



Managing the Heritage Resources of the Wisconsin State Park System

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Background:

More than a century ago, the Wisconsin State Park System (WSPS) was established to “provide areas for public recreation and for public education in conservation and nature study” (Wis.Stats s.27.01(1), stats. Each property designated for inclusion in the WSPS was chosen “by reason of its scenery, its plants and wildlife, or its historical, archaeological or geological interest.” In essence, WSPS properties hold some of our state’s most valuable **heritage resources** – our natural, cultural and scenic resources including natural communities and landscapes, wildlife, water resources, geological features, archaeological features, and historic sites.

Within the system, each property houses unique features, from striking geological formations to rare ecological communities to fragile archaeological sites. Heritage resources, processes, systems, and values found in WSPS properties include:

- Physical resources such as water, air, soils, topographic features, geologic features, and natural soundscapes
- Physical processes such as weather and climate, erosion, and fire
- Biological resources such as native plants, animals, and communities
- Biological processes such as photosynthesis, succession, and evolution
- Cultural resources such as archaeological sites, historic buildings, artifacts, and archival materials that document historical “storylines”
- Ecological landscapes
- Highly valued characteristics such as scenic views

This document addresses the management of these elements. By effectively managing their heritage resources, WSPS properties can be effective stewards of these resources while providing opportunities for nature-based outdoor recreation, education and interpretation, and scientific research.

Challenges: In today’s State Park System, actively managing heritage resources while serving millions of annual users and maintaining thousands of facilities is often difficult. In addition to shortages of fiscal and staff resources, here are some of the challenges faced by property managers::

- Factors like succession and over-browsing have diminished the quality of some heritage resources including scenic views, natural communities, and Native American mounds.
- In some ecological communities, the absence of natural processes and active management that simulates natural processes has resulted in a transition to an unnatural condition including lack of forest regeneration in some types of forest stands.
- Invasive plant and animal species have spread tremendously, often threatening the ecological integrity and biodiversity of property ecosystems.

- In the face of changing and increasing recreational demands, some facility development is incompatible with scenic, ecological, and cultural values of the properties.
- Erosion and run-off have frequently resulted in diminished surface water quality.
- An ever-growing deer herd on some properties has resulted in over-browsing and negative ecological impacts.
- On many properties, incomplete inventory work makes effective management of heritage resources very difficult, including inadequate historical documentation to tell the real “story” of the site.

Desired Outcomes: The *Wisconsin State Park System Strategic Plan 2008* identifies the following goal: “Actively manage, restore, enhance, and protect the natural, cultural, and scenic heritage of the Wisconsin State Park System.”

In working towards this goal, property managers and resource professionals will strive to achieve sustainability of the heritage resources balanced with the ability to provide meaningful recreational experiences for property visitors. To strike this balance, several desired outcomes have been identified:

- Naturally occurring plant and animal communities are effectively maintained and restored where possible; special attention is given to sustaining and improving habitat for endangered, threatened, and rare species.
- Historical and archaeological resources are accurately recorded and archived to the best of our ability.
- Stewardship of heritage resources and management of recreational opportunities must be compatible on a property level in accordance with the property’s master plan.
- Water quality of lakes, rivers, streams, and groundwater aquifers is protected; erosion and run-off from construction and recreational activities is minimized.
- Ecological threats, including invasive species and over-browsing, are monitored, managed, and controlled to minimize negative impacts.
- Each WSPS property works towards a comprehensive inventory of its heritage resources including biological, physical, and cultural components.
- Each WSPS property develops a Heritage Resources Management Plan that is compatible with the property’s master plan and guides all resource management and development efforts on the property. The plan will be presented for public comment at an annual property management plan meeting.
- WSPS properties are models of sustainable heritage resources management and provide educational opportunities related to these management efforts.

General Management Concepts: As clear in the above Desired Outcomes, sustainability of heritage resources is a primary responsibility of the WSPS. In short, property managers must ensure that ongoing and proposed activities do not cause impairment of property resources.

