



Black Hawk Island Hike

Program Purpose:

Students will learn Wisconsin's natural and cultural history through hands-on exploration of Upham Woods' 210-acre State Natural Area.

Length of Program: 2-3 hours

Ages: Kindergarten-Adult

Maximum Number of Participants: 42 on the barge;
20 people per naturalist

Objectives:

- Teach basic paddling skills and have team of students successfully paddle across river on barge.
- Describe cultural history timeline of Black Hawk Island and Wisconsin from 1800-present day.
- Discuss the natural history of the island with reference to 5-8th grade academic standards.

Preparation:

Before the class arrives,

- Check water flow level posted outside first aid room in welcome center.
- Unlock the boathouse, barge, and safety launch.
- Gather pictures and other teaching materials.
- Choose your hike route and topics based on student's grade level and group preferences.

Materials:

Naturalist Backpack:

- Laminated photos taken by H.H. Bennett
- 2 Nature Bandanas – scat and footprints
- Flashlight for caves
- First Aid Kit
- Cell phone and radio

Optional teaching materials:

- Field guides
- Web-of-Life cards and ball of yarn
- Bug boxes or magnifying glasses for log rolling
- Blindfolds for Meet-a-Tree
- Nature journals and pencils
- Natural objects to hide on trail

Background:

Black Hawk Island, a designated Wisconsin State Natural Area, is one of the greatest resources at Upham Woods. The Island provides 210 acres of protected wildlife habitat, sandstone caves, and historic sites. Hikes may be designed around special topics, locations of interest, and naturalists' personal styles. The

following is a collection of background information that may be helpful for planning Black Hawk Island Hikes.

Cultural History (Chronological):

- *Native Americans of South-Central Wisconsin*
Native people have inhabited the Dells area for more than 2,000 years. Many tribes have played a considerable part in the history of the Dells. The Menominee and Ho-Chunk (Winnebago), played significant roles in the Wisconsin fur trade. The Sauk Indians left their legacy in the area during the Black Hawk War.

- *Chief Black Hawk, 1775-1838*

In 1832, Chief Black Hawk led the Sauk Indians in a fight to regain their ceded lands. Forced to move to Iowa, Black Hawk and his band of braves and their families re-crossed the Mississippi defying government orders. Black Hawk's band was pursued by the U.S. army, state militia, and their Winnebago allies in a flight northward through the Wisconsin wilderness.

Although unlikely true, legend suggests that Black Hawk was found in a cave on Black Hawk Island and made a magnificent 52-foot leap on horseback across the Narrows of the Wisconsin River before being captured by two Winnebago leaders, Chaetar and One-eyed Decorah. A report by the Indian Agent to whom Black Hawk was delivered stated that "the Black Hawk was taken about 40 miles above the Portage, on the Wisconsin River near a place called the Dalle." Others believe he was captured near Tomah, 46 miles from the Dells, but speculation continues.

*Please See Appendix A for more information.

- *Logging in Wisconsin 1831-1890*

As various Indian tribes ceded their lands on the Upper Wisconsin River to the Europeans, the Midwest and Western Plains were settled and the demand for lumber for homes, barns, and businesses increased. Lumbering became the state's leading industry. White pine was the first timber considered for commercial cutting because it dominated the landscape and would float down the river when freshly cut. In 1852, a Wisconsin Representative told Congress that "there are indeterminate forests of pine, sufficient to supply all the wants of the citizens for all time to come." Fifty years later, however, nearly all the pines had been clear-cut and large-scale logging had disappeared.

The Wisconsin River was a great waterway to float rafts to market, but there were three main impediments: wicked rapids at Grand Rapids; rapids within the high rocky banks of the Narrows and the right angle turn at Devil's Elbow; and a dangerous passage over or through the dam at Kilbourn City. Raftsmen were tough and strong. Pilots often made several trips earning as much as \$1,000 in one season.

Many of the local people in the Dells were able to pirate free lumber floating in the river after a raft was broken up. By law, loose lumber was still the property of the mill owners for one year, but it was usually a question of who got to the abandoned lumber first. Many houses in the area were built from this abandoned or lost lumber. Therefore, due to the piracy that occurred there, the Lower Dells dock area became known as Pirates Eddy.

H.H. Bennett was fascinated by the raftsmen's way of life and used his stop-action camera to capture their lives on film. Many of his photographs can be seen in the Lodge at Upham Woods.

*Please refer to the *Life of a Logger* lesson plan for more information about the logging industry in Wisconsin.

- *The Narrows and Devil's Elbow*

The Narrows is a two-mile-long gorge on the Wisconsin River. During the lumber industry's heyday, raftsmen would tie up their fleets above the Narrows and run individual rafts through this dangerous stretch of rapids. It usually took two or three days to get a fleet through the narrows due to several dangerous rocks, a right-angle turn at Devil's Elbow, and water velocities as high as 15 mph.

Many rafts broke up in the Narrows and the raftsmen had to be nimble and quick to run on the lumber and get the rafts back together. Many men were thrown into the river and lost their lives to the vortex of the rapids and the irregular slippery cliffs that were nearly impossible to climb. Many say that raftsmen would hang the boots of a fallen comrade in a tree on Black Hawk Island to honor his memory. A picture of the rafts and rapids can be found in the naturalist backpack.

- *Robert V. Allen and The Dell House*

In 1838, shortly after the Ho-Chunk ceded their lands, Robert Allen, Amasa Wilson, and C.B. Smith set out from Illinois to find their fortune in the Dells. They built a crude cabin on Black Hawk Island and clear-cut the pines to be floated down river to markets on the Mississippi in the spring of 1839. After the prime timber was logged, Allen was the only one of the group to remain, becoming the first white settler north of Portage.

