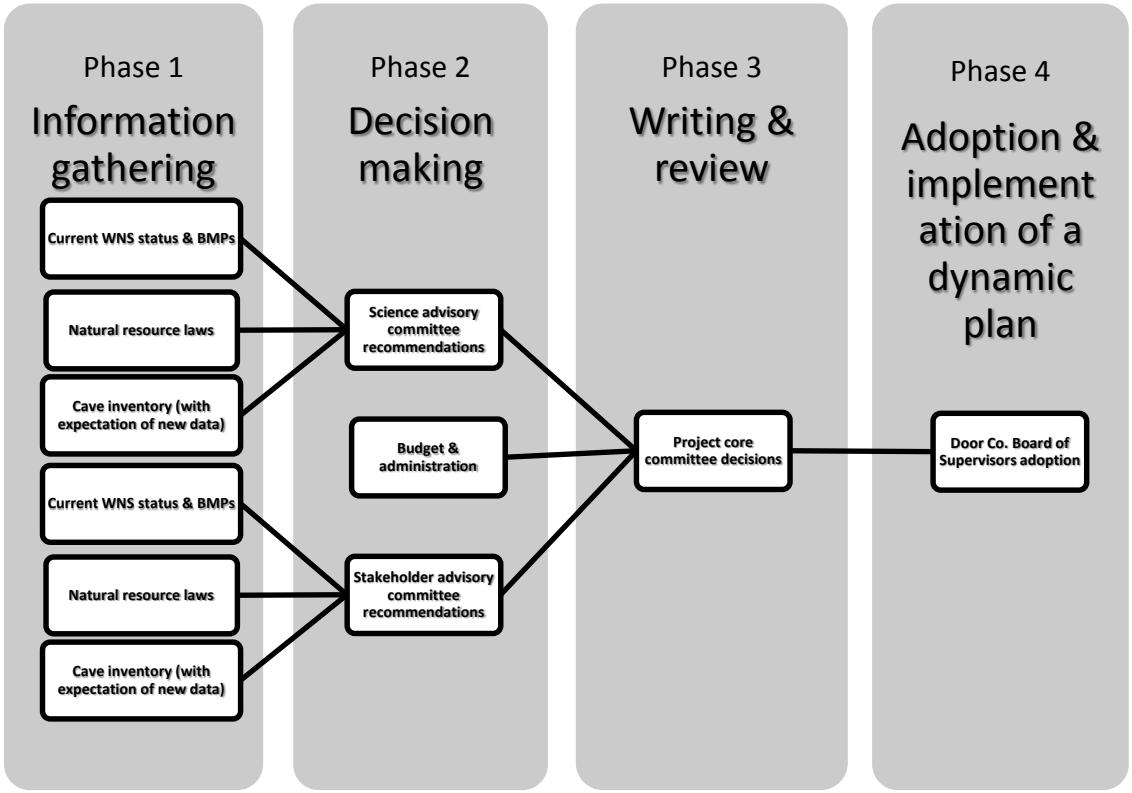
APPENDIX 3: CITATIONS

Frick W.F., J.F. Pollock, A.C. Hicks, K.E. Langwig, D.S. Reynolds, G.G. Turner, C.M. Butchkoski, and T.H. Kunz. 2010. An Emerging Disease Causes Regional Population Collapse of a Common North American Bat Species. Science 329:679-682.

Pinney, George K., Door County Parks & Open Space 2011-2015
http://map.co.door.wi.us/parks/DC%20Parks%20&%20Open%20Space%20Plan%202011-2015.pdf

APPENDIX 4: SUMMARY OF THE PUBLIC INVOLVEMENT PROCESS

A. Planning Process



B. Advisory groups

11 Science Advisory Group representatives:

1. Illinois Natural History Survey Cave Invertebrate Biologist
2. WDNR Conservation Biologist
3. WDNR Cave & Mine Specialist
4. UW-Green Bay Geologist- retired
5. UW-Green Bay Geologist
6. UW-La Crosse Archaeologist- retired
7. UW-Oshkosh Hydrogeologist
8. UW-Platteville Bat biologist
9. Door County Conservationist
10. UW- Madison Molecular & Environmental Toxicology Center
11. USFWS- Green Bay Office

9 Stakeholder Group representatives:

1. Horseshoe Bay Golf Club
2. Caver- WSS
3. Caver- WSS
4. Town of Egg Harbor

5. Friends of Door County Parks System
6. Door County Economic Development Corp
7. The Nature Conservancy
8. Door County Visitor Bureau
9. Southern Door School Naturalist/Cave Manager

C. Methods of public and advisory group contact

Advisory group members were invited to participate via letter with a follow-up phone call or e-mail. Face-to-face advisory meetings and field visits were conducted. Advisory group members communicated with the Core Committee via e-mail, telephone, or face-to-face interviews. Formal and informal presentations were given to both advisory groups and the general public in and around Door County. The print and television media contacted both advisory group members, Door, County, and the WDNR to report on the project.

D. Process and meetings for HSB Cave Science and Stakeholder Advisory Groups

- The Bureau of Natural Heritage Conservation and Door County will work to ensure that science and stakeholder advisory groups possess a balanced mix of knowledge, experience, and perspectives needed to address the issue. Science advisory groups are to be composed of professionals highly qualified in the subject area and should provide technical expertise both to the decision-makers and to stakeholders. Questions regarding how to manage natural resources can only be addressed by reconciling scientific information with the values and expectations of stakeholders. Stakeholder advisory groups are composed of individuals—often representing organizations or agencies—with an interest in the issue and/or may affect or be affected by the issue. Their advice is integral to making sound resource management decisions.
- One or more WDNR staff person and one or more County staff person will participate on all stakeholder and science advisory groups. A County staff person will lead each stakeholder advisory group. Science advisory groups will most often be led by a WDNR staff person, but may be led by a member from another organization or institution. The WDNR staff on each advisory group will liaise with the Bureau of Natural Heritage Conservation and WDNR decision-making/oversight team.
- Meetings will follow standard procedural rules of order, with the primary goals being to insure that 1) participants are informed ahead of time of topics to be addressed, 2) all participants are treated fairly and respectfully and given ample opportunity to provide input, and 3) meetings and discussions move forward on schedule. If procedural questions arise, the group may reference Robert's Rules of Order and/or request guidance from UW-Extension facilitation staff.
- The advisory groups will meet on an as-needed basis determined by the project oversight committee. A tentative timeline and schedule of meetings will be established at the outset of the process to inform prospective advisory group members of the approximate time commitment anticipated.
- Observers: Members of the public may attend and listen to meetings of stakeholder and science advisory groups as observers but may not provide comment at the meeting. Names of observers may be requested.
- Guests: Advisory groups may at times wish or need to invite guests to provide information or expertise to the group. Guests will not participate in any decision making or voting that may occur.

- Decision making within the group, whether it is by consensus, voting, or other means, may only be initiated by the group leader.

- Recommendations from the Science and Stakeholder group will be developed through substantial consensus and separate minority positions may be forwarded. Recommendations will be recorded and consolidated by a group facilitator.
- Conflict resolution: If questions or conflicts arise (including issues of bias or conflicts of interest), individuals or the group as a whole may request assistance from the oversight team, Door County, or WDNR in addressing and resolving the issue. Prompt communication is encouraged between participants and the project oversight committee to answer questions and resolve minor issues in the interest of moving forward and building shared understanding between all parties. If the issue cannot be resolved at this level, an oversight committee member may bring the issue to the attention of the Bureau of Natural Heritage Inventory, which will take the lead in resolving the issue. The resolution will be communicated to the group and to other parties as warranted.

E. Schedule of public contact

Date	Method	Purpose	Participants	Attendance
06/28/2012	public presentation	education	Newport Beach State Park- public	12
06/30/2012	public presentation	education	Potawatomi State Park- public	75
07/15/2012	field site visit	geologic inventory	Science advisory group	6
08/09/2012	field site visit	gate installation	DNR & County staff	8
08/10/2012	informal presentation	education	Peninsula State Park- public	40
08/10/2012	field site visit	archaeological inventory	Science advisory group	5
02/14/2013	public presentation	education	Southern Door Elementary School- students	450
03/08/2013	meeting	public comment	Stakeholder committee	18
03/22/2013	meeting	science comment	Science advisory group	10
04/03/2013	meeting	public comment	Stakeholder committee	13
05/06/2013	meeting	public comment	Stakeholder committee	12
7/22-26/2013	field site visit	invertebrate inventory	Science advisory group	4
08/13/2013	meeting	public comment	Stakeholder committee	12
08/28/2013	field site visit	public comment	Stakeholder committee	12
fall/2013	6 media contacts	informational	DNR & County staff, Stakeholders	wide regional audience
11/19/2013	public presentation	education	Southern Door Elementary & Middle School- students	500
4/17/2014	Meeting	Science comment	Science advisory group	8
4/18/2014	Meeting	Stakeholder comment	Stakeholder committee	9

F. Summary of public comments throughout the planning process

- The cave should be studied as much as possible
- The entire cave system should be considered (including areas outside and above the cave)
- Educational themes could include groundwater, sustainability, biology, etc.
- Cave should be available for educational and research trips, paying particular attention to building partnerships with local schools
- Experienced volunteers should be involved in education and research assistance
- Other cave education curricula should be examined to create a baseline of options for cave education
- Cave sediment should be removed and walkways and lights added to the cave for public tours up to the Wall Room
- Cave should be left in its natural state
- Cave should have a business plan
- A parking lot and permanent kiosk or visitor center should be constructed in the field near the cave

1. HSB Cave Science Advisory Group- Purpose

Directives for this group were to become familiar with the overall goals of Door County for the future use of this site, WI WNS Implementation & Response Strategy, participate either in person at meetings or through conference calls, and be prepared to discuss general recommendations for management of the cave and options should hibernacula surveillance detect either the fungus *Pseudogymnoascus destructans* or manifestation of the disease (WNS).