Heritage resources will be managed to preserve basic physical and biological processes, as well as individual species, features, and plant and animal communities. When possible and appropriate, natural change will be allowed to occur. However, where past or ongoing human activities or factors such as invasive species, lack of wildfire, and over-browsing have disrupted natural processes, restoration of natural ecosystems may be necessary. Property staff and resource professionals must use monitoring and research information to understand the detected changes and make effective management decisions.

Planning for Resource Management: Each WSPS property must complete a comprehensive inventory of natural and cultural heritage resources. To accomplish this goal, resource experts from WDNR, other agencies, universities, and nonprofit organizations may be consulted and involved in inventory efforts. In addition, each property must develop and periodically update a written “Heritage Resources Management Plan.” This document will include long-range goals and strategies needed to achieve the desired future condition for the property’s heritage resources. It will integrate the best available science and will prescribe activities such as inventories, research, monitoring, restoration, mitigation, protection, and management of resources. Each property’s resources management plan **must be consistent with the property’s master plan**. Ongoing monitoring and research activities will evaluate the effectiveness of prescribed activities and identify the effects of management actions.

Partnerships: The WSPS, at the statewide, regional, and property levels, will pursue opportunities to improve heritage resource management within properties and across the state by cooperating with other public agencies, appropriate Native American representatives, nonprofit organizations (including Friends groups), volunteers, and private landowners. By partnering with others, land managers can better achieve ecosystem stability and other resource management objectives. Collaborative efforts may include research and monitoring activities, protection and restoration of natural communities and cultural resources, control and prevention of invasive species and nuisance wildlife, forested lands management, and other activities. In addition, the WSPS will seek the cooperation of others in minimizing the impacts of influences originating outside WSPS properties by controlling noise and artificial lighting, maintaining water quality and quantity, eliminating toxic substances, preserving scenic views, improving air quality, preserving wetlands, protecting threatened or endangered species, eliminating invasive species, protecting shorelines, managing fires, and other means of protecting heritage resources.

Native Plant, Animal, and Community Management: Whenever possible, natural processes will be allowed to maintain native plant and animal communities and populations. However, in some instances, management is necessary:

- because a population occurs at an unnaturally high or low level as a result of human influences (such as loss of habitat, alteration of habitat due to agriculture or urban development, etc.) and it is not possible to mitigate the effects of these disturbances
- to protect or restore specific cultural resources
- to accommodate intensive development in portions of properties appropriate for such development
- to protect or restore rare, threatened, or endangered species

- to protect human health and safety
- to protect property when it is not possible to change the pattern of human activities
- to meet specific property management objectives as identified in a property's master plan, forested lands management policy, mounds preservation policy, etc.

In these instances, when management activities are necessary, impacts of management methods must be monitored and evaluated to determine effects on targeted and non-targeted components of the ecosystem, as well as property visitor experiences.

In instances where natural landscapes have been significantly altered by human activities, more active management may be necessary to restore these areas to a more natural condition. This management may include, but is not limited to:

- removing constructed features, restoring natural topography, and revegetating with native species
- restoring natural processes to areas disturbed by human activities such as fire suppression
- rehabilitating areas disturbed by visitor use or the removal of hazard trees
- maintaining open areas that were formerly maintained by natural processes and have been altered by human activities

Maintenance of Altered Plant Communities: While the maintenance of naturally occurring plant communities is most desirable, some areas within a property may call for plantings or maintenance of altered plant communities. For example, management for endangered, threatened, and rare species may call for planting native plants or manipulating existing plant communities. Use of non-natural plantings may also be done under the following conditions:

- in specific areas, screen plantings may be used to protect against undesirable impacts of adjacent land uses, provided that the plantings do not result in the invasion of exotic species
- when necessary to protect the desired condition of specific cultural resources and landscapes; generally, plant communities will reflect the character of the landscape that prevailed during the historic period reflected in these resources
- where cultivated crops may be allowed as part of the cultural landscape or as reflected in agricultural lease agreements
- where needed for intensive development areas; these plantings will use native species to the maximum extent possible

For all plantings, recurring use of soil fertilizers or other soil additives may be allowed only as needed to maintain the desired condition of the plant community and only where such use does not unacceptably alter the characteristics of the soil and does not degrade surface or ground water quality.

