

# Minnesota Department of Natural Resources Trail Case Studies



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**Minnesota Department  
of Natural Resources**

American Trails  
19<sup>th</sup> National Trails  
Symposium  
Little Rock, Arkansas



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# DNR Mission

- Work with citizens to conserve/ manage the state's natural resources
- Provide outdoor recreation opportunities
- Provide for commercial uses of natural resources to create sustainable quality of life



Introduction:

# Minnesota Biomes

- Tallgrass aspen parkland
- Coniferous forest
- Deciduous forest
- Prairie grassland



Introduction:

# State Corridor Trails

## 21 State Trails

2500 Miles authorized  
1250 miles developed  
554 miles paved



Introduction:

# Water Trails

30 Water Trails  
4,257 trail miles



Introduction:

# State Forests

- 5 million acres
- 58 State Forests

## State Forest Trail Miles

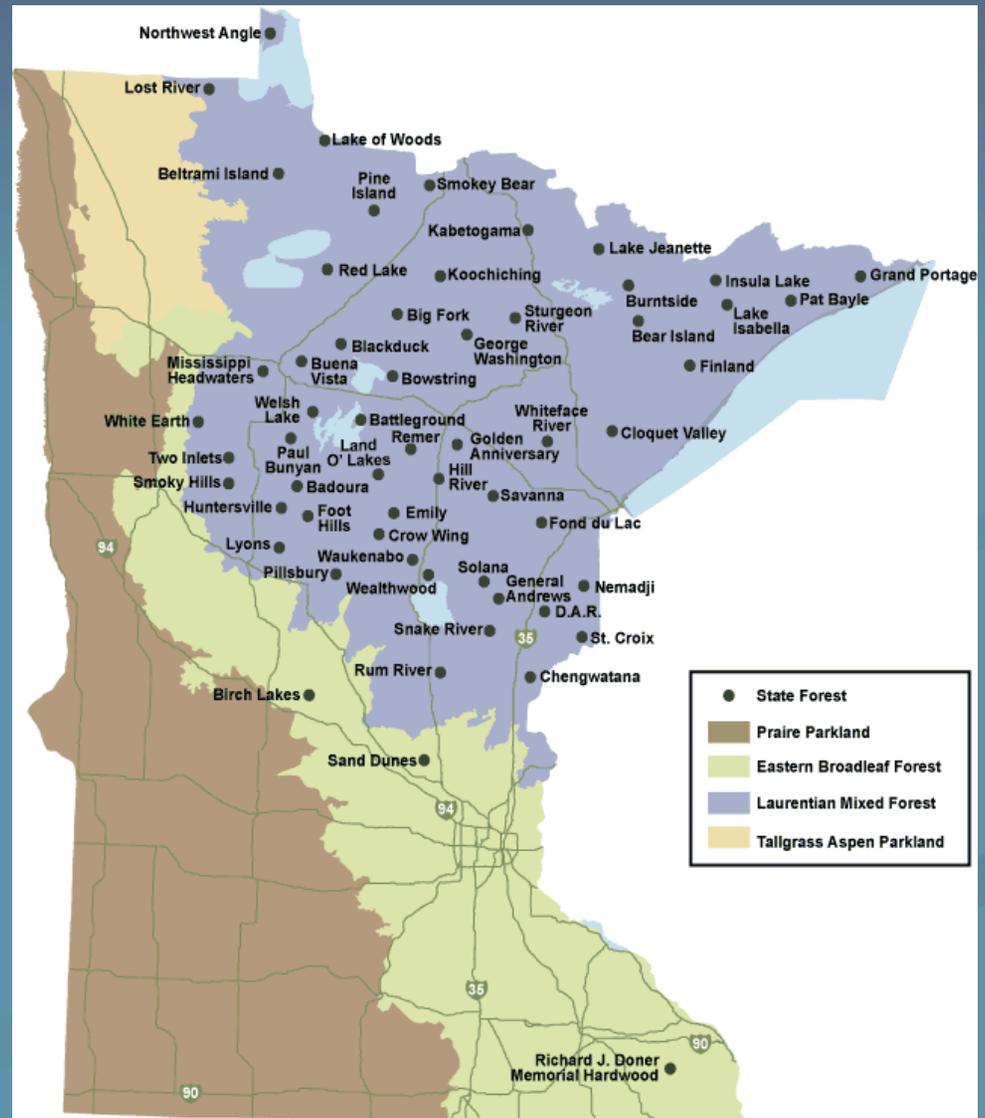
Hiking: 390

Horse: 275

Mtn. Bike: 250

Ski: 170

OHV: 760

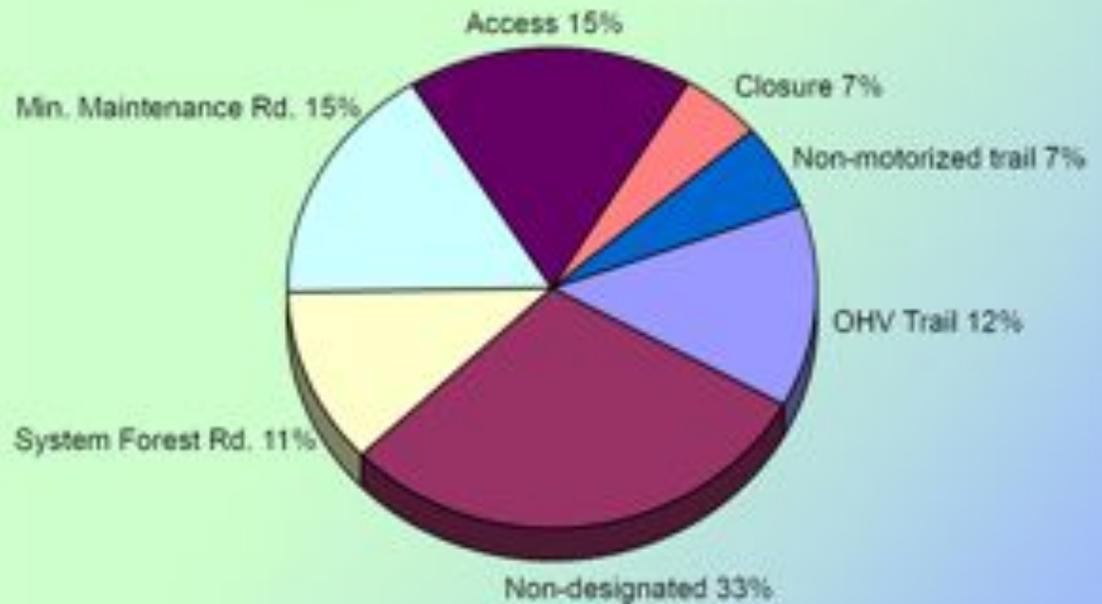


# Introduction: Forest Classification/ Route Designation

Forest Road & Trail Designation Mileage Totals for the First 45 Completed State Forests		
Route Designation	State Forest Land (miles)	
System Forest Road	845	
Min. Maintenance Forest Road	1,155	
Non-designated Routes*		4,193
Proactive Closures	360	
In closed forests	177	
In limited forests	2,525	
In managed forests (forest access routes)	1,131	
ATV / OHM Trail*	784	
OHM Only (Single-Track Trail)	140	
ORV Trail*	27	
Non-motorized Trails	518	

## First 45 State Forests: Final Designations

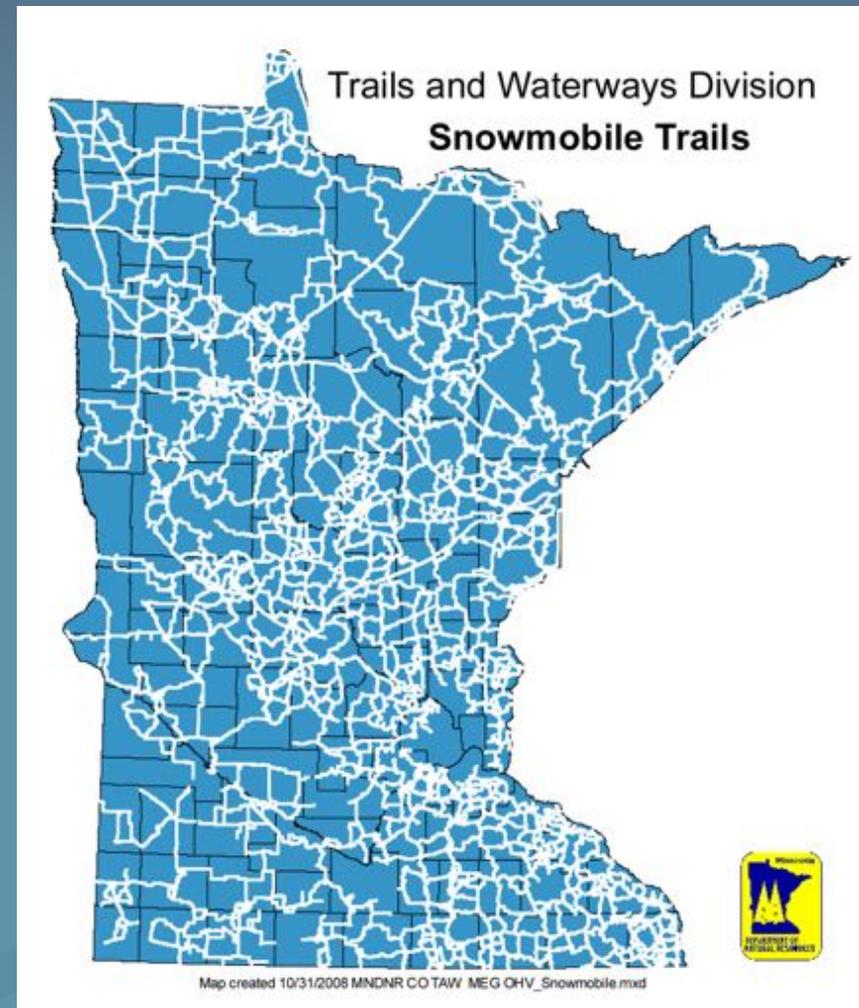
[ Total = 7,460 Miles of Routes ]