As drafts of the management plan are developed to participate in further meetings where a group discussion will determine a group recommendation. After the initial plan is complete the Advisory Group members may be invited to remain part of a long-term cave advisory group (as it is developed and outlined in the management planning process). Below is a description outlining the role and responsibilities of members in the group.

2. Science Advisory Group- Description

The group will be composed of experts and/or professionals highly qualified in terms of knowledge and training and with an intellectual interest in the scientific and technical questions to be addressed. The Science Advisory Group may include additional individuals brought in to provide expertise either on a temporary or occasional basis. Committee members serving on the Science Advisory Group cannot serve on the Stakeholder Advisory Group concurrently.

The role of the Science Advisory Group is to provide scientific and technical expertise to the overall process, focusing on the biological, ecological, geological, hydrogeological, and cultural aspects of the cave. The group may also provide scientific and technical expertise in environmental, economic, recreational, and other aspects regarding cave management. The group may be asked to make recommendations related to scientific aspects of cave management (e.g., prioritized list of research needs, adaptive management approaches/scenario(s) expected to most effectively manage WNS if/when it arrives in the cave). Decision making and goal setting regarding management lie outside of the realm of the science advisory group, but the group's information, recommendations, and views regarding consequences of management goals and actions may lead to revised goals and actions.

Examples include:

- Identify and evaluate underlying assumptions
- Identify and evaluate sources of scientific uncertainty
- Assess how proposed and alternative management goals, policies, and strategies may impact the cave in both the short and long term
- Identify critical research needs
- Review research proposals and findings related to HSB Cave
- Identify other pertinent information or questions that are relevant to the topic at hand

3. HSB Cave Stakeholder Advisory Group- Purpose

Directives for this group were to become familiar with the overall goals of Door County for the future use of this site, WI Bat WNS Implementation & Response Strategy, participate either in person or conference call at meetings, and be prepared to discuss general recommendations for management of the cave and options should our hibernacula surveillance detect either the fungus *Pseudogymnoascus destructans* or manifestation of the disease (WNS).

As drafts of the management plan are developed to participate in further meetings where a group discussion will determine a group recommendation. After the initial plan is complete the Advisory Group members may be invited to remain part of a long-term cave advisory group (as it is developed and outlined in the management planning process). Below is a description outlining the role and responsibilities of members in the group.

4. Stakeholder Advisory Group- Description

Stakeholder input is integral to helping make sound resource management decisions. The WDNR and Door County are committed to working in partnership with stakeholders, regularly seeking and taking into account their knowledge, experience and perspectives. A designated Stakeholder Advisory Group will be created for systematic input regarding cave management.

The role of the Stakeholder Advisory Group is to articulate stakeholder needs and respond to proposed management goals and policy including written documents for the Horseshoe Bay Cave Science Advisory Group. Input is anticipated to focus on non-technical social, cultural, ethical and economic aspects of the issue, as well as conservation and other relevant areas.

This site-specific Stakeholder Advisory Group will be composed of individuals (in many cases representing organizations, agencies, local units of government, etc.) with an interest in HSB Cave and/or who may affect or be affected by cave and bat WNS management. The Bureau of Natural Heritage Conservation and Door County will select members, ensuring that the composition of the group is balanced, adequate to address the issue at hand, and reflective of a diversity of perspectives and areas of knowledge and expertise. The Bureau of Natural Heritage Conservation, as a resource manager, is a stakeholder in all decisions and will participate in the stakeholder advisory group.

Participants in stakeholder advisory groups are expected to be willing and able to represent the interests of other similar individuals, businesses, organizations, communities, etc., as applicable. Conflicts of interest, financial and otherwise, are in some ways unavoidable in stakeholder advisory groups – stakeholders by definition may affect and be affected by the decision at hand. Stakeholders will be required to promptly and

publicly disclose to the group and to the Bureau of Natural Heritage Conservation potential conflicts of interest at the first meeting. If conflicts of interest exist or arise that are detrimental to the functioning of the group, the individual may be precluded from (or asked to discontinue) participation in the group. Committee members serving on the Stakeholder Advisory Group cannot serve on the Science Advisory Group concurrently.

APPENDIX 5: HORSESHOE BAY CAVE ACCESS

A. HSB CAVE ACCESS WAIVER FORM & WNS PREVENTION AGREEMENT

HORSESHOE BAY CAVE ("HBC") ACCESS

Information (Name, Address, & Phone Numbers) Regarding Person / Group:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Emergency Contacts (Name, Address, Phone Number, & Relationship):

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

The date and purpose of the above persons' or groups' entry of HBC is:_____

_____

_____

_____

_____.

General Guidelines

Each person, as a condition precedent to entering HBC, must read, complete, and date & sign this document.

The County of Door reserves the right to refuse entry to, or to summarily remove person(s) or group(s) from, HBC.

Each person entering HBC must make their own independent judgment as to their physical and/or emotional fitness to access HBC.

Each person entering HBC must be familiar with and follow any and all site specific (safety and other) plans.

Each person or group entering HBC will have an individual on the surface (aka top-cover individual) who knows the intended route of travel in HBC, when the person or group entered, and is expected to return. The top-cover will have contact information for HBC (Door County) staff so that Door County can be notified when the person or group exits *or* in case of an emergency.

Entry gate will be locked when group enters HBC and again upon exiting.

Each person and group must endeavor to minimize impacts, and cause no damage, to HBC or its resources and will be jointly and severally responsible for any damages.

White-Nose Syndrome Decontamination Protocol (per Sec. NR 40.07(8) Wis. Adm. Code) and Wis. DNR approved cleaning protocols (available at http://dnr.wi.gov/org/land/er/bats/), shall be followed.

Disclosure, Waiver, Release, Indemnification, Hold Harmless & Covenant Not to Sue

I am aware that HBC is a wild cave and has no improvements other than a gated entrance. I understand that a visit to any cave, and certainly a wild cave such as HBC, involves certain attendant and inherent risks, including but not limited to:

- Difficult Terrain--A normal trip requires: squeezing through tight constrictions; climbing, skirting and bridging deep pits and crevasses; walking on loose rocks; walking and crawling through mud and water; and at times being fully submersed in water.
- Poor Light Conditions--HBC is totally dark.
- Climate--Persons will be exposed to cold and wet (i.e., hypothermic) conditions. HBC is wet (water and mud) and temperatures are normally below 50 degrees F.
- Rock Falls--Cave floors, walls, and ceilings contain loose rock. Rock falls are a normal and frequent occurrence.
- Complex and Restricted Passages--HBC contains extensive, complex and sometimes restricted passages, some of which are confusing, maze-like, unmarked and may even be unmapped. There is a risk of becoming disoriented, lost, and trapped in HBC.
- Physical and Psychological Stress--Caving subjects individuals to extreme and abnormal stresses. Cavers also tend to experience psychological stresses such as claustrophobia, agoraphobia and acrophobia. Anxiety and panic are not rare occurrences.
- Exposure to Harmful Organisms / Pathogens.
- Gate Failure—Persons could be trapped in the cave due to improper use or mechanical failure of the gate or lock.
- Rescue Difficulty--Cave rescue is difficult, dangerous and expensive. Cost of the rescue may (i.e., very likely will) be borne by the rescued individual and her/his group.
- Other--A trip into HBC will subject a person to other unknown hazards and risks.

The foregoing attempts to list the most commonly encountered hazards and risks, however, it should not be considered as an all-inclusive listing. I acknowledge that there are innumerable ways that I may be physically injured, die, or be harmed emotionally while visiting HBC. Knowing this, I still desire to enter HBC and willingly do so completely at my own risk and responsibility.

I AGREE TO WAIVE, RELEASE, INDEMNIFY, AND HOLD HARMLESS the County of Door and its respective officers, officials, employees, and agents, and/or Horseshoe Bay Golf Club 2006, LLC, its owners, managing director and board, and respective officers, officials, employees, and agents from and against any and all actions, claims, costs, damages, demands, expenses, fees (including attorney's fees), judgments, liabilities, losses, and suits, for any and all liability, claim or cause of action arising out of or related to any loss, damage, injury or death, that in any way arises from or occurs as a result of my access to HBC.

I recognize that I am giving up, among other things, any and all right to sue the County of Door and its respective officers, officials, employees, and agents, and Horseshoe Bay Golf Club 2006, LLC, its owners, managing director and board, and respective officers, officials, employees, and agents for damages, injuries, and losses I may incur.

I further agree that this document shall be construed in accordance with the laws of the State of Wisconsin. Venue for any suit on this document shall rest in Door County, Wisconsin.