Familiar with the needs of the lumbermen beginning to run rafts down river, Allen decided to use his cabin to

provide a place for the men to eat, drink, sleep and amuse themselves after the difficult trip through the narrows. He opened an inn called the Dell House that offered food, lodging, gambling, and women for entertainment. By the early 1850's, his simple shack was enlarged into a three-story structure with a plastered fireplace on the ground floor.

Allen also operated a busy ferry across the Wisconsin River until he and a partner gained a charter to construct the first bridge across the Wisconsin at the Narrows. Allen, who never married and was known throughout the Dells as the man with a thick black beard who wore heavy black boots, sold the Dell House in 1879 as logging ceased and business dwindled. In 1899, the Dell House was destroyed by a fire set by vandals, but ghost stories continue to be told about the sounds and lights of the Dell House. The remaining root cellar can be found by following the sign at the bend in the stagecoach trail until you reach a beach where the river opens up. What remains of the Dell House structure itself was buried under water when the hydroelectric dam caused the river to rise. In the summer, students have the opportunity to dig for archeological remains at the site of the old Dell House. A picture of the Dell House can be found in the naturalist backpack.

- *Schuyler Gates 1805-1869*

Schuyler Gates arrived at the Dells in 1849 and quickly acquired the land on the east bank where Allen and his partner Hugh MacFarlane were planning to build the first bridge across the Wisconsin River. Gates had worked on the Erie Canal and helped to build a canal railroad in Pennsylvania. Therefore, with the help of his son Leroy, Gates designed, constructed, and financed the 53-foot pine bridge to completion in 1850. The bridge not only became a busy thoroughfare for those traveling to western Wisconsin and Minnesota, but also became a popular spot from which to watch the lumber rafts. In 1866 the river flooded, washing out the Dells Bridge. By that time, however, most of the traffic had moved to the more conveniently located toll-free bridge that the railroad had constructed at Kilbourn in 1857. Some say that the bridge connected to the Stagecoach Trail, which brought coaches and travelers to the Dell House. A picture of the original Gates Bridge can be found in the naturalist backpack.

- *Leroy Gates*

Perhaps inspired by the presence of a captive audience on the Gates Bridge, Leroy Gates began to pilot river rafts and give guided tours to visitors of the Dells for the price of \$2.00. Gates can be credited with inaugurating the Dells' tradition of aggressive advertising with his self-promoting declaration that he was "Leroy Gates, Dells & River Pilot from 1849 to 58" which was carved into the rock near Devil's Elbow. This carving was

probably the first in a long line of outdoor ads or billboards at the Dells.

Gates was a flamboyant character, who bragged that he would pilot a raft through the narrows in his full dress suit. Many were on hand to see the raft break up, Leroy lose his footing, and get dumped in the river. Gates also advertised a pleasure boat for sight-seers who wished to “penetrate and descry the numerous and occult caves of the Dells” where “depressed spirits can be alleviated, gloom and melancholy soon be dispelled and the mind become greatly invigorated.”

In 1860, Leroy became a portrait photographer, but only five years later sold the portrait studio to Henry H. Bennett in order to enter the hops market. Within a few years, infestation of the hops vines sent a severe economic blow to Gates around the same time Leroy’s father was murdered.

- *H.H. Bennett 1843-1908*

Henry H. Bennett, a carpenter and Civil War soldier, returned to the Dells in 1865 with a wounded right hand and an interest in photography. After purchasing the portrait studio of Leroy Gates, H.H. Bennett began to spend his time taking stereoscopic views of the distinctive Dells scenery and became responsible for naming a number of the rock formations in the Dells. As Bennett’s affordable photos were circulated, many visitors began to arrive by train to see the Dells for themselves. Bennett played a large role in the tourist industry by showing lantern slide shows in the evenings and photographing steamboat passengers for souvenirs.

By 1886, Bennett perfected the instantaneous shutter and could take stop-action photographs. He was able to join a rafting company to photograph all aspects of the raftmen’s lives and captured his son, Ashley, jumping over to Stand Rock. The studio that H.H. Bennett founded has been continuously owned and operated by successive generations of his family. It is the oldest family-owned photographic studio in the United States. Many of H.H. Bennett’s photographs can be found in the naturalist backpacks and in the Lodge.

*A visit to the H.H. Bennett studio in Wisconsin Dells is a wonderful field trip.

- *The Wisconsin “Dells”*

Although the Wisconsin Dells (“Dalles” in French) were used by French explorers as geographical reference points as early as the 1700s, the first city, Kilbourn City was founded with the arrival of the railroad in 1857. Although the city was named after the railroads’ president, locals never stopped referring to the town as the “Dells” and the name was officially changed to the Wisconsin Dells in 1931. The word *Dells* comes from the French word *dalles*, meaning a rough or narrow

passage or the rapids of a river that runs between the steep precipices of a gorge or narrow valley.

- *Snider Homestead*

The Homestead Act, passed in 1862, stated that any head of household who was at least 21 years of age could claim a 160 acre parcel of land and gain ownership after building a home and working the land for five years. After the island was cleared by the Robert Allen, the Snider family settled on the island’s sandy soil and attempted to farm for an unknown number of years. The site of the Snider family homestead and remaining root cellar are located on the left side of the Overland trail beyond the barge landing. A picture of the family taken by H.H. Bennett in 1891 is hanging in the lodge and can be found in the naturalist backpack.

- *The Kilbourn Dam*

Known as the most dangerous dam on the Wisconsin River, the dam at Kilbourn City was built in 1855 and underwent a series of modifications and reconstructions until 1897. Originally slated to be built in Newport, the location and building of the dam was surrounded by intrigue, violence and financial misdeeds. Due to the location of the Milwaukee and La Crosse railroads, a site was chosen in Kilbourn City where the river was 350 feet across and 15 feet deep. Construction in these conditions was a formidable task for men working with draft animals and hand tools. The dam would power a mill and by law had a 60-foot wide chute to allow lumber rafts to pass over the drop without damage. Although the chute was built to make up for the hazard that the dam created, many raftsmen lost their lives and the dam was soon lowered. Battles continued as lumber companies lost lives and lumber to the dam.

