



LOCATION

13000 Zoo Boulevard, Apple Valley, MN 55124
Phone: 01-952-4319200
URL: <http://www.mnzoo.org>

KEY WORDS

North American mammal, semi-aquatic

ANIMALS

Family	Species	Common Name	Capacity
Rodentia	<i>Castor canadensis</i>	North American Beaver	1.1+young

AWARDS

2008 AZA Exhibit Award

DESCRIPTION

The Minnesota Trail is one of the Zoo's original 1978 exhibits and was in need of a complete renovation. The overall project goal was "to invite zoo guests into the lives of Minnesota wildlife in a 'North Woods' setting, to excite them about Minnesota's animals and their environments, to celebrate the tradition of wildlife stewardship in Minnesota, and to encourage positive action on behalf of Minnesota wildlife and wild places."

With the new design, the zoo took advantage of the existing exterior landscape to create a richer, more immersive exhibit experience. In several spots, the public space was also extended beyond the existing corridor, providing more intimate viewing opportunities and breaking up the original linear circulation pattern.

Many native species are represented in the Minnesota Trail, with mammals including raccoon, beaver, North American river otter, North American porcupine and great horned owl, coyote, fisher, grey wolf, wolverine, puma, and Canada lynx all being featured, as well as many bird, amphibian, reptile, fish and plant species.

The beaver enclosure includes water and dry areas, and offers over water and underwater (split level) viewing to the visitors. The beavers can be watched from underwater as they swim and build dams out of wood stacked on the dry land. A realistic tree feature and marsh-planting connects the visitor area with the beaver enclosure for an immersive experience.

SIZE

Minnesota Trail (including lodge, all exhibits, viewing and service areas): 2700m²; Beaver Exhibit thereof: 150m².



Beaver. ©Minnesota Zoo, 2014



Minnesota Trail Main Lodge. ©Minnesota Zoo, 2008



Beaver with Young. ©Minnesota Zoo

Space allocation in square meters:

use	indoors		outdoors		total exhibit
	accessible	total	accessible	total	
animals			100		100
visitors			100		100
others			50		50
total		0	250		250



Information Volunteers. ©Minnesota Zoo, 2008

COSTS

US Dollars 2,509,000 including 4 % for design.

The total cost is for the total exhibit complex of the Minnesota Trail, including design \$109,000, interpretive exhibits \$200,000, and construction \$2,200,000.

OPENING DATE

07 July 2007

DESIGN

Beginning: 2006

- Concept Design: Minnesota Zoo
- Project Landscape Architect & Site Planning: Damon Farber Associates
- Project Architect: RSP Architect

CONSTRUCTION:

Beginning: August 2006



Split View. ©Minnesota Zoo, 2008

- Project Structural Engineers: Mattson Macdonald Young
- Exhibit Fabrication: Minnesota Zoo Exhibit Staff
- Interpretive Graphics: Spilt Rock Studios

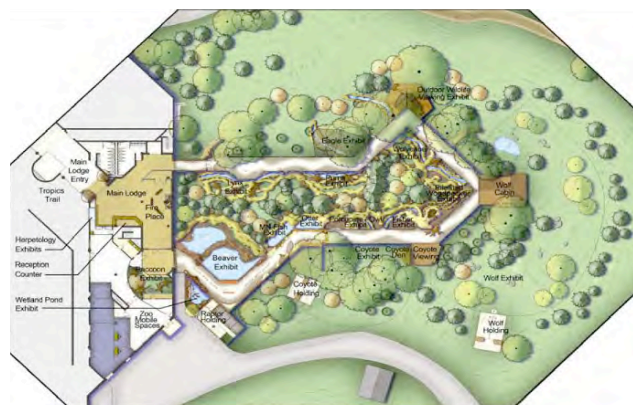
PLANTS

The exhibits are planted with Minnesota native plant material using habitat-appropriate species. Spruce, fir and pine were used throughout the trail as well as native oaks, birch and aspen. Shrubs include northern species such as gooseberry, bearberry and holly, while native species with 'wildlife attraction' value were used in the 'bird feeding deck' planting. A small Minnesota bog planting was placed across from the beaver exhibit and planted with northern Minnesota species such as blue flag iris and cattail.