In addition, I agree that the provisions of this document shall be interpreted, when possible, to sustain their legality and enforceability as a whole. In the event any provision is held invalid, illegal, or unenforceable by a court of competent jurisdiction, in whole or in part, neither the validity of the remaining part of such provision, nor the validity of any other provision, shall be in any way affected.

I further agree that this document shall bind members of my family such as my spouse, parents or guardians, and my heirs, assigns and personal representative (if any).

This document shall be and continue in full force and effect prior, during, and after access to HBC.

By signing this document, I represent that I have read and understand the terms and conditions set forth herein, that I agree to all terms and conditions set forth herein, and that I sign this document voluntarily.

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

Name: _____

Signature _____ Date: _____

Witness: Name: _____

Signature _____ Date: _____

B. GENERAL ACCESS APPLICATION FORM

Horseshoe Bay Cave, Door County Parks
GENERAL ACCESS CAVE TRIP REQUEST

Permission is requested to enter the following zone(s) of Horseshoe Bay Cave (CIRCLE ONE):

Zone 1 (Cloak Room) Zone 2 (Wall Room) Zone 3 (Dining Room) Zone 4a (Big Room)

Zone 4b (Elephant Room) Zone 4b (Waterfall Room) Zone 4b (beyond the Waterfall)

Purpose of trip (CIRCLE ONE): Education Monitoring Photography Research/Project-related Recreation

Trip Leader (must be a Trustee): _____ Phone #: _____

Group Members (all zones have a 4 person minimum; zones 3 & 4 have a maximum of 6):

1_____
2_____
3_____
4_____
5_____
6_____
7_____
8_____
9_____
10_____
11_____
12_____

Group title/affiliation (if applicable)_____

Date of Trip: _____Time in: _____Time out (planned): _____

Planned Route & Activities (educational trips require a specific lesson plan- ATTACH):

_____
_____
_____
_____
_____

_____

_____

Surface Watch: _____ Phone #: _____

Actual Time in: _____ Time out: _____

Note any changes to the proposed trip plan:_____

TRIP SUMMARY

(In the trip summary please include information such as impacts or changes noted, accidents, unusual speleothems and features, the amount of cave inventoried, work that was done, etc...)

_____
_____
_____
_____
_____
_____
_____
_____
_____

C. GENERAL ACCESS PERMIT

Permit will include

Date of trip:

Trip leader (Trustee):

Purpose of trip (insert original requested purpose):

Trip participants (insert list of requested participants):

Group affiliation:

Key pick up/drop off details:

Trip summary submission deadline:

Top-cover name & phone number:

Emergency information: In case of incident, rescue, or emergency contact …

Signature of Door County Parks Director:

D. RESEARCH/SPECIAL ACTIVITY PROPOSALS

RESEARCH, SURVEY, & SPECIAL ACTIVITIES IN HSB CAVE

HSB Cave presents the County with a unique opportunity to understand and protect a delicate, diverse cave. All entries into HSB Cave may cause seen or unseen damage to this nearly pristine natural heritage feature. Yet understanding the processes that tie the cave to the surface and which function within the cave is essential for proper management. Thus, research-project proposals must demonstrate why and how the knowledge gained from the specific project will advance the goal of cave protection and preservation. This has led to the following conditions and standards:

a. Research and special activities proposed in HSB Cave must further the County or State's knowledge of the cave in a way which facilitates, helps to delineate, and provides for the informed management of the cave. Thus, special activity proposals must demonstrate why and how the knowledge gained from the specific project will advance the goal of cave protection and preservation. This stringent requirement for permission to conduct special activities in the cave is unique, and reflects the County's perspective on the fragility of the cave and the rareness of this management opportunity.

a. Because HSB Cave is a Priority 1 hibernaculum in the WI NHI database projects in and near the cave (within 100 feet of the cave entrance) that create ground disturbance are subject to review by the Bureau of Natural Heritage Conservation.

b. Permit applicants should consider taking voluntary steps to conserve Species of Special Concern through the identification of conservation measures they can choose to incorporate into their projects. Project partners are often willing to protect these important resources if biologists explain their importance and identify practical, economically-feasible protection measures.

c. Studies must be scientifically valid. Proposals will be reviewed for scientific merit by Door County and may be submitted for review by partnering agencies or institutions.

d. Project personnel will obey all cave rules as delineated in this Plan and restrict their activities to those outlined in the approved project permit.

e. All proposed cave research and special activities must be conducted in compliance with the WI Endangered Species Law. Endangered/threatened species permits are required for research that involves the handling or take of listed species and are issued by the SDNR (Natural Heritage Conservation) to representatives of academic institutions or other qualified researchers only for the purpose of documenting research activities.

f. Specimen collecting and destructive sampling will only be allowed when it is clearly demonstrated that such an action will lead to improved management of the cave. All specimens and samples are to be retained by (often) a public institution in Wisconsin, but retention of specimens can be specified in each E/T or collectors permit.

PROPOSED SPECIAL ACTIVITY REVIEW

All proposed special activities shall be submitted to the WDNR's Endangered Resources Review program prior to acceptance.

An endangered resources review is an evaluation of a proposed project for potential impacts to endangered resources, defined as state- and federally-listed species, Special Concern species, rare and high-quality natural communities, natural features, and State Natural Areas. An endangered resources review should be conducted for all ground or water disturbing activities on private or public property to ensure compliance with Wisconsin's Endangered Species Law. An endangered resources review is also required for all actions that the Department conducts, funds or approves. If a violation occurs, the person responsible for the taking is the liable party. Generally this is the landowner or project partner.

The review is a screening of the proposed project area for potential impacts to endangered resources. The review program provides a formal letter to the requestor that provides information from Wisconsin's Natural Heritage Inventory (NHI) database and other sources. This letter includes information on rare plants and animals - including state and federally-listed species - high quality natural communities and other endangered resources

that may be impacted. The ER Review will also include recommendations to help projects comply with Wisconsin's Endangered Species Law (s. 29.604, Wis. Stats [exit DNR]), the Federal Endangered Species Act [exit DNR] and other laws and regulations protecting endangered resources.

A review of the proposed project should be requested well in advance of when the project is scheduled to begin - e.g., one year - so that parties can identify and plan for any seasonal limitations that may be imposed on the project and allow time for any field surveys that may need to be conducted during a specific time of year - for example, during the breeding or growing season. Inclusion of an ER Review with application materials for other department permits may facilitate the permit review process.

Reviews may be requested through the WDNR at http://dnr.wi.gov/topic/ERReview/Review.html

a. Reviewing projects for endangered resources concerns is a **science-based process** that relies on the best available scientific information about rare species and natural communities, supplemented by the professional judgment of the staff conducting and providing consultation for the review
b. The WDNR takes a **precautionary approach** to evaluating proposed projects for potential impacts to endangered resources. A precautionary approach means **taking action to protect the environment if a reasonable threat of serious or irreversible harm exists based upon the best available science, even if abundant scientific evidence is not available to assess the exact nature and extent of risk.** This means several key things:
    1) There is an inherent (and legal) need to anticipate harm before it occurs.
    2) There is a need to act cautiously to prevent such harm, even in the absence of scientific certainty.
    3) All possible means of achieving the project goal need to be considered.
    4) Proponents of an activity should bear the responsibility of proving that the activity will not cause undue harm. This responsibility may include a commitment to monitor the impacts of the actions, inform the Department when a potential impact is found, and act upon that knowledge. This approach is particularly relevant to endangered resources, given the lack of data available for many rare species and their vulnerability to many different types of disturbance.
c. Endangered resources reviews consider not only the direct effect of an action on endangered resources, but also the indirect and cumulative effects. Consideration of indirect and cumulative effects is an important part of ecosystem management that may be required in some cases. The extent to which indirect and cumulative effects need to be documented and addressed in addition to direct effects depends on a variety of factors, including the endangered resources present (e.g., consideration of all three types of effects is required for federally-listed species), the applicable laws (e.g., WI Endangered Species Law, Federal ESA, NEPA, WEPA), and the nature of the project. Importantly, the definitions of indirect and cumulative effects differ for each law. Generally speaking, when federal species are involved and/or when a review under NEPA and/or WEPA is required, a broader perspective will be needed.
d. Absence of evidence is not evidence of absence. Inventories are not all inclusive; systematic surveys of most areas of HSB Cave have not been conducted. Occurrences are only in the inventory if a site was surveyed for that species or group during the appropriate season or an observation was made, reported and verified. Thus, the absence of records for a particular feature or animal does not mean that no rare species or resources at the site. In addition, a record of occurrence for one species does not imply that surveys were conducted for other species. It is for this reason that cave inventory results should be

supplemented with other endangered resources information and data, if available, when conducting special activity reviews.

e. The steps outlined here are designed to help projects avoid take of listed species and thus comply with endangered species laws. However, the goal of the Bureau of Natural Heritage Conservation is higher: to conserve Wisconsin's rare species and high-quality natural communities for present and future generations.

SURVEY (SKETCH) STANDARDS

The following checklist will help surveyors adhere to acceptable survey standards for HSB Cave.