Invasive Species Management: In general, new exotic (and potentially invasive) species will not be introduced into WSPS properties. In rare situations, an exotic species may be introduced or maintained to meet specific, identified management needs (i.e. to control an invasive species or recreate an historical landscape) and when all feasible measures to minimize potential harm have been taken.

All exotic/invasive plant and animal species that are not maintained for the above purposes will be managed, and possibly eradicated, if control is feasible and the species:

- interferes with natural processes and the stewardship of natural features, native species, or natural habitats
- disrupts the genetic integrity of native species
- disrupts the accurate presentation of a cultural landscape
- damages cultural resources
- significantly hampers the management of property or adjacent lands
- poses a public health hazard
- creates a hazard to public safety
- interferes with quality recreational experiences for property visitors

High priority should be given to managing invasive species that threaten a substantial impact on property resources and that can reasonably be expected to be successfully controlled. Lower priority should be given to invasive species that have almost no impact on property resources or that probably cannot be successfully controlled.

Before making a decision to undertake management activities, property managers should: (1) consult the property's master plan; (2) evaluate the species' current or potential impact on property resources; (3) develop and implement an invasive species management plan; (4) consult, as necessary, with resource experts; and (5) invite public review and comment where appropriate (specifically if the planned activities are inconsistent with the property's master plan). Activities designed to manage invasive species must avoid causing significant damage to native species, natural communities, natural processes, cultural resources, and human health and safety.

Pest Management: Pests are living organisms that interfere with the management objectives of a specific site within a property, or that jeopardize human health or safety. Decisions concerning whether or not to manage a pest will be influenced by whether the pest is an exotic or native species. Exotic pests should be managed according to the guidelines for invasive species. Native pests may be allowed to function as part of the natural processes on a property. Property staff may control native pests to:

- conserve endangered, threatened, or rare species, and unique natural communities
- preserve, maintain, or restore the integrity of cultural resources
- conserve and protect plants, animals, and facilities in developed areas

- prevent pest outbreaks from invading uninfested areas outside of the property
- manage a human health hazard or threat to human safety
- maintain the quality of recreational experiences for property visitors

When possible, properties should follow an integrated pest management (IPM) program to minimize possible risks to people, resources, and the environment. Consultation with resource experts will enable property managers to identify appropriate IPM procedures.

Fire Management: Naturally ignited fire was historically a part of many natural systems within WSPS properties. Today, fire may contribute to or hinder the achievement of property management objectives. Therefore, fire management programs must be designed to meet property resource management goals while ensuring the safety of property staff and visitors.

As part of each property's Heritage Resources Management Plan, the use of fire will be considered in maintaining and managing property natural and cultural resources. Considerations must be made for the safety of property visitors, staff, neighbors, and developed facilities, as well as the potential effects on air and water quality. Both wildland and prescribed fires will be managed according to the property's resource management plan and master plan.

Water Resources Protection: Pollution of surface waters and groundwater by both point and non-point sources can impair the natural functioning of aquatic and terrestrial ecosystems, and diminish the ability of visitors to use and enjoy these resources. WSPS properties will minimize damage to these resources by managing human activities occurring within and outside property boundaries. They will work with appropriate agencies and WDNR programs to meet water protection standards; take all necessary actions to maintain or restore water quality; and, where appropriate, enter into agreements with other agencies and landowners to secure their cooperation in protecting property water resources.