At the turn of the 20th century, the river that had carried lumber rafts and powered sawmills was transformed into a generator of electric power. A proposal for a 17 foot high dam that would flood the rapids and raise water levels was met with opposition. Many opposed the dam because properties would be flooded, navigation of the area would be limited, and the beauty of the Dells would be threatened. The strongest opposition came from a handful of individuals including H.H. Bennett who wished to turn the Dells into a state park. However, the promise of jobs and profits from the hydropower dam won out and work began on the dam in 1906. Upon completion of the dam in 1909 the Wisconsin River rose 15-17 feet in the Upper Dells region burying the rapids and carving a new channel around Black Hawk Island. Though many take for granted that there has always been a dam in Kilbourn, during the 47 year period prior to 1906, Kilbourn had a working dam for only 11 years. A picture of the dam can be found in the naturalist backpack.

- *The Upham Family*

Horace Upham, a prominent Milwaukee lawyer, arrived in the Dells and purchased the island and surrounding mainland for a summer retreat in 1905. Upham played an important role in the turmoil surrounding the hydropower dam and his daughters played an important role in the Dells conservation. In 1941, Elizabeth and Caroline Upham donated Black Hawk Island and the surrounding mainland to the University of Wisconsin to be preserved in its natural state and used as a classroom and laboratory. The Upham's home at Wawbeek was donated to Easter Seals as a respite camp for children with disabilities. *Mrs. Upham and Caroline Upham can be seen outside the Dell House in the H.H. Bennett photograph.

- *Upham Woods 4-H Environmental Education Center*

Upham Woods is a place where people gather to explore and experience the natural world. Early on, programs with Ranger Mac and Marvin Hanson introduced 4-H and school groups to the unique geology and forest communities of the area. Today Upham Woods is a residential environmental education center which presents natural and cultural history programs to school and 4-H groups throughout Wisconsin.

Natural History:

Black Hawk Island is home to a number of different forest communities. These communities contain a variety of wildflowers, ferns, mushrooms, geological anomalies, and a great deal of wildlife. The following is a short description of some of the natural items found on the island. Please make use of teachable moments and take time to explore the island on your own to discover other plants, animals, mushrooms, and interesting geological formations.

- *Geological History of the Island*

During the Cambrian Era, nearly 570 million years ago, Wisconsin was covered by a shallow sea. With time and great pressure, deposits of sand and silicates on the floor of this sea became sedimentary sandstone rock formations. This sandstone is called Eau Claire or Potsdam sandstone and is only found in Eastern Europe and the Dells region. Research concerning the angle of repose of today's sand dunes explains the cross-bedding or diagonal layers of rock that occurred in the shallow sea during the Cambrian Era. During dry spells, great winds caused the sand to form dunes which were then covered by the sea and pressurized into rock. This rock was later uplifted to form the bedrock of the Dells.

Between 2 million and 15,000 years ago Pleistocene glaciers covered and receded over much of Wisconsin. The Wisconsin Dells are situated in the driftless area, an unglaciated lobe which was untouched by the fields of ice. As the glaciers receded, glacial Lake Wisconsin

formed and covered most of Wisconsin to the north and west of the Dells. The receding glacial ice and debris created a levee that blocked the lake water from flowing down the Wisconsin River. However, when the levee eventually gave way, the lake rapidly drained down river cutting valleys, gulches, and canyons into the soft sandstone rock in a matter of days. In addition, this catastrophic flow of water left the area with shallow sandy soils very close to bedrock. Today, many caves are continually forming due to wind and rain erosion of the sandstone.

- *Physical changes to the Wisconsin River*

The original channel of the Wisconsin River has changed several times over the years. It once flowed between Upham Woods and the land that now forms Black Hawk Island. In the mid-1800's, the constant flow of water and construction of a dam began to change the landscape creating a new main channel between Devil's Elbow and the Dell House, turning the old channel into a series of ponds. However, the completion of the Kilbourn dam caused the river to completely surround the land filling in the ponds and creating what is now Black Hawk Island. Upham Woods is now located on an old channel of the Wisconsin River, while the east side of Black Hawk Island runs along the new main channel.

*Laminated maps are available in the Black Hawk Island folder.

- *Forest Layers*

Forest layering is the stratification of green leaves into vertical layers. These layers allow a diversity of plant forms to exist within one habitat. Each layer provides food and shelter for a variety of animal species, each of which depends on that layer for survival. Older forests exhibit all 5 layers.

- Canopy: The crowns of the tallest, oldest trees.
- Understory: Smaller tree species and younger trees.
- Shrub: Small woody plants like bushes and vines.
- Herb: Ferns and wildflowers
- Litter (or Duff): Decomposing leaves and wood above topsoil.

- *Forest Succession*

Ecological communities flourish or perish depending on their environmental conditions. If these conditions change, the types of plants and animals that make up the community may also change through a process called succession. The plant community of Black Hawk Island is a great example of ecological or forest succession. The variation in tree ages can be accounted for by past disturbances and varied periods of regeneration. As the island's resources were harvested during the height of the logging industry, oaks were given the opportunity to germinate in the open sunlight. Soon, however, shade-tolerant white pines and mixed hardwoods began to grow beneath the canopy of oak leaves. As the pines began to

take over and the oaks slowly fall and decompose, hard maples became the dominant under story tree. Changes in the forest will continue until a climax community is established. Climax communities are those communities of plants, animals, fungi, etc. that will be able to replace themselves with new generations of the same species.