Survey sheets:

- Use pre-printed survey sheets as they were designed
- Fill out the entire title page (all blanks completed)

Data pages:

- Data is complete, legible, and straight forward
- L, R, U, D data been recorded for each station
- All pages have been numbered (1 of 3, 2 of 3, 3 of 3)
- Backsights are recorded on all shots with an inclination >30 degrees
- Lengths are carried out to two decimal points and azimuth and inclinations to one (e.g. 4.35 feet, 25.0 degrees, and –3.5 degrees)
- All foresights & backsights agree within 2 degrees for azimuth & inclination

Sketch:

- Cave zone and date are filled out for each page
- Passage is drawn to scale and survey lines drawn in at the approximate orientation (within 10 degrees)
- Stations are clearly labeled (outside of walls)
- Sketch is legible
- Standard map symbols are used
- Non-standard symbols are defined in a legend
- Is floor and ceiling detail adequate
- Sketch contains sufficient cross sections
- The nature of all leads is indicated (2'x4', dig, too tight, etc.)
- Sufficient ceiling and ledge heights have been included

HSB CAVE RESEARCH & SPECIAL ACTIVITY PRIORITIES

Through this request, Door County Parks will allow research and special activities in HSB Cave that address priorities identified by the core cave planning committee. Because the number of trips allowed into the cave are limited, proposals addressing priorities 1 and 2 (Tier 1) will receive approval

preference, while projects addressing priority 3, the open category, will be also be considered (see sections on proposal requirements and proposal review).

The questions that follow each priority listed below are provided as examples and do not represent a comprehensive list:

Tier 1:

1. **Priority 1: Understanding the nature and dynamics of cave biotic resources in and around the HSB Cave system.**

   - Understanding presence of and impacts to rare species in HSB Cave.

   - Factors influencing survival of individuals and overall population dynamics of rare species in HSB Cave.

2. **Priority 2: Understanding the nature and dynamics of cave physical resources in and around the HSB Cave system.**

   - Impacts to physical resources of the HSB Cave system.

Tier 2:

3. **Priority 3: Other important research and projects.** (An open category)

   - Examination of the ecological and economic impacts of human visitation on cave resources.

HSB CAVE RESEARCH & SPECIAL ACTIVITY PROPOSAL REQUIREMENTS

Proposals for HSB Cave Research & Special Projects will be accepted at any time and should be submitted to:

Door County Parks Director
3538 Park Drive
Sturgeon Bay, WI 54235

Project Narrative: A proposal must **not exceed 10 pages** in length, including cover page, project summary, figures and tables, an itemized budget, and supplemental information on principal investigators (PIs) qualifications, matching or existing funds, etc. Proposals submitted with a font size less than 11 pt. will not be accepted.

Proposals will require letters of support/collaboration from all partners (e.g., State and Federal biologists, university partners, private landowners, etc.) whose contributions or cooperation are necessary for successful completion of the proposed project (e.g., commitment to analyze or identify samples on behalf of the Principal Investigator, etc.). Affirmation of support for all partners will also need to be provided on the cover page. Letters of support will not count against the 10 page limit.

Project Summary: A one page summary of the proposed project that outlines objectives, strengths, implications for management, and the total budget (broken down by year, if applicable). The summary must be suitable for public release on the Door County Parks website.

Project Goals and Objectives: State the long-term goal(s) of the project. Objectives are the specific steps to be taken to reach the stated goals. State the objectives of the project, which must be specific, measurable, and realistic (attainable within the project's proposed period of performance). State the anticipated outcomes and/or benefits of the project.

Project Activities, Methods and Timetable: State the proposed project activities, and describe how they relate to the stated project objectives. Include a description of the problem and proposed research to address that problem, including the ways in which it addresses one or more priorities. The proposed project activities narrative must be detailed enough for reviewers to make a clear connection between the proposed activities and the proposed project costs. For projects being conducted within the United States, the narrative must provide enough detail so that reviewers are able to make a preliminary assessment of project compliance with WI Endangered Species law, WNS laws, etc. Provide a detailed description of the method(s) to be used to carry out each activity. Provide a timetable indicating roughly when activities or project milestones are to be accomplished. Include any resulting tables, spreadsheets or flow charts within the body of the proposal narrative (do not include as separate attachments). The timetable should not propose specific dates but instead group activities by month for each month over the entire proposed project period.

To maintain consistency in diagnostic reporting of any WNS research, all PIs must follow established diagnostic protocols accepted by the national WNS Diagnostics Working Group, or demonstrate that the protocols used in the proposed research perform equally well as published standard methods.

Include a statement characterizing the contributions of the proposed research to furthering the goals and objectives for management of HSB Cave.

Stakeholder Coordination/Involvement: As applicable, describe how you/your organization has coordinated with and involved other relevant organizations or individuals in planning the project, and detail if/how they will be involved in conducting project activities, disseminating project results and/or incorporating your results/products into their activities.

Project Monitoring and Evaluation: Detail the monitoring and evaluation plan for the project. Building on the stated project objectives, which must be specific and measurable, identify what you will measure (i.e. quantitative/quantifiable indicators) and how you will measure (i.e. methods, sample size, survey tools). Reference the stated project timetable (i.e. process indicators) and budget information (i.e. input indicators). Identify the products/services to be delivered and how/to whom they will be delivered (i.e. output indictors). Detail the expected direct effect(s) of the project on beneficiaries (i.e. outcome indicators). Include any available questionnaires, surveys, curricula, exams/tests or other assessment tools to be used for project evaluation. Describe the resources and organizational structure available for gathering, analyzing and reporting monitoring and evaluation data. If applicable, describe how project participants and beneficiaries will participate in monitoring and evaluation activities. Describe how findings will be fed back into decision making and project activities throughout the project period.

Description of Organization(s) Undertaking the Project: Provide a brief description of the applicant organization and all cooperating entities and/or individuals. Identify which of the proposed activities each agency, organization, group, or individual is responsible for conducting or managing. Provide complete contact information for individual within your organization that will oversee/manage the project activities on a day-to-day basis. This is the person commonly referred to as the Project Officer or Project Manager. If eligibility for project funding is based in whole or in part on the qualifications of key personnel, provide brief (**1-2 pages**) *curricula vitae* for key personnel, identifying their qualifications to meet the project objectives. ***Do not include Social Security numbers, the names of family members, or any other personal or sensitive information on the curricula vitae!*** Contributed CVs will not count against the 10 page limit.

Research proposals involving state-listed bat species or WNS must identify WDNR or USFWS partners and/or contributions required to conduct field work, collect data, or interpret results. The appropriate USFWS WNS Region 3 Coordinator should be contacted prior to submission of the proposal. If your proposed study involves federally threatened or endangered species, the Green Bay USFWS Field Office should be contacted.

Permitting: All participants must procure all necessary Federal, State, and local permits, and landowner permissions prior to project initiation.

Literature Cited: as appropriate

Additional Requirements:
Expected number of trips into the cave:

Name of all research associates to be present during the project:

Date(s) & times of proposed trips:

Itinerary (describe approximate times & locations for each trip):

Clear goals & objectives for each trip:

List any special equipment to be used:

List any special requirements/needs for project or trips:

Does this project build on previously published research? Describe:

Will results be published?

How will the project be funded?

Attachments:

Letter(s) of support

WDNR NHI Review Letter

E. RESEARCH/SPECIAL ACTIVITY PERMIT FOR HSB CAVE

The attached research/special activity proposal has been approved/modified and approved by Door County and the researcher/special activity lead.

Project personnel will obey all cave rules as delineated in this Plan and restrict their activities to those outlined in the approved project permit.

Signature of PI or Special Activity Lead:

_____ Date_____

(PRINTED NAME & AFFILIATION)

Approved by:

_____ Date_____
Horseshoe Bay Cave Manager, Door Co. Parks & Recreation Department

_____ Date_____
County Conservationist, Door Co. Soil & Water Conservation Department

F. VOLUNTEER TRUSTEE/MONITORING PROGRAM VOLUNTEER INFORMATION

Volunteer Job Description

Door County Parks

Job Title: Volunteer Trustee

Supervisor: Door County Parks Director

Location: Horseshoe Bay Cave, Murphy County Park

Project Duration: Caving trips may be one short trip to Zone 1 or may be part of longer research projects that take people to Zone 4.

Description of Duties: The volunteer will assist the park office by assisting with cave education and baseline data collection. This may include collecting survey or inventory data, or monitoring resources.

Goal/Outcome of Job: Trustee will use the provided survey and inventory sheets to record all data. After each trip, a detailed trip report will be completed by the Trustee.

Knowledge/Skills/Experience Desired:
The volunteer will:

- Have knowledge of basic caving skills, including chimneying, bridging, and climbing.
- Be able to recognize and avoid delicate speleothems.
- Understand and adhere to management policies for HSB Cave.
- Understand and adhere to basic biosecurity protocols for preventing the transmission of WNS or the WNS fungus into or out of HSB Cave
- Have knowledge of group leadership, interpretation, education, and working with families and the public (including passing a background check).
- Have the ability to interpret cave maps and line plots.

Special Requirements:
For all activities in Zone 1 (and near HSB Cave) the Trustee must wear clothing, footwear, and gear that has not been used in any other cave (regardless of whether or not it has been decontaminated).
For any trips beyond Zone 1 the Trustee will need to use gear dedicated for use at HSB Cave (provided by Door County Parks).

Volunteer Job Description

Door County Parks

Job Title: Cave Inventory & Monitoring Volunteer

Supervisor: Door County Parks Director/Soil & Water??

Location: Horseshoe Bay Cave, Murphy County Park

Project Duration: May include trail work near the cave entrance, one short trip into Zone 1, or could be as extensive as a multi-trip, multi-year project.