The [plant list](#) specifies the Latin names of the plants used for this exhibit.

FEATURES DEDICATED TO ANIMALS

The mission of the Minnesota Trail is to exhibit amazing species that are native, or were once native to the state of Minnesota. Guest and animal safety is a top priority for the Minnesota Zoo, and as such the exhibits were designed with both in mind. The



Minnesota Trail siteplan. The beaver exhibit is at the beginning of the trail. ©Minnesota Zoo, 2014

design of the trail allows the visitors to get an up-close look, while still allowing the animals to feel secure and to exhibit natural behaviours.

The pool and land areas in the beaver exhibit suit the needs of the semi-aquatic animals.

FEATURES DEDICATED TO KEEPERS

Web cams installed in several exhibits and holding areas allows animal care staff to observe and record animal behaviour in dens or on exhibit when the keeper is working in another area of the Trail.

The zoo has animal escape and recapture policies that have been in place for many years. The firearms team and duty officers take annual tours through all animal areas of the zoo to ensure everyone is familiar with the area in the event of an emergency.



Beaver Exhibit. ©Minnesota Zoo, 2008

FEATURES DEDICATED TO VISITORS

Visitors to the Minnesota Trail experience wildlife in a north woods setting, beginning with a lodge at the head of the Trail, proceeding to a “back porch” scene with raccoons, and then on into the outdoors to view beavers and their dam, passing a new wetland and underwater exhibit. Zoo guests then follow an interpretive path that takes them “underwater”. In the underwater experience, visitors view beavers interacting with their environment: building dams, swimming, and resting in the “beaver lodge”. The split level viewing means that visitors get a good view of the beavers whatever they are doing. The beavers can be watched underwater as they swim and build dams out of wood stacked on the dry land. A realistic tree feature and marsh-planting connects the visitor area with the beaver enclosure for an immersive experience.

Most of the animal exhibits are viewed through glass windows to allow up close viewing of the animals, but also provide safety for the guests. The few exhibits that do not have glass viewing have a 1.2 meter wide planted space between the public barrier and exhibit fencing.

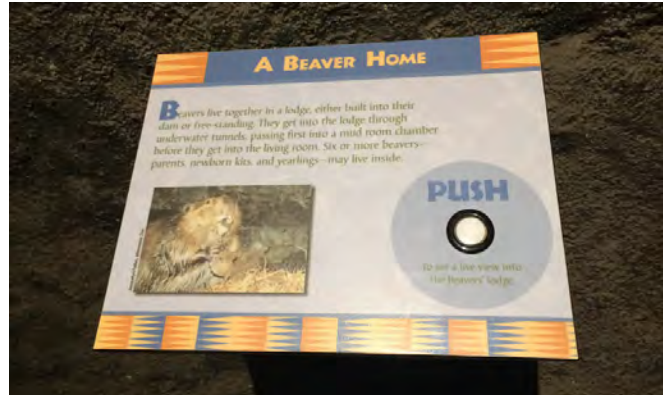
Web cams installed in the grey wolf and beaver exhibits and holding areas allow our guests to see animals when they may not be normally viewable from the trail or at home from the Minnesota Zoo’s website.

INTERPRETATION

Our interpretive goals are: to excite visitors about Minnesota’s animals and their environment, to



Minnesota Trail Entrance. ©Minnesota Zoo, 2008



Beaver Signage. ©Minnesota Zoo, 2014

communicate the tradition of wildlife stewardship in Minnesota, and to encourage positive action on behalf of Minnesota wildlife and wild places.