- Biotic Communities of Black Hawk Island –

Hemlock Relict Forest: Stands are associated with Cambrian sandstone cliffs with eastern or northern exposure and typically include white pine, yellow birch and sugar maple.

Southern Dry-Mesic Forest: Hardwood forest community dominated by red and white oaks but also including basswood, red maple, black cherry, big tooth aspen and bitternut hickory. Stands increase community diversity and provide habitat for many native species not associated with conifer forests.

Northern Dry-Mesic Forest: White and red pine with red and white oak. Understory is red maple, black cherry and big tooth aspen.

Cliff Communities: Exposures of Cambrian sandstone are found in the steep-sided gorges flanking the Wisconsin River. Ferns, mosses, and lichens cover the moist rock faces and the cliffs provide nesting habitat for rough-winged swallows and eastern phoebes. Dry cliffs characteristically support common polypody, rock cress, harebell, rusty woodsia, and smooth cliffbrake.

- *Impacts of Deer Population on Black Hawk Island -* In 1985, two deer exclosures were built to measure the impacts of the deer population on the forest communities of Black Hawk Island. Due to large populations of deer and lack of predators, the majority of understory plants are consumed by deer and new growth is extremely limited across the island. During a study conducted in 1996, researchers found 44 species of plants inside the ex-closures that were not found in unprotected areas. In an effort to control the impacts of the deer population, controlled hunting on the island began in 1996 and continues to this day. However, under story growth remains limited and continues to be over-browsed.

- *Plants of Black Hawk Island -* Plants are scientifically divided into two major categories: *angiosperms* and *gymnosperms*.

Angiosperms are flowering plants and their seeds are encased in a protective ovary or fruit. Broadleaf trees such as the maple and oak are angiosperms.

Gymnosperms, on the other hand, do not produce flowers. Their seeds have structures such as cones,

rather than a protective ovary or fruit. Conifers (needle-leaf trees) are a major group of gymnosperms.

Trees can be divided into *deciduous* and *coniferous* categories. **Deciduous** trees are also known as broadleaf trees because the leaves are generally larger and wider than those of conifers. The larger leaf size means a greater surface area for photosynthesis, but it also means the leaf is too fragile to withstand winter conditions. Therefore, most deciduous trees drop their leaves in autumn. **Coniferous** trees keep their leaves throughout the year, shedding only the oldest leaves. Usually these leaves are lower down on the tree and do not receive as much sunlight as newly developed leaves higher up. Some of the best-known members of the conifer family are pines, spruces, firs, and hemlocks. The cones of the conifers are its flowers.

Trees you can find on Black Hawk Island:

White Pine – Bundles of 5 needles.

W-H-I-T-E has 5 letters.

White bark compared to other pines.

Shade tolerant, prefers well-drained soil and cool, humid climates.

Tallest tree in eastern North America

Red Pine – Bundles of 2 needles.

Orange-red bark in upper crown of tree

Shade intolerant, prefers windy well-drained soil.

Hemlock – Usually does not grow in southern Wisconsin.

Grows in cool wet soil on north side of island.

Oaks - Creates cause thick layer of leaf litter.

Often found with leaves remaining in winter, referred to as marcescence.

Maples - Sugar, silver, and red.

*Please see Appendix B and Tree I.D. lesson plan for more information concerning tree and plant identification on the Island.

Natural History Topics:

The following is a collection of interesting facts and definitions that may be useful to discuss during Black Hawk Island hikes. Many topics are related to other Upham Woods programs and hikes could be a great resource for repetition and assessment of knowledge.

- *The Balance of Nature – Food Chains and Webs:* A community of living things may contain hundreds or even thousands of different species. Each species is usually involved in several different food chains. Therefore, different food chains often interconnect to form a large network, called a food web. In a food chain, each species occupies a certain position in the chain.

This position is called a *trophic level*. The number of trophic levels is the same as the number of species in the food chain and the same species may occupy different trophic levels in different food chains.

A **Producer** is an *autotroph*, which means that it can make its own food. Producers form the first trophic level of a food chain, because they make the food that supports the other species in the chain. Green plants are the most important producers because they harness the sun's energy to make food by photosynthesis.

Consumers are *heterotrophs*, or living things that cannot make their own food. They survive by taking in food that has been made by other living things. A food chain contains several kinds of consumers, each of which occupies a different trophic level.

Decomposers, or *saprotrophs*, are a vital part of the food web. During the process of decay, they break down the organic compounds in dead things and release their raw materials back into the environment. Bacteria and fungi are the most important decomposers.

- *Ecosystems and Niches:*

Every living thing, plant or animal, fills a niche within the ecological community. A **niche** is the function or job that a plant or animal performs in the ecosystem. For example, one bat niche may be controlling flying insect populations, while another is providing prey for snakes, raccoons and owls. Every niche is interconnected, forming a complex system of interrelationships between all living and nonliving things called an **ecosystem**.

Ecology is the study of these interrelationships between plants and animals in their ecosystem.

- *Adaptations:*

All plants and animals have adaptations which allow them to survive and play a role in the environment. An **adaptation** is a physical characteristic (something an animal has) or behavior (something an animal does), which helps a plant or animal survive in its environment. Different plants and animals have different adaptations that allow us to easily identify different species.

- *Natural Cycles:*

Nutrient Cycle: All living things depend on the sun for energy, on plants for oxygen production, and on the soil for food. Plants obtain many nutrients from the soil in which they grow and animals get nutrients from eating plants or animals which have eaten plants. Nutrients cycle through the environment and return to the soil – nature's recycling center.

Water Cycle: The water cycle is the continuous circulation of water on our planet.

*See Water Cycle Lesson Plan for more information.

Energy Cycle: Plants collect water, sunlight, and carbon dioxide from their habitat and transform it into food through a process called photosynthesis. Energy from the sun fuels carbon dioxide and water inside the plant to make glucose (sugar) and releases water and oxygen.