Description of Duties: The volunteer will assist the parks office by removing lint and dust or may conduct inventory and monitoring activities such as photography, sampling, counting, sketching, or identifying various cave resources.

Goal/Outcome of Job: Volunteer will help restore areas of the cave to a more natural state. Help collect data on cave resources as part of a long-term cave inventory and monitoring program.

Knowledge/Skills/Experience Desired: The volunteer will:

- Have knowledge of basic caving skills, including chimneying, bridging, and climbing.
- Be able to recognize and avoid delicate speleothems.
- Have knowledge of cave restoration techniques
- Have experience with digital photography

- Have knowledge of citizen based monitoring methods used with various projects

Special Requirements: For all activities in Zone 1 (and near HSB Cave) the volunteer must wear clothing, footwear, and gear that has not been used in any other cave (regardless of whether or not it has been decontaminated). For any trips beyond Zone 1 the volunteer will need to use gear dedicated for use at HSB Cave (provided by Door County Parks).

G. VOLUNTEER TRUSTEE/MONITORING PROGRAM VOLUNTEER APPLICATION

Volunteer HSB Cave Trustee/Cave Monitoring Program Volunteer Application

Door County Parks

Proposals for HSB Cave Research & Special Projects will be accepted at any time and should be submitted to: Door County Parks Director, 3538 Park Drive, Sturgeon Bay, WI 54235

Name of applicant_____ **Date**_____

Address_____

Phone_____ **E-mail address**_____

Please attach the following:

1. **A brief explanation of why you would like to become a Trustee/Monitoring Program Volunteer**

2. **A list of (broad) dates & locations of your life experiences that are relevant to the position of Trustee/Monitoring Program Volunteer**

3. **Names of three employer and/or character references and current contact information**

Trustee applicants will work with members of the general public (including families, students, and youth groups) and are subject to a background check.

APPENDIX 6: WDNR WILDLIFE & WNS MANAGEMENT AUTHORITY

The WDNR holds the public trust responsibility for managing wildlife as embodied in State Statute 29.011 Title to wild animals (1) *The legal title to, and the custody and protection of, all wild animals within this state is vested in the state for the purposes of regulating the enjoyment, use, disposition and conservation of those wild animals.*

Among the state laws that apply to the management of wildlife, the following are particularly relevant to the management of HSB Cave as a bat hibernaculum:

b. Chapter NR 1.015(2), Wis. Adm. Code, establishes WDNR responsibility for ensuring healthy wildlife populations: *The primary goal of wildlife management is to provide healthy life systems necessary to sustain Wisconsin's wildlife populations for their biological, recreational, cultural and economic values.*

c. Chapter NR 27, Wis. Adm. Code, establishes an endangered and threatened species list. Threatened species listing of four cave bats species grants WDNR authority in state statutes 29.604, 227.11, and 227.24 Wis. Stats

d. Chapter NR 40, Wis. Adm. Code, establishes a classification system for invasive species and regulates those in the prohibited and restricted categories. Prohibited Invasive Species listing of *Geomyces destructans* grants WDNR authority in Sections 23.09 (2) (intro.), 23.091, 23.11 (1), 23.22 (2) (a) and (b) and (2t) (a), 23.28 (3), 27.01 (2) (j), 29.039 (1), 227.11(2)(a), and 227.24 (1) (a), Stats

e. Chapter NR 40, Wis. Adm. Code, establishes a classification system for invasive species and regulates those in the prohibited and restricted categories. Prohibited Invasive Species listing of *Pseudogymnoascus destructans* grants WDNR authority in Sections 23.09 (2) (intro.), 23.091, 23.11 (1), 23.22 (2) (a) and (b) and (2t) (a), 23.28 (3), 27.01 (2) (j), 29.039 (1), 227.11(2)(a), and 227.24 (1) (a), Stats

f. Chapter NR 40, Wis. Adm. Code also establishes preventive measures that when followed will help minimize the spread of invasive species into or within Wisconsin. The *Pseudogymnoascus destructans* and WNS management ruling grants WDNR authority in Sections 23.09 (2) (intro.), 23.091, 23.11 (1), 23.22 (2) (a) and (b), 23.28 (3), 27.01 (2) (j), 29.039 (1) and 227.11(2) (a), Wis. Stats.

1. WI ADC s NR 40.07

(7) INTRODUCTION PROHIBITED. Unless authorized by a permit issued by the department under this chapter, no person may introduce a nonnative algae or cyanobacteria species in any water of the state. This subsection does not apply to the incidental introduction of a nonnative algae or cyanobacteria species by a person operating an aircraft, vehicle, equipment or gear while engaged in fire suppression.

Note: Section 23.24 (3) (a) 1., Stats., prohibits any person from introducing nonnative aquatic plants into waters of this state unless the person has a valid aquatic plant management permit issued by the department.

(8) WHITE-NOSE SYNDROME PREVENTION. (a) *Definition.* In this subsection "near a cave or mine" means within 100 feet of a cave or mine.

(b) *Entry with imported items prohibited*. Except as provided in par. (e), no person may bring or place any equipment, gear, clothing or other object of any kind in or near a cave or mine if the equipment, gear, clothing or other object has been in or near a cave or mine located outside of Wisconsin.

(c) *Requirements.* 1. Except as provided in subd. 5. and par. (e), no person may bring or place any equipment, gear, clothing or other object of any kind in or near a cave or mine if the equipment, gear, clothing or other object has been in or near a cave or mine located in this state unless the equipment, gear, clothing or other object has first been cleaned in accordance with par. (d).

2. Except as provided in subd. 5. and par. (e), any person removing any equipment, gear, clothing or other object of any kind from any cave or mine or from within 100 feet of any cave or mine or exiting any cave or mine or the

area within 100 feet of any cave or mine with any equipment, gear, clothing or other object of any kind shall clean the equipment, gear, clothing and other objects in accordance with par. (d).

3. Except as provided in subd. 5. and par. (e), any person who caused or will cause contact to occur between a bat and an individual or object of any kind, including but not limited to a net, trap, weighting tube, bat bag, wing punch, ruler, clothing, glove, electronic equipment or exclusion material shall, prior to and immediately following the contact, clean the individual or object in accordance with par. (d).

4. Except as provided in subd. 5. and par. (e), any person who owns or operates an active mine or a commercial cave or mine shall ensure that each individual entering or exiting the person's active mine or commercial cave or mine complies with par. (b) and subds. 1. to 3.

5. The requirements of subds. 1. to 4. do not apply to dedicated equipment, gear, clothing and other objects of any kind that are used exclusively in or near and stored exclusively in or near a single cave or mine.

(d) *Protocols.* Individuals, equipment, gear, clothing and other objects of any kind to which the requirement of par. (c) 1., 2., or 3. applies shall be cleaned in accordance with protocols approved by the department. Unless it determines that emergency conditions require otherwise, the department shall provide notice and opportunity for public comment at least 14 days before it materially changes an approved protocol.

Note: Detailed information about department-approved cleaning protocols may be obtained at http://dnr.wi.gov/topic/WildlifeHabitat/bats.html or by writing to Wisconsin Department of Natural Resources, Wisconsin Bat Monitoring Program, Bureau of Natural Heritage Conservation, P.O. Box 7921, Madison, WI 53707-7921.

(e) *Written exemption.* The department may exempt any person in writing from par. (b) or (c) if it determines that the exemption will not significantly increase the risk that *Pseudogymnoascus destructans* (white-nose syndrome fungal pathogen) would be introduced or transported to other locations. The department may set conditions in any written exemption granted under this paragraph. Any person who receives a conditional exemption from the department under this paragraph shall comply with the conditions of the exemption.

(f) *Site-specific prevention plan.* Except as provided in subd. 5., any person who owns or operates a cave or mine shall develop a written plan for each of the person's caves and mines to prevent the introduction and transmission of *Pseudogymnoascus destructans* (white-nose syndrome fungal pathogen).

1. The prevention plan shall include a description of practices that will be installed or implemented by the owner or operator to prevent the introduction or transmission of *Pseudogymnoascus destructans* via human transmission. The plan may include practices such as screening visitors, cleaning equipment, gear, clothing and other objects before they are brought into the cave or mine or upon their removal, the use of dedicated equipment, gear, clothing and other objects, and modification of the cave or mine environment to make it unsuitable for establishment and transmission of *Pseudogymnoascus destructans*.

2. The prevention plan shall be submitted by the owner or operator to the department by June 1, 2011, for its review and approval. The department may set conditions for the approval of any plan required under this paragraph and shall include any exemption granted under par. (e) to the owner or operator of a cave or mine in a plan approval issued under this paragraph. In setting conditions for the approval of any plan, the department shall consider the site-specific risk of *Pseudogymnoascus destructans* introduction and transmission along with

the feasibility and reasonableness of alternative practices for the prevention of *Pseudogymnoascus destructans* transmission or introduction.

3. The owner or operator shall implement the plan as approved by the department and shall maintain as appropriate all practices specified in the plan.

4. The owner or operator shall maintain a copy of the approved prevention plan at the cave or mine covered by the plan or an alternate location approved by the department and shall make the copy available for inspection upon request by the department at any reasonable time.