Properties will consider watershed health and minimize human disturbance to watersheds by limiting runoff, erosion, and disturbance to vegetation and soil caused by fire, insects, and facilities development. They will manage streams to protect natural processes that create habitat features such as floodplains, riparian systems, woody debris accumulation, terraces, gravel bars, riffles, and pools. To protect stream quality, property managers will work to protect watershed and riparian vegetation and natural stream flow. When conflicts between development (such as bridges and roads) and stream processes are unavoidable, managers will first consider relocating or redesigning facilities, rather than manipulating streams. Where stream manipulation is unavoidable, managers will use techniques that are visually non-obtrusive and that protect natural processes as much as possible.

Air Resources Management: The WSPS must work to maintain or restore the best possible air quality in properties to: (1) preserve natural resources and systems; (2) preserve cultural resources; and (3) sustain visitor enjoyment, human health, and scenic vistas. Vegetation, visibility, water quality, wildlife, historic and pre-historic structures and objects, cultural landscapes, and most other elements of a property's environment are sensitive to air pollution. To protect the air quality within and adjacent to WSPS properties, managers should work with resource experts to:

- identify the air quality-related values (i.e. sensitive natural communities and species, scenic vistas, etc.) within the property

- monitor the condition of air quality and related values
- minimize air pollution associated with property operations, including the use of open burning and disposal of slash, and visitor use activities (excluding campfires)
- ensure healthful indoor air quality in property facilities
- educate visitors regarding the environmental and health impacts of burning garbage

Geologic Resources Management: All WSPS properties must protect and preserve geologic resources as integral components of property ecosystems. Property staff will: (1) assess the impacts of natural processes and human activities on geologic resources; (2) maintain and restore existing geologic resources; and (3) integrate geologic resource management into property “Heritage Resources Management Plans.”

Property managers should protect geologic features from the negative impacts of human activity, while allowing natural processes to continue. Geologic features include: rocks, soils, and minerals; springs; caves and cave systems; sand dunes, moraines, and other depositional features; dramatic or unusual rock outcrops and formations; and paleontological resources like fossils.

Fossils and their contexts should be inventoried and monitored for newly exposed fossils, particularly in areas of rapid erosion. Scientifically significant resources should be protected by collection or by on-site protection and stabilization. Partners from the academic community and other agencies can assist in these inventory and collection efforts.

In most cases, natural geologic processes should be allowed to continue unimpeded. Such processes include exfoliation, erosion and sedimentation, cave formation, and shoreline processes. Geologic processes that threaten visitor safety, infrastructure integrity, or viability of endangered and threatened species should be addressed in resource management planning.

Where natural shoreline processes have been interrupted or accelerated by human activities, restoration or mitigation may be necessary. Also, erosion control may be necessary in cases where naturally occurring erosion impedes visitor activity, threatens safety, or results from facility development. In these cases, the most natural-appearing and least intrusive methods should be used.

WSPS property managers should avoid placing new facilities in geologically hazardous areas, including areas prone to flooding, rock falls, and shoreline processes. Managers should assess the feasibility of phasing out, relocating, or providing alternative facilities for property developments subject to hazardous processes.

Scenic Resources Management: Scenic resource protection is an essential component in the management of heritage resources. Visitors value scenic landscapes and, generally, natural-appearing landscapes are more highly valued. Scenery contributes to a “sense of place” and helps create a mutually shared image of a property or a landscape.

All landscapes have definable character attributes. In most WSPS properties, landscape attributes are positive natural elements such as landforms, vegetative patterns, and water features. Attributes may also include cultural features such as historic buildings, fences, and Indian mounds. Landscapes that contain both diversity and harmony have the greatest potential for high scenic value. When human perceptions of

the intrinsic beauty of these attributes are combined with these environmental and natural features, scenic attractiveness is determined.