- *Natural Resources and Habitats:*

The survival of plants, animals, and humans depends on the availability and arrangement of resources in their habitat. Plant, animal, and human **habitats** include *food, water, shelter, and space*. In addition, these things need to be available in a suitable arrangement or in a way that meets the animals' needs. If any of the components of a habitat are missing or the arrangement is affected, the animal will be impacted.

Different species often compete with each other for resources and habitat components. A **population** is a group of species living in the same area. A healthy population will increase in size until a **limiting factor** causes a change in population size. Habitat components are the most fundamental of limiting factors because a given habitat can only support a certain number of animals of one species. This number is called the **carrying capacity** of the area and is the point at which cycles in population size become level. Carrying capacity is kept in balance by limiting factors (habitat components and predator/prey relationships).

Humans are very much a part of nature and have the same habitat needs as other species. Humans also depend on plants and animals to meet their needs. We often do not realize that everything that we have comes from the natural world and that we should be careful with the Earth's resources. Some resources such as plants and crops are renewable. **Renewable resources** can be replenished naturally or through management. **Non-renewable resources** cannot be regenerated. We must learn to use natural resources conservatively and understand that we too are subject to carrying capacity and limiting factors.

*See Habitat is a Home lesson plan for more information and activities.

Sample Hike for 5th Graders:

- I. Introduction, Instructions, and Equipment (5 min)
- II. Barge Crossing (10-20 min)
- III. Hike (1-2 ½ hours)
- IV. Barge Crossing (10-20 min)
- V. Equipment Cleanup (5 min)

The following is a sample hike for 5th grade students covering the basics of the Black Hawk Island Hike and some suggested questions. This is one example of many

different routes, topics, and styles. Please feel free to develop your own route, topics, and teaching materials.

*Please refer to Appendix C for a map of the trails on the island.

I. Introduction, Instructions, and Equipment (5 min):

After gathering your naturalist backpack and desired teaching materials, arrive at the boat house a few minutes early to unlock the barge and boathouse. **Be sure to unlock the safety boat and place the lifesaving tube in the barge.** When the students arrive, introduce yourself and explain that the students will be paddling across the Wisconsin River to hike on Black Hawk Island. Explain the need for lifejackets and hand out the appropriate sizes to all students and adults. Make sure all lifejackets are secure and snug. Although the barge can hold 42 passengers, only 14-16 can paddle at one time. Pass out paddles and divide the paddlers into two groups, 7 or 8 on each side of the barge. Be sure to instruct students to place paddles on toes, not on the blacktop because they can chip or crack. Paddlers should slowly enter the barge and sit on the outside benches. The rest of the group may then enter and fill in the middle benches.

II. Barge Crossing (10-20 min):

Before leaving the dock, instruct the paddlers on how to hold the paddle. Describe how to paddle, back paddle, and rudder. Point out the front of the barge (the **bow**) where you are standing and the back of the barge (the **stern**). It helps to give each side a name (i.e. left side (**port**) and right side (**starboard**) or peanut butter and jelly or their favorite endangered species). You will be standing on the wooden boards at the front of the barge acting as a lifeguard and captain (the barge will need to be turned around so that the tire bumpers hit the dock on the opposite shore). As you give the paddlers directions toward the dock, be aware of snags and large stumps sticking out of the water. Depending on the river current and strength of the crew, the crossing can take from 10-20 minutes. **If water flow level reaches 12,000 cfs or above, the hike will be canceled.**

When you reach the dock, instruct everyone to remain seated with their lifejackets on until the barge is safely tied to the landing. Instruct the middle passengers to exit and clip their lifejackets to the barge landing railings so as not to blow away. Then instruct the paddlers to place their paddles gently across the barge onto the center board and follow the other passengers onto the landing.

III. Hike (2 ½ hours):

Route: Barge landing to Overland Trail/Homestead, Overland trail to Hemlock forest and caves, Narrows trail to Deer Enclosure and Devil's Elbow, Stagecoach trail to Dell House, and Moccasin Flower trail to Barge Landing.

A. Barge Landing

After the equipment is safely stored and groups are divided, gather all of the hikers near the large Black Hawk Island map. Welcome the group and give a brief history of the island. Discuss how the Upham sisters donated the land to the University of Wisconsin with the request that this area remain natural without development and educate students about nature. Ask the students how they can help to protect the island and discuss the rules they should follow during the hike (i.e. remain on trails, do not litter, stay behind their leader, remain quiet etc.) Allow time for questions/comments before departing on your journey.

“Take only memories and photos, and leave only footprints.”

B. Allen Spring Gulch

As you begin to lead your group on the boardwalk up the Overland trail, you will reach an interesting undercut ledge.

Challenge the students to become detectives and solve the many mysteries of the island, both natural and cultural. Look for clues of animals and evidence of changes in the landscape. For example, the undercut ledge:

*What kind of rock is it? (Sedimentary, sandstone)
What caused it to form? (Erosion by water and wind)
What could it be used for? (Shelter)
What living things use these rocky ledges? (Animals, ferns, moss, etc.)*

After exploring the ledge, continue along the boardwalk. You may find a number of ferns in the shady moist gulch including polypody, maidenhair, or lady fern.

How are these plants different from flowers? (They do not flower but have fruiting bodies which spread spores.)

You may also find lichen on the rock ledge.
Is it a moss, a fungus? (It is a symbiotic relationship between a fungus and algae.)

When you reach the top of the boardwalk, ask the students why the boardwalk was built even though the Upham Sisters wanted to keep the land undeveloped. Discuss the erosion problems on the island and explain that any man-made object on the island was built to control erosion and maintain trails.

C. Snider Homestead

What is a homestead? Discuss the Homestead Act of 1862 and show the photo of the Snider family. Imagine that the logging has ended, the trees have been cut. *What did people do with this cleared land?* Look for clues that a family once lived and farmed here. For example, the

remains of a root cellar is evidence of an old-fashioned refrigerator.