5. This paragraph does not apply to any of the following:

a. A cave or mine that the department has determined in writing lacks the environmental conditions, including temperature and humidity, suitable for the introduction or transmission of *Pseudogymnoascus destructans*.

b. A cave or mine where the owner or operator restricts human access through the use of department-supplied and maintained signage or bat-friendly barriers or gates.

c. A cave or mine where the primary reason for human presence in the cave or mine relates to the storage or processing of a food or beverage intended for human consumption.

2. WDNR WNS Implementation & Response Strategy

The Department of Natural Resources is the lead agency for WNS response in Wisconsin. The WDNR will collaborate with state, tribal, federal and local agencies to control the impacts of WNS in the state.

The role of WDNR includes:

1. Manage Wisconsin WNS Surveillance and Response.
2. Organize and lead the State's WNS science and stakeholder advisory groups.
3. Inventory bats and key bat sites such as hibernacula and maternity roosts.
4. Implement surveillance, field investigations and other activities associated with WNS.
5. Receive suspect WNS cases reported by partners involved with an initial health watch including: bat rehabilitators, WSLH colleague's working with bats, and nuisance animal control.
6. Prevent anthropogenic spread of WNS by:
    - Permitting only safe practices for bat rehabilitation.
    - Mandating biosecurity measures and manage cave access when appropriate and necessary
7. Lead implementation of response efforts specific to the identification of WNS.
8. Long-term database management: collect and archive data on WI WNS cases in coordination with Bureau of Wildlife Management, Wildlife Health.
9. Communicate with USFWS and other key regional and national agencies and working groups tracing the spread of the disease. (See Communications section for details)
10. Communicate with state, federal and local agencies involved with a WNS incident, and the public.
11. Coordinate outreach and public education.
12. Collaborate with the DATCP and the USDA to control of the disease including disposal of infected carcasses.

3. WDNR WNS Implementation & Response Strategy Summary

Wisconsin's response to WNS, as outlined in the WI WNS Implementation & Response Strategy, will by necessity (1) involve multiple state and federal agencies and stakeholders, (2) continually incorporate findings from ongoing WNS research, surveillance, and management, and (3) be highly and regularly adaptive to the changing status of bats and WNS in Wisconsin, and to the needs of Wisconsin's citizens, and (4) be tiered off of, and informed by, the national response plan: A National Plan for Assisting States, Federal Agencies, and Tribes in Managing White-Nose Syndrome in Bats, released May 2011.

Goals for preventing/managing WNS in Wisconsin:

1) prevent anthropogenic introduction of *Pseudogymnoascus destructans* into the state,
2) prevent or slow the spread of WNS to additional sites once WNS is identified in WI,
3) attain sufficient control of the disease in affected areas to conserve bat populations and their potential for recovery to pre-WNS abundance,
4) secure the future of bats without affecting other natural systems beyond acceptable levels,
5) minimize the impacts of WNS and WNS management actions on stakeholders interests, and
6) maintain resource and cost effectiveness so that management efforts can be sustained as long as necessary.

4. Federal WNS response

A national WNS response plan, entitled: A National Plan for Assisting States, Federal Agencies and Tribes in Managing White-Nose Syndrome in Bats, was prepared through the collaborative efforts of federal and state agencies with a draft released in October 2010, and final version released in May 2011 (USFWS 2011). Within this plan, the described primary federal role is: "…to provide coordination and assistance with research, surveillance, disease management, diagnostic testing, technology, communications, information dissemination, education, and funding for State WNS programs. Federal agencies will provide tools and financial assistance, when available, to States and help develop consensus-based approaches to WNS control and mitigation."

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Agency is charged with the protection of the nation's endangered species under the Endangered Species Act (ESA). With regard to WNS, the anticipated role of USFWS includes:

1. Assess the potential impact of WNS on the bat species under its jurisdiction.
2. Grant permits to state and federal agencies to act in the protection of bat species under its jurisdiction.
3. Assist WDNR in surveillance, field investigations and other activities associated with WNS.
4. Authority for activities involving current or future federally listed species.
5. Participate in the Wisconsin WNS science advisory group when requested.
6. Assist WDNR to disseminate accurate information to public health agencies as it relates to wildlife health.

USGS National Wildlife Health Center (NWHC)

The anticipated role for NWHC includes:

1. Assist WDNR in surveillance, field investigations and other activities associated with WNS.
2. Provide laboratory and diagnostic capabilities for WNS.
3. Assist WDNR to disseminate accurate information to public health agencies as it relates to wildlife health.

4. Provide technical assistance in identification of WNS.
5. Collaborate in research determining the extent of the threat of WNS on bats and provide science-based support for the development of recommendations to mitigate such threats.

APPENDIX 7: ACQUISITION OF HSB CAVE BY DOOR COUNTY

DOOR COUNTY

Resolution No. 2011-___ Page 1 of 2

EXCHANGE OF LAND FOR THE PURPOSE OF CREATING A PARK OR RECREATIONAL AREA

TO THE DOOR COUNTY BOARD OF SUPERVISORS:

WHEREAS, P.I.N. 008-01-03292611QQ was acquired by Door County on September 2, 2010, pursuant to §75.521 Wis. Stats. In Door County Case Number 2010-CV-73 and

WHEREAS, Door County may exchange land so acquired for other land for the purpose of creating a park or recreation area (i.e., become part of Frank E. Murphy Park); and

WHEREAS, Horseshoe Bay Golf Club 2006, LLC is the owner of P.I.N. 008-01-03292614A; and

WHEREAS, Door County is willing and able to exchange a portion of P.I.N. 008-01-03292611QQ (designated as "2B" on Addendum A, attached hereto and incorporated herein by reference) for a portion of P.I.N. 008-01-03292614A (designated as "3A" on Addendum A); and

WHEREAS, Horseshoe Bay Golf Club 2006, LLC is also willing and able to exchange "3A" for "2B"; and

WHEREAS, This exchange of land will result in Door County obtaining ownership of the land where the only known entrance to Horseshoe Bay Cave is situated and control of access to the Cave; and

WHEREAS, "3A" will be subject to a vision easement in favor of Horseshoe Bay Golf Club 2006, LLC; and

WHEREAS, The remnant of P.I.N. 008-01-03292611QQ and "3A" will be combined with P.I.N. 008-01-03292613Q, which Door County acquired on July 27, 2010; and

WHEREAS, Door County and Horseshoe Bay Golf Club 2006, LLC (the surface owner of the land above much of Horseshoe Bay Cave) will negotiate a cave access/protection agreement; and

WHEREAS, Horseshoe Bay Cave is one of the more significant bat hibernacula in Wisconsin, and White-Nose Syndrome ("WNS") is a concern. Consequently, Door County will develop, with the anticipated assistance of the Wisconsin Department of Natural Resources, a cave management plan (e.g., a WNS prevention plan).

DOC # 755811

Recorded
DEC. 15, 2011 AT 01:35PM

DAREY PETERSILKA
REGISTER OF DEEDS
DOOR County, WI

Fee Amount Paid: $30.00
Transfer Fee Paid: $2.30
WHZ: 8-7

Recording Area

Name and Return Address

DOOR COUNTY Corporation Counsel
421 Nebraska Street
Sturgeon Bay, WI 54235

Pt. 12713

Part of Parcel Identification Number:
009-01-0029261QQ

This is not homestead property.

WARRANTY DEED

Document Number — Document Title

THIS DEED, made between Horseshoe Bay Cave Club 2008, LLC, a domestic limited liability company organized and existing under the laws of the State of Wisconsin, (Grantor) and County of Door, a body corporate under Section 59.01 Wisconsin Statutes, (Grantee)

Grantor for good and valuable consideration conveys to Grantee the following described real estate.

A parcel of land located partly in Government Lot Two (2) and partly in Government Lot Three (3), in Section Three (3), Township Twenty-nine (29) North, Range Twenty-six (26) East, in the Town of Egg Harbor, Door County, Wisconsin, more particularly described as follows:

Commencing at the East quarter corner of said Section 3; thence North 89 deg. 08 min. 47 sec. West, 2573.66 feet along the South line of the NE 1/4 of said Section 3; thence North 00 deg. 53 min. 13 sec. East, 116.80 feet; thence North 67 deg. 59 min. 29 sec. West, 270.96 feet to the point of beginning of lands to be described; thence continuing North 67 deg. 59 min. 29 sec. West, 88.47 feet; thence South 24 deg. 45 min. 00 sec. West, 510.00 feet; thence South 09 deg. 15 min. 56 sec. East, 334.56 feet; thence North 30 deg. 05 min. 58 sec. East, 799.90 feet to the point of beginning.

Grantor warrants that the title to the Property is good, indefeasible in fee simple and free and clear of encumbrances.

Grantee also intends hereby to combine the conveyed real estate and the remnant of Parcel Identification Number 009-01-0029261QQ with another contiguous parcel already owned, to wit: Parcel Identification Number 009-01-0029261QQ (Doc # 748107, Recorded October 12, 2010). The description of the combined parcels is set forth in Exhibit A, attached hereto and incorporated herein by reference.