To effectively manage and protect scenic resources, managers should consider the following concepts:

- Management of scenic resources calls for protecting the scenic values on both the broad landscape setting level and the individual site level.
- To create and maintain individual scenic vistas, use judicious and selective management and removal of vegetation; ensure adequate access through development of necessary footpaths, trails, pull-offs, parking areas, etc.
- The level of visibility affects the ability to appreciate the beauty of the landscape, especially the color and contrasting forms of distant features. Air pollution can impair the quality of the viewing experience, and should be monitored and mitigated if possible.
- When managing scenic resources, scenic integrity is critical. Activities such as road construction, timber harvesting, and facilities development can alter the line, form, color and texture of the natural landscape, often coming into conflict with the expectations and preferences of visitors. These activities should be carefully planned and implemented to minimize disturbance of scenic resources.
- Many scenic values are expressed in the opportunity to appreciate important vistas. If possible, establish a system of visual monitoring points from which photographs will be taken on a regular basis, at least every 5 to 10 years, to measure changes in the landscape and identify problem areas (intruding vegetation, obtrusive development, etc.).
- Focus scenic resource protection efforts on landscapes that: (1) are readily accessible to viewing by large numbers of people; or (2) are viewed by visitors with high levels of expectation such as birders, photographers, etc.; or (3) are special places with unique importance, meaning, regional or local significance.
- Scenic resources protection efforts may include: setbacks from important scenic areas; buffers; screening of developed sites; landscaping requirements; use of architectural guidelines; signage regulations and limitations; transportation access control; erosion control; landscape maintenance guidance; vegetation management and removal.

Soundscape Management: Visitors to WSPS properties are most often seeking a natural experience, complete with a natural soundscape in the absence of human-caused sound. To create this kind of experience, sounds produced by birds, frogs, insects, and processes like falling water or wind are appropriate. Sounds produced by human activities, including mechanical and electronic devices, recreational activities, transportation systems, and pets are inappropriate. In management planning, property managers should identify the natural soundscape of key areas of the property and work to eliminate, mitigate, or minimize inappropriate noise sources. In general, visitor tolerance for noise is greater in areas of high human activity than in lesser developed areas.

In some instances, sources of noise may not be located within the property and may lie with property neighbors or outside entities (tour providers, airports, businesses, etc.). Property managers should attempt, when feasible, to constructively engage those responsible in order to attempt to reduce these noise sources.

Lightscape Management: The natural lightscape of a property comprises the resources and values that exist in the absence of human-caused light. The absence of light in caves and deep bodies of water, for example, influences biological processes. Visibility of stars, planets, and the moon influence humans and many other species of animals such as birds that navigate by the stars or prey species that reduce their activities during moonlit nights.

Recognizing the importance of these natural processes, properties should protect natural darkness and other components of the property's natural lightscape. Property staff should seek the cooperation of visitors, neighbors, and local governments to prevent or minimize the intrusion of artificial light into the night skies surrounding the property. Managers should:

- restrict the use of artificial lighting in properties to those areas where security, basic human safety, and specific cultural resource requirements must be met
- use minimal impact lighting techniques
- shield the use of artificial lighting where necessary to prevent the disruption of the night sky, natural cave processes, physiological processes of living organisms, and similar natural processes

Forested Lands Management: Since the management of forested lands often presents challenges related to visitor perceptions and aesthetic conditions, the Parks Management Team has developed specific guidance related to that topic. Managers should consult the *Recreation Operations Handbook* for detailed information.

Cultural Resource Management: Section 44.40 of Wisconsin State Statutes says that "each state agency shall consider whether any proposed action of the state agency will affect any historic property" and directs each agency to cooperate with the Wisconsin Historical Society in its efforts to identify and protect the State's cultural resources. In Wisconsin, archaeological and historic sites include prehistoric villages and burial areas, fur trade era sites, sunken vessels, farmsteads, mining camps and quarries, WPA-era structures, rock art sites, ferries, and lighthouses. These cultural resources are a very valuable component of most WSPS properties.

Cultural resources are finite and non-renewable resources. Once destroyed, these links to the past cannot be renewed or revived. Today, sites throughout Wisconsin are being destroyed by land development, inappropriate land management practices, erosion, looting, and even by well-intentioned scientific research (e.g., archaeological excavation). Thus, cultural resources found on public lands, including WSPS properties, are critically important in providing opportunities for future study and public appreciation.