Why did the Snider family stop farming this land? (Poor sandy soils are bad for crops but perfect for pines and oaks.)

The giant white pine is a great place to talk about the age of the trees. This stood witness to the logging and farming and eventual reforestation of the island. *How did this tree survive the logging? (too small)*

D. Fallen Tree across trail

This is a great stop for discussing the role of decomposers in the nutrient cycle and food web. Notice the shelf fungus on the fallen tree and the manmade chainsaw marks. While a chainsaw could not clear the trail, over time mushrooms will eventually do the job by turning the wood into fertile soil.

Even though this tree is dead, what are some signs that this log is still full of life? (Fungi, insect holes, moss)

As you continue the hike, challenge the students to look for other fungi. *What would happen to the island if there were no mushrooms?*

Optional activity: Web-of-Life

With students in a circle, assign each student a *Web of Life* card. The cards represent natural resources and plants and animals found at Upham Woods. Give the ball of yarn to the student who is the Sun. Ask him/her to pass the ball of yarn to someone who relies on the sun for energy. The ball is then passed to a Plant while the Sun continues to hold onto the yarn. Continue to pass the ball of yarn around the circle until all students are connected to the yarn, forming the *Web of Life*. Once the web is built, ask the Tree to tug on their piece of yarn simulating logging on Black Hawk Island. Anyone who feels the tug is directly impacted by the tree's niche. Ask those students to explain their connection to the tree. Now ask those students to also tug the yarn. Repeat this process until everyone is tugging at the web. The object of the game is to simulate natural balances in the ecosystem and emphasize the importance of niches and interrelationships. Note that any component of the web can be altered to demonstrate an unstable ecosystem.

Optional Activity: Log Rolling (See Stage Coach Trail)

E. Clearing in Forest – Site of Tornado

What natural event caused this forest clearing? A tornado touched down on the island in 1995, leaving a gap in the canopy. How is this clearing different from the surrounding forest? (More light, grass, smaller trees) Discuss forest succession and layers in the forest.

F. Indian Valley and Hemlock Relic

Before heading down the hill towards the cave, discuss forest communities. Look back at the dry-mesic forest made up of oaks, maples and pines, which prefer dry soils and sun. *How does the forest change?* The north side of the island is dominated by hemlock trees, which require cool, moist and shady soils. This is a great spot to talk about the differences between deciduous trees and conifers. As you descend into the valley, ask the students if they notice the temperature change.

G. Upham Cave

How were these sandstone walls formed? Describe the geological timeline. Go back 570 million years to a shallow sea and the layered formation of sedimentary sandstone. Jump forward in time to 15,000 years ago and the formation of Glacial Lake Wisconsin. Imagine this lake draining in a matter of days. Last week you would have been swimming, and this week you are surrounded by carved rocks and caves. These rock walls are called the *Dells* and have attracted tourists for over a hundred years.

Why are trees able to grow out of this rock? (Sandstone is porous and soft.) This sandstone is called Eau Claire or Potsdam sandstone, which is only found here and in Eastern Europe. Pass around a piece of sandstone. *Would this rock make for good rock climbing?* Discuss the rules of the cave and watch out for low-hanging rocks. Allow students to enter the cave with a flashlight, 4-5 students at a time. This cave is a small room with only one entrance.

H. Serpent Cave

Legend has it that Chief Black Hawk hid from the militia in this cave. This is a great time to introduce Black Hawk as the man for which the island is named. Students can crawl through this cave. Warn students that they will get dirty and watch out for Head Banger Rock at the end. *Helpful hint: Wear ball caps backwards.* The cave has two parts with an opening in the middle. Students should not climb overtop of the cave because they may disrupt the fragile ecosystem above and collapse the cave below. Students must continue through the second part to exit the cave or wait for others to pass before returning through the first part of the cave. You will need to stand at the other end of the cave to guide students along the cliff towards the start of the cave. Station another adult at the entrance for returning students.

I. Narrows Trail and Deer Enclosure

You are beginning your hike along the narrowest part of the Wisconsin River. This is a great trail to look for animal signs. Your scat and track bandanas, along with field guides, will allow the students to interpret the signs. The students may even spot some animals along the way.

As you approach the deer enclosure, challenge the students to explain this man-made structure.

*What is the fence used for? (Keep deer out)
Do you notice any differences between the inside and outside of this fenced area? (More plants inside)*

Deer are plant-eating machines, and the island is an all-you-can-eat buffet. During hunting season, deer swim across the river to seek refuge on the island. As a result, Black Hawk Island has lost much of its plant diversity.

How can we control the deer population? (Hunting)

Although we are not allowed to develop the island, we must manage our natural resources and keep a healthy balance in our ecosystem. Discuss the research being conducted on this site and its results that allowed us to permit deer hunting on the island.

J. Devil's Elbow and Black Hawk's Leap

Take a minute to enjoy the view and perhaps watch a tour boat pass by. This was once the most dangerous stretch of the Wisconsin River. Over 150 years ago during the logging of Wisconsin, you would have seen many rafts carrying loads of timber to markets down river. Many raftsmen lost their lives to this river and its treacherous rapids.

Why are there no rapids here today? (Kilbourn dam raised the river 15-17 feet)

Long before European settlers moved to this area, Native Americans called this land home. Discuss Black Hawk's fight to protect his people's land and his legendary leap across the river. *Do you think the legend is true?*

Devil's Elbow is also the site of the 1850 Gates Bridge that connected the two sides of the river along a heavily traveled stagecoach road. Discuss Leroy Gates' roll in bringing tourism to the Dells area with his river raft tours. Pass around H.H. Bennett's photographs and mention his role in attracting tourists to the Dells.