Glenn L. Timmerman (SEAL)

(SEAL)

AUTHENTICATION

SIGNATURE(S) GLENN L. TIMMERMAN

authenticated on DECEMBER 1, 2011

Brian T. Petroelka

Title: Member State Bar of Wisconsin

ACKNOWLEDGMENT

STATE OF WISCONSIN)
) ss.
DOOR COUNTY)

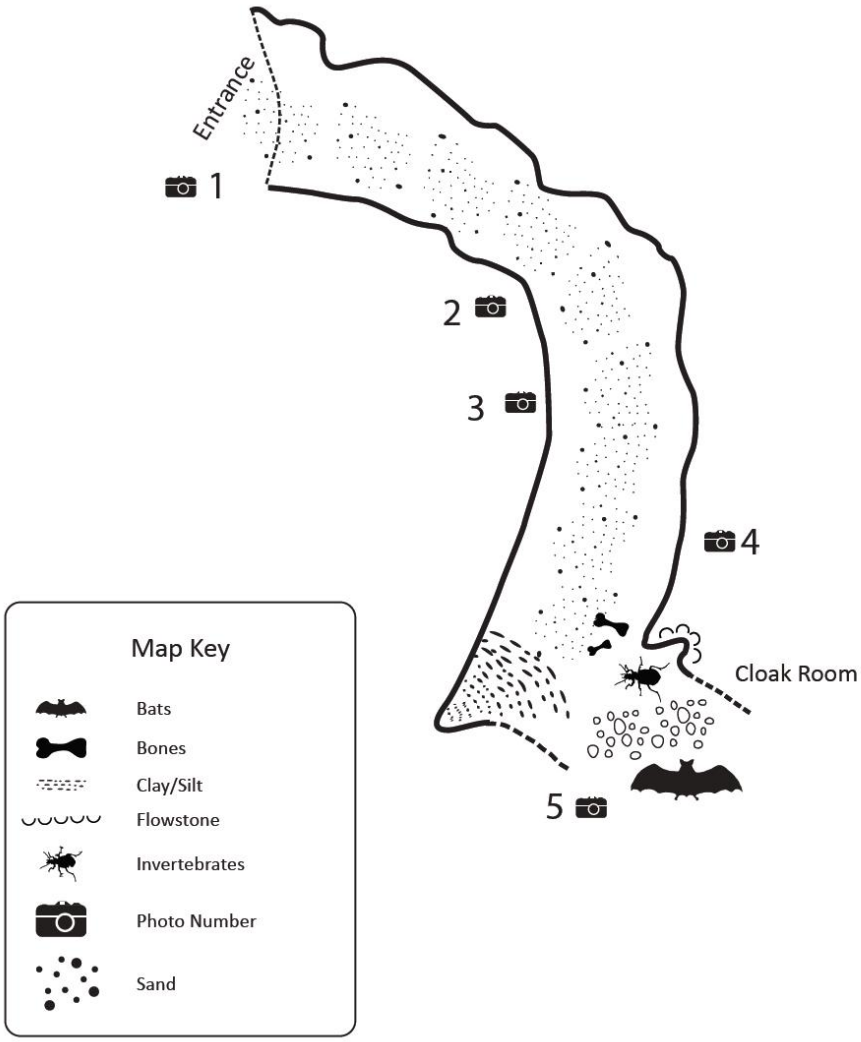
Personally name before me on _____ the above-named

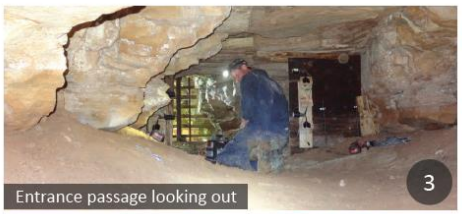
to me known to be the person(s) who executed the foregoing instrument and acknowledged the same.

Notary Public, State of Wisconsin
My Commission (is permanent) (expires: _____)

THIS INSTRUMENT DRAFTED BY
Door County Corporation Counsel Grant P. Thomsen
State Bar of Wisconsin Member Number 1013848