The interpretation of the trail is multi-sensory. Visitors can climb inside a coyote den, peek into a beaver lodge, stand next to a full-size sculpture of a wolf, listen to recorded owl, frog and wolf calls, and watch a woodpecker feeding from inside a tree. The trail blurs the line between zoo exhibit and nature trail when it heads out onto a bird observation deck where feeders, berry bushes and nut trees attract dozens of native bird species, including woodpeckers, nuthatches, cardinals and even wild turkeys. Volunteers with field guides and binoculars demonstrate basic bird watching techniques and encourage visitors to set up bird feeding stations in their own backyards.

To connect with Minnesotan memories and traditions, the entrance of the new trail was designed to look like a North Woods lodge, complete with old photos, fishing gear, an authentic Ojibwe birch bark canoe and a massive stone fireplace. The trail itself was also designed to conjure memories of exploring the outdoors, with subtle artificial animal tracks and scat along the pathway that is designed to look and feel like a wood chip/leaf litter trail in the woods. Volunteer interpretation was built in as a critical interpretive component of the Minnesota Trail. The Trail was designed with several built-in benches for interpreters to sit, display artifacts and interact with guests. The entrance lodge includes an interpretive desk where volunteers are stationed every day to



Underwater Beaver Viewing. ©Minnesota Zoo, 2008



Minnesota Trail Main Lodge Fireplace. ©Minnesota Zoo, 2008

greet guests, answer questions and hand out kid's activities. Live Minnesota animal demonstrations (porcupines, opossums, raptors, reptiles and amphibians) take place daily on an interpretive cart that is moved into the main lodge. Along with the entrance lodge, the Trail's other primary interpretive hub is the Wolf Cabin.

Local wildlife conservation is strongly emphasized along the trail. The issue of invasive species is conveyed using several graphics. Another key conservation program featured throughout the Trail is the Wild and Rare program. This initiative of the Minnesota Department of Natural Resources highlights those species of greatest conservation need in Minnesota.

To encourage visitors to get out and explore Minnesota further, the trail ends with a large map of Minnesota pointing out all of the state and national parks in Minnesota.

MANAGEMENT

The provision of wood encourages the beavers to express natural dam building behaviours.

RESEARCH

A visitor study was carried out in 2007, which ranked the Minnesota Trail as the highest rated experience at the Zoo. It measured reactions to the new exhibit complex as well as the interpretive effectiveness of the Minnesota Trail.



Volunteer Information Point at Exhibit. ©Minnesota Zoo, 2008

CONSERVATION

Local wildlife conservation is strongly emphasized along the trail. The information desk in the main lodge displays and distributes brochures from the Minnesota Department of Natural Resources, the US Fish and Wildlife Services and eight other Minnesota Conservation Partners of the Minnesota Zoo (Friends of the Boundary Waters Wilderness, Audubon Minnesota, the Voyageurs National Park Assoc., etc.)

Voyageurs National Park (VNP), in northern Minnesota, supports one of the highest densities of beavers in North America. Because of the significant cultural, ecological, and scientific importance of beavers to VNP, in 2004 the park initiated a beaver research and monitoring program. Among other things, this project investigates the rate of diseases and parasites in the beaver population.

In 2007 the Minnesota Zoo provided funding to associate veterinarian Dr. Tiffany Wolf to participate in an ongoing VNP beaver research and monitoring program. She collected samples from VNP beavers to learn more about their health, and surgically implanted radio transmitters in 30 beavers to help track their movements during the winter. This project is ongoing.

The flooring on the trail is a recycled rubber, and most of the lighting was chosen for its energy efficiency.

LOCAL RESOURCES

The Minnesota Trail project was designed primarily "in-house" using the zoo's project management staff, exhibit design staff, carpenters, plumbers, electricians, horticulturists and interpretive staff. Building materials from Minnesota were used in construction.



Beaver Exhibit. ©Minnesota Zoo, 2014