Optional activities: Snack time, Sounds Maps (See Nature Journaling Lesson Plan)

K. Stage Coach Trail

This is an excellent trail to do some log rolling. A demonstration log should be carefully rolled over to reveal the contents below. Use magnifying glasses or bug boxes to examine any critters found. Look for unusual fungi and plant life. You may want to divide your students into smaller groups and assign each group a log to examine. Remind students that they are disturbing one small habitat in the name of science and to treat these logs with respect. Remember to return the

logs to their original positions when finished. Have them report back with their findings.

What role do these log-dwelling animals play in the ecosystem? (food for other animals, helping the log to decompose)

What other signs of life do you see? (fungi, moss)

What will happen to these logs over time? What is their role in the ecosystem? (The dead wood is home to many living things and will decompose over time, becoming fertile soil from which new plants will grow.)

Optional activity: Meet-a-Tree

This is a sensory awareness activity and builds on teamwork and trust. Ask students to find a partner or group of three. Hand out one blindfold to each group and have them decide who will be blindfolded. Point out the game's boundaries so each group is in eyesight of you. Students will carefully lead their blindfolded partners to a tree of their choice, allowing their partners to get to know the tree without using their sense of sight. Returning to where they started, the blindfolded students' sight is now restored and they are challenged to find the trees by memory and sight.

L. Old Dell House Site

Stand on the Dell House beach and enjoy the view of beautiful and wide Wisconsin River. Here stood the infamous Dell House Inn, the party place on the river. Raftsmen spent many days navigating through the Narrows and Devil's Elbow, and found food, rest and entertainment at the Inn. Tell the story of Robert Allen and his ties to Wisconsin logging. Many stories surround the Inn, but the one we can be sure of is its abandonment when logging ended and eventual vandalism.

What signs do you see that the Dell House once stood here? (root cellar and foundation remnants on beach)

Why are the remains of the Dell House underwater? (The Kilbourn Dam)

M. Moccasin Flower Trail

As you head back to the barge landing, you will notice a change in the landscape. The south side of the island is covered by white and red pines and is much drier and warmer than the north side of the island. This trail takes you past a marsh and through a grassy opening filled with many wildflowers. Challenge students to find animal signs along the trail, including signs of beavers. You will also notice many interesting rock formations and fungi, lichen and moss.

Optional activity: Camouflage – Hide some natural objects along the trail for students to find.

N. Conclusion:

At the barge landing, highlight some of the main points covered on the hike, both cultural and natural. Ask students to share one thing they learned or one thing they really enjoyed about Black Hawk Island.

IV. Barge Crossing (10-20 min):

Remember to leave plenty of time to cross the river, this time heading upriver. Select a new group of paddlers for the return trip. Check all passengers for life jackets. Review paddling techniques and have a safe trip back!

V. Equipment Cleanup (5 min):

When you return to the dock on the mainland, ask the passengers and paddlers to remain seated and safely attach the barge to the dock. Unload the barge, ask the paddlers to return their paddles, and have all passengers clip their life jackets and return them to the boathouse. When everything is put away, be sure to lock the boathouse, the barge, the safety boat, and the gate.

Resources:

The following books can be found at the Kilbourn Public Library:

Curry, Ross Milo. *Dells area history and other stories: Volume II*. 1995.

Dells County Historical Society. *Others before you: the History of the Dells Country*. New Past Press, 1995.

Dells County Historical Society. *The Dells: an illustrated history of Wisconsin Dells*. New Past Press, 1999.

Durban, Richard D. *The Wisconsin River: an odyssey through time and space*. Spring Freshet Press, 1997.

H.H. Bennett Studio. *Dells of the Wisconsin River, yesterday and today*. 1978.

Kricher, John and Gordon Morrison. *Peterson Field Guides: Eastern Forests*. 1988.

The following resources can be found in the Upham Woods Library or in the Black Hawk Island Resources Folder:

Biotic Communities of the Wisconsin Dells State Natural Area, provided by Tom Meyer.

Black Hawk Island Hike.

Blackhawk Island Botanical List 1994.

Carlson, Stephan P. and Shan Woeste. *Afield with Ranger Mac: History Hike of Black Hawk Island, Upham Woods*. University of Wisconsin-Extension. 1984.

Clayton, Lee and John W. Attig. *Glacial Lake Wisconsin. Wisconsin Geological and Natural History Survey*. 1989.

Hanson, Marvin C. *Camp Upham Woods - Black Hawk Island Trail Guide*. 1965.

Upham Woods Master Plan. University of Wisconsin-Extension. 1985.

Spotlight on Upham Woods: A Trail Guide.

Appendix A

Wisconsin Native American History

Native American History of South-Central Wisconsin

The Dells area has been inhabited by native people for more than 2,000 years. Many tribes have played a considerable part in the history of the Dells and remain a factor in the economics of the region. Two major Indian tribes, the Menominee and Ho-Chunkgra or Winnebago, played significant roles in the Wisconsin fur trade. The Sauk Indians left their legacy in the area during the Black Hawk War of 1832.

Chief Black Hawk 1775-1838

Black Hawk, a Sauk warrior and Chief, was born at the junction of the Rock and Mississippi Rivers in 1767. According to legend, a black sparrow hawk circled the maternity lodge as he was born giving him his name. Black Hawk fought in the War of 1812 on the British side as a member of the Indian Confederacy led by the Shawnee chief, Tecumseh. However, he felt antagonism toward the Americans as a result of the Sauk-Fox Confederacy land cession in the Treaty of 1804, which unethically ceded the rights to Sauk lands. Black Hawk believed that the representatives of his people were intoxicated during the treaty and refused to accept the claim to their land. In 1830, Black Hawk was given an opportunity to lead his people in an uprising against the Americans. Leadership of the Sauk tribe was contested between the pro-American Chief Keokuk, who complied with orders to abandon lands and Black Hawk, who refused.