These sites are unique because individually they represent the tangible remains of events that occurred at a specific time and place. While they reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. Sites can be understood properly only in relation to their natural surroundings and the activities of inhabitants of other sites. Managers must be aware of this "systemic" character of historic and archaeological sites. Also, it should be recognized that archaeological sites are time capsules for more than cultural history; they preserve traces of past biotic communities, climate, and other elements of the environment that may be of interest to other scientific disciplines.

In protecting cultural resources, property managers must also be aware that the significance of sites, particularly archaeological ones, comes not only from individual artifacts, but equally from the spatial

arrangement of those artifacts in relation to one another and within the soil layers. Important information is lost if the “context” of archaeological objects is destroyed. The artifacts themselves can be recovered even after a site is heavily disturbed, but the context -- the vertical and horizontal relationships -- cannot. Historic structures also contain a wealth of cultural data that can be lost if appropriate maintenance, restoration, or rehabilitation procedures are not implemented.

In managing cultural resources, properties should:

- collaborate with federal and state agencies, local and tribal governments, and private organizations and individuals to conduct and maintain a comprehensive inventory of property cultural resources
- cooperate with federal and state agencies, local and tribal governments, and organizations and individuals to ensure that cultural resources are taken into consideration at all levels of property planning and development
- as appropriate, interpret cultural resources to foster visitor appreciation of Wisconsin history and culture

In the event that a historic structure is to be demolished or substantially altered, property managers should take steps to determine that no feasible and prudent alternative to the proposed demolition or alteration exists. Where no alternative exists, they should take steps either to avoid or mitigate the adverse effects, or to undertake an appropriate archaeological salvage excavation or other recovery action to document the property as it existed prior to demolition or alteration.

Determining a management policy for archaeological and historic sites within a WSPS depends upon a detailed evaluation of the characteristics and conditions of the individual sites and groups of sites within that property. This includes an interpretation of the significance (or potential significance) of these sites, in terms of social and political factors, as well as environmental factors. For historic structures, architectural significance must be considered, as well as any associated historic landscapes.

Specifically, in managing cultural resources, the following general management concepts apply:

- Property managers should coordinate all planned activities involving known archaeological or historic sites closely with the WDNR archaeologist in order to prevent any disturbance.
- In cases where the presence of cultural sites is not known, property managers undertaking a project that may result in impact to archeological resources will coordinate all survey work with the WDNR archaeologist, in compliance with WDNR Manual code 1446.
- In the event that a culturally significant site is found on a WSPS property, the property manager will immediately report the finding to the WDNR archaeologist; discovery of a burial site or human remains necessitate the involvement of local law enforcement and the Wisconsin Historical Society’s Burial Sites Preservation Program (800-342-7834).
- Looting, destruction, or disturbance of cultural sites, particularly as related to human burial sites, is a violation of state statute and grounds for law enforcement action.
- Historic structures should be used for their historic purpose or placed in a new use that requires minimal change to the characteristics of the building, its site, and environment.

- The character of a historic feature should be retained and preserved; removal of historic materials or alterations of characteristic features should be avoided.
- Most properties and structures change over time; those changes that have acquired historic significance in their own right should be retained and preserved.
- Deteriorated historic features should be repaired rather than replaced; where severe deterioration requires replacement of a distinctive feature, the new feature should match the old in design, color, texture, and other visual qualities and, where possible, materials.

Mounds Management: Because many WSPS properties contain significant Native American mounds sites, the Department has developed specific guidance for protecting and managing these valuable cultural sites. For more detailed information, see the Wisconsin Department of Natural Resources Burial, Earthworks, and Mounds Preservation Policy and Plan located on the Division of Lands intranet site at <<http://intranet.dnr.state.wi.us/int/land/div/policies.htm>>.

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