Management Zone 1




Entrance passage looking out 3

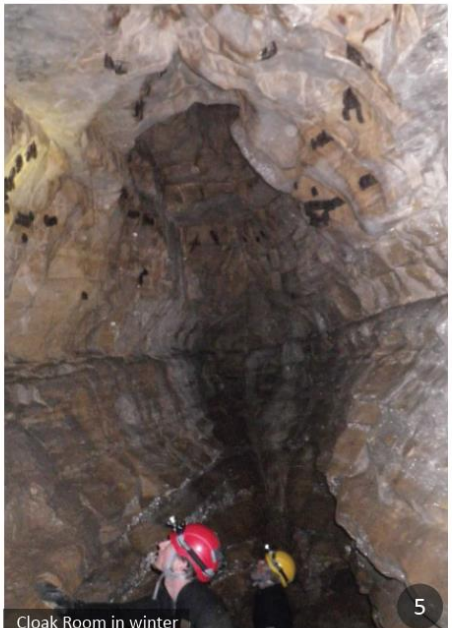

Gated entrance 1

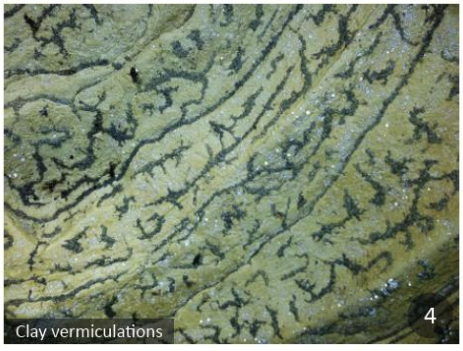

Big brown bats (*Eptesicus fuscus*) 2


Animal bones in Cloak Room 5


Entrance passage flooded. Photo by Gary Soule 3

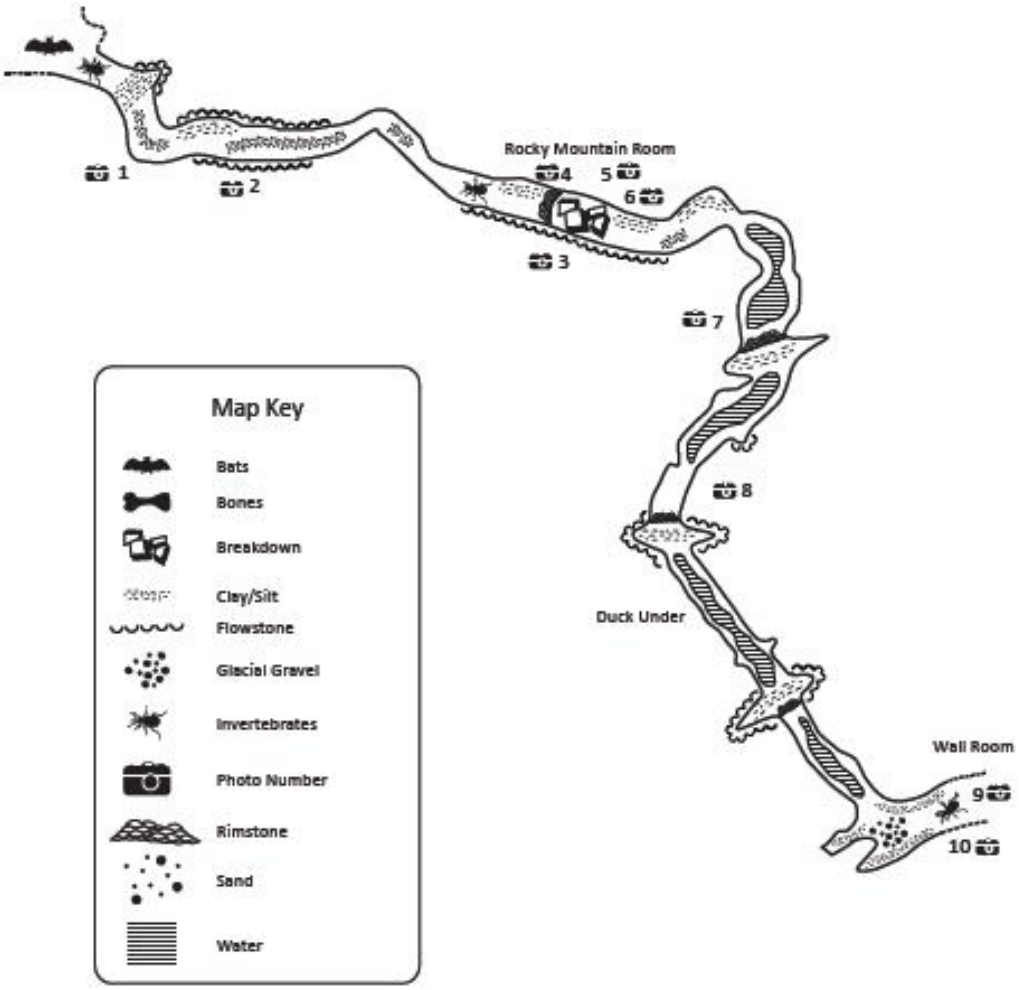

Thermocline visible on a hot summer day 1


Cloak Room in winter 5


Clay vermiculations 4


Microbial colonies 4

Management Zone 2




Flowstone on the wall; flagged sediment profile 8


Aquatic isopod from the Wall Room 9

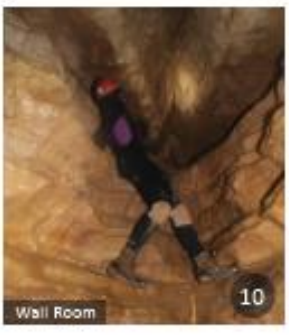

Typical water level between Rocky Mountain Room and Duck Under 7


Rimstone dams (headlamp for scale) 4


Rocky Mountain Room 3


Springtail (Collembolan) on the pool surface 6

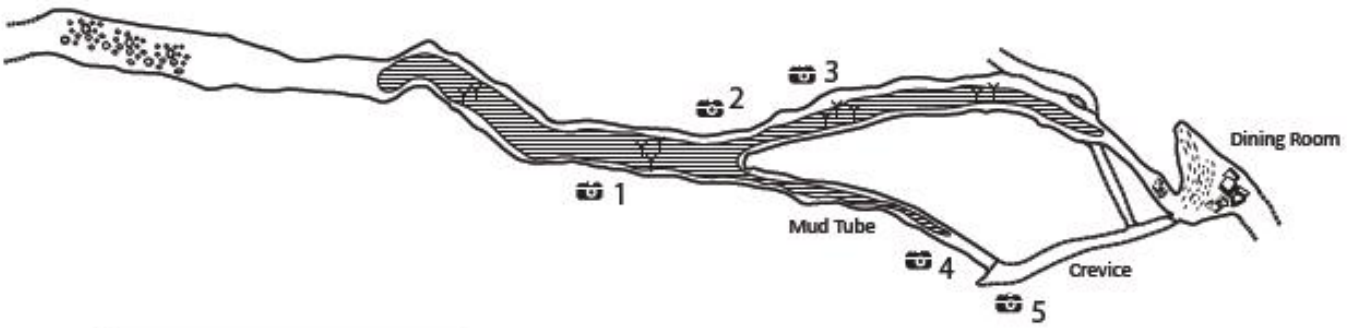

Isolated drip pool 5


Wall Room 10

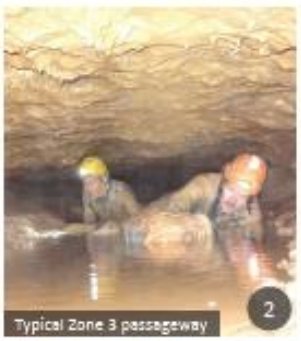

Enlarged crevice dome 2


Sampling invertebrates in a mouse nest 1

Management Zone 3




Mud Tube at the top of the Crevice 5

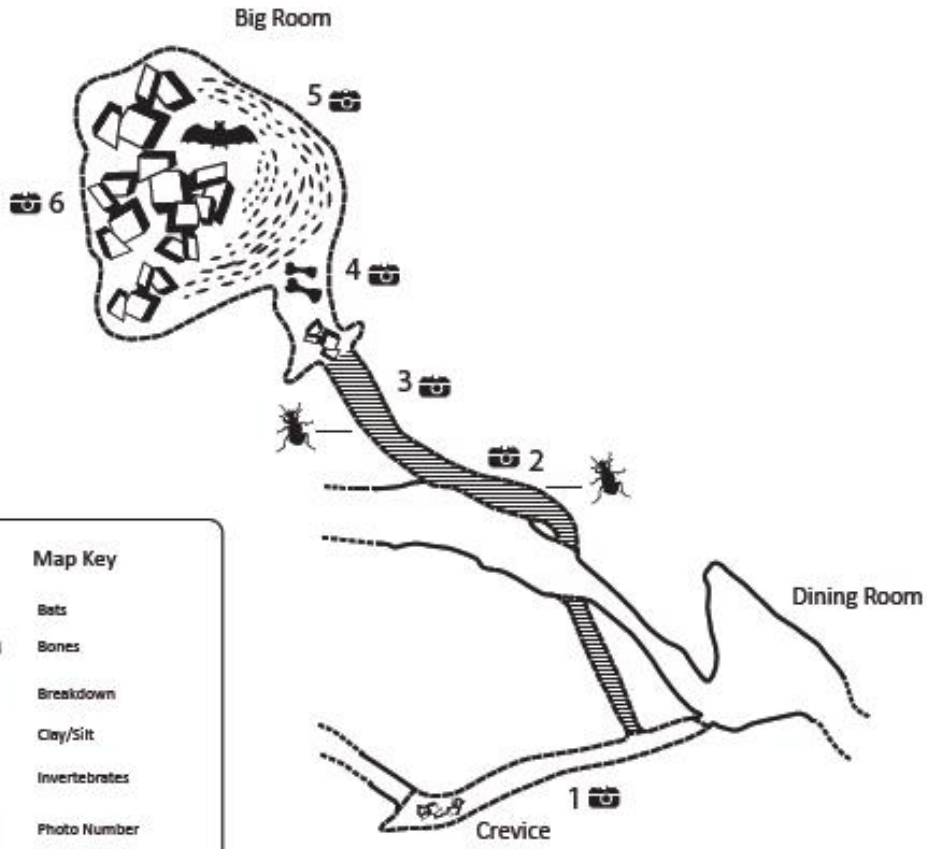

Typical Zone 3 passageway 2


Soda straw stalactites 3


Water and mud are unavoidable in Zone 3 1


Mud tube 4

Management Zone 4a




Ascending the crevice 1


Bats bones being eroded out of sediment in a drip cup 4


Groundwater amphipod found in lower passage 3

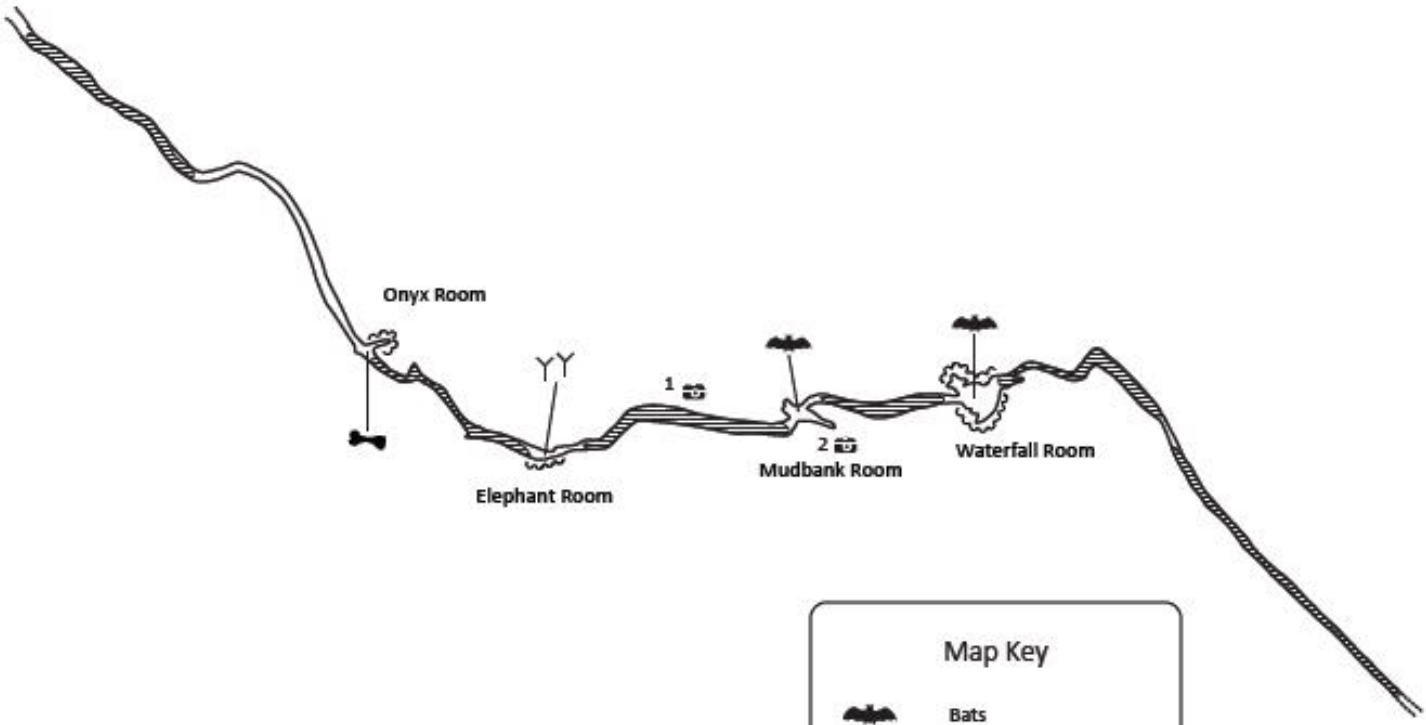

Big Room 6

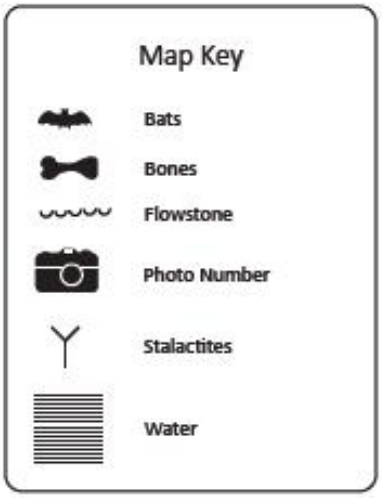

Lower passage during high water 2


Mating little brown bats (*Myotis lucifugus*) 5


Ascending the crevice 1

Management Zone 4b





Mississippi River Section in winter. Photo by E. Brodsky

Breakdown beneath crevices allow a brief exit from the water. Photo by E. Brodsky

Water level lowest in mid-winter. Photo by E. Brodsky