However, unequipped to fight, Black Hawk was forced to join the Sauk in Iowa where he formed a relationship with Winnebago leader White Cloud. In April 1832, Black Hawk and his band of braves and their families re-crossed the Mississippi with intentions of planting and harvesting a corn crop. Defying government orders by continuing up the Rock River, Black Hawk had begun his fight with the hope that an Indian Confederacy would form to assist him. The mythical Indian and British support never arrived, and with resistance forming against him, Black Hawk raised a flag of truce, which was quickly violated. Black Hawk's band quickly dispersed the attacking band of volunteers, but was soon pursued by the U.S. army, state militia, and their Winnebago allies in a flight northward through the Wisconsin wilderness to re-cross the Mississippi. At the Battle of Wisconsin Heights, 20 miles south of the Dells,

Black Hawk's men covered his retreat across the Wisconsin River suffering great losses.

Reaching the mouth of the Bad Axe River on August 1, 1832, Black Hawks band was driven back by the arrival of the steamboat, *Warrior*, and Sioux Indians on the opposite shore. Although the Sauk attempted to surrender, they were met with cannon and rifle fire. The following day the pursuing land forces arrived and the Sauk were trapped. Braves, women, and children were massacred and only 150 of Black Hawk's band survived.

Black Hawk was able to escape and fled into the Wisconsin wilderness, pursued by the U.S. Army, state militia, and their Winnebago allies. Black Hawk was captured by two Winnebago leaders, Chaetar and One-eyed Decorah. Decorah not only received \$2,000 for Black Hawks capture but also may have saved his tribe from extinction by resisting an alliance with Black Hawk's band. After a short imprisonment in Virginia and some time in Illinois, Black Hawk was freed and died peaceably in Iowa.

The Ho-Chunkgra

The native people of southern Wisconsin called themselves the Ho-Chunkgra; however the Algonquin Indians accompanying French Voyageur Jean Nicolet named them the Winnebago. They remained the Winnebago in history books until November 1994 when they regained their original name, shortened to Ho-Chunk. Despite their assistance to the Americans in the Black Hawk War, in 1837, they too were coerced into signing a treaty relinquishing their Wisconsin territory including Lake Winnebago and the Fox-Wisconsin portage. Yellow Thunder, an important Ho-Chunk leader, refused to recognize the treaty and despite forced removal to Iowa and Minnesota led many Indian back to the area. Others remained in Nebraska where a second branch of the tribe is found today. In 1849 Yellow Thunder bought forty acres in the Town of Delton, presuming that, as a landowner and taxpayer, he could not be evicted. Thus began the Dells Indian ceremonials available to tourists. In 1873 the government reversed its policy. Although the Ho-Chunk did not receive a reservation in the area, the provisions of the Homestead Act allowed them to claim lands in Adams, Sauk, and Juneau counties.

Resources:

Dictionary of Wisconsin History, Wisconsin Historical Society. <http://www.wisconsinhistory.org/>

Curry, Ross. Dells Area History and other stories, Volume II. Wisconsin Dells, WI. 1995.

Others Before You: The History of the Wisconsin Dells Country. Dells country Historical Society. Wisconsin Dells, WI. New Past Press, Inc. 1995.

Appendix B

Blackhawk Island Botanical List 8/15/94

Exclosure 1 – Fenced off area (1/10 acre) on the White-tailed Trail just off the Overland Trail

Red Maple
Maidenhair fern
Hog peanut
Wild sarsaparilla
Jack-in-the-pulpit
Sapling staged ash
Large leaved aster
Pennsylvania sedge
Ironwood
Blue cohosh
Yellowbud Hickory
Enchanter's nightshade
Dogwood
Honewort
Point-Leaved tick trefoil
Fern
Bedstraw
Wild Geranium
Witch-hazel
Spotted St. John's Wort
Canada Mayflower
Partridgeberry
Indian pipes
Interrupted fern
Wood sorrel
Panicum grass
Woodbine
White Pine
Smooth Solomon's Seal
White Lettuce
Bracken fern
Red Oak
Red Oak
Raspberry
Bristly greenbrier
Rosy twisted stalk
Basswood
Elm seedling
Wild oat
Yellow Violet

Exclosure 2 – Fenced off area (1/10 acre) on the Narrows Trail

Red Maple
Sugar Maple
Baneberry
Maidenhair fern
Hog Peanut
Wild sarsaparilla
Jack-in-the-pulpit
Ash Seedling
Grass
Pennsylvania Sedge

Hickory
Blue cohosh
Enchanter's nightshade
Large coralroot
High bush honeysuckle
Fern species
Bedstraw species
Wild geranium
Witch-hazel
Round-lobed hepatica
Orchid species
Clearweed
Red oak
Buttercup
Black raspberry
Common elder
Nodding pogonia
Nettles
Violet

Boat Landing

Red Maple
Silver Maple
Sugar Maple
Lyre-leaved rock cress
Yellow birch
River birch
Harebell
Poverty grass
Flowering spurge
Black huckleberry
Frostweed
Hawkweed
Round-headed bush clover
Panicum grass
Jack pine
Red pine
White pine
Wild basil
Gray goldenrod
Spiderwort

Dell House

Common ragweed
Pussytoes
Calico aster
White snakeroot
Rattlesnake plantain
Indian tobacco
Wood sorrel
Panicum grass
Lopseed
Plantain
Common cinquefoil
Heal-all
Prickly ash
Burnweed
Red-topped grass

Understory and Overstory of Black Hawk Island

Red maple
Sugar maple
Japanese barberry
Yellow birch
Pennsylvania sedge
Ironwood
Indian pipes
Hophornbeam
Oak (variety)
Basswood
Hemlock

Appendix C

Black Hawk Island Hike Map