Introduction:

# Snowmobile Trails

- 21,000 miles of Snowmobile Trails



# Case Study Overview

- **Non-motorized**

Gitche-Gami State  
Trail

Hay Creek Unit,  
Dorer State Forest

- **Motorized**

Spider Lake Area,  
Foothills State  
Forest



# Case Study #1 (non-Motorized) Gitchi-Gami State Trail



Bicycle trail  
developed along the  
shore of Lake  
Superior

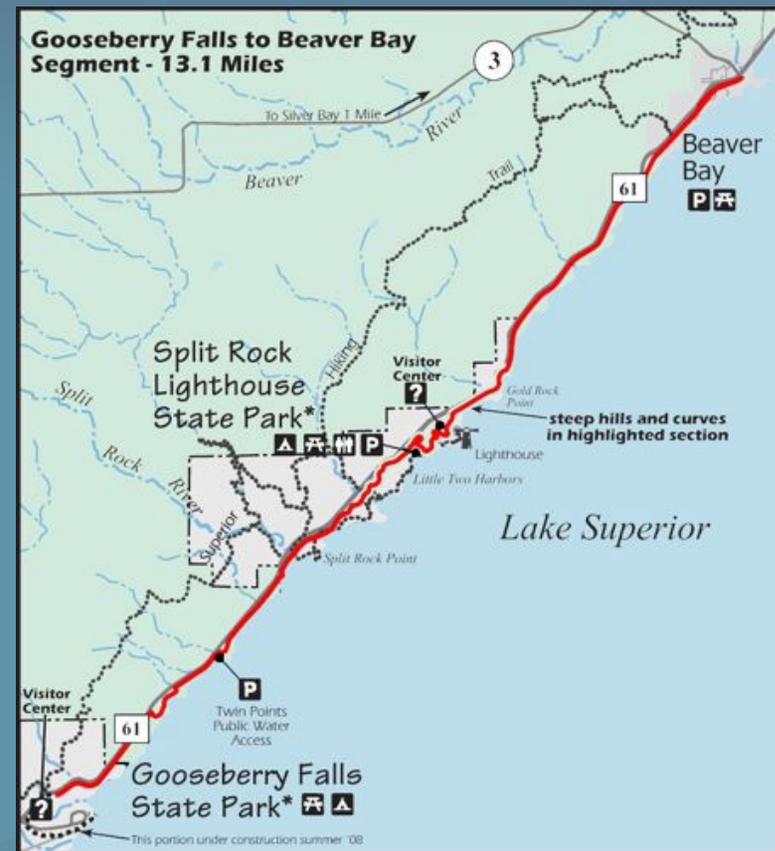
Currently 22.6 of  
the 84 authorized  
miles have been  
developed and  
are paved



# Case Study #1 (non-Motorized) Gitchi-Gami State Trail

Map of the trail from  
Gooseberry Falls State  
Park to Beaver Bay

This 14 mile corridor is  
the longest developed  
segment



## Case Study #1 (non-Motorized)

# Gitchi-Gami State Trail



Lake Superior, the largest fresh water lake in the world, provides spectacular views.

Case Study #1 (non-Motorized)

# Gitchi-Gami State Trail

## Rhyolite Cliff bridge

- Limited space for the trail between cliff and road
- Required geological engineering study



Case Study #1 (non-Motorized)

# Gitchi-Gami State Trail

## Rhyolite Cliff Bridge Construction Project

- Cost: \$347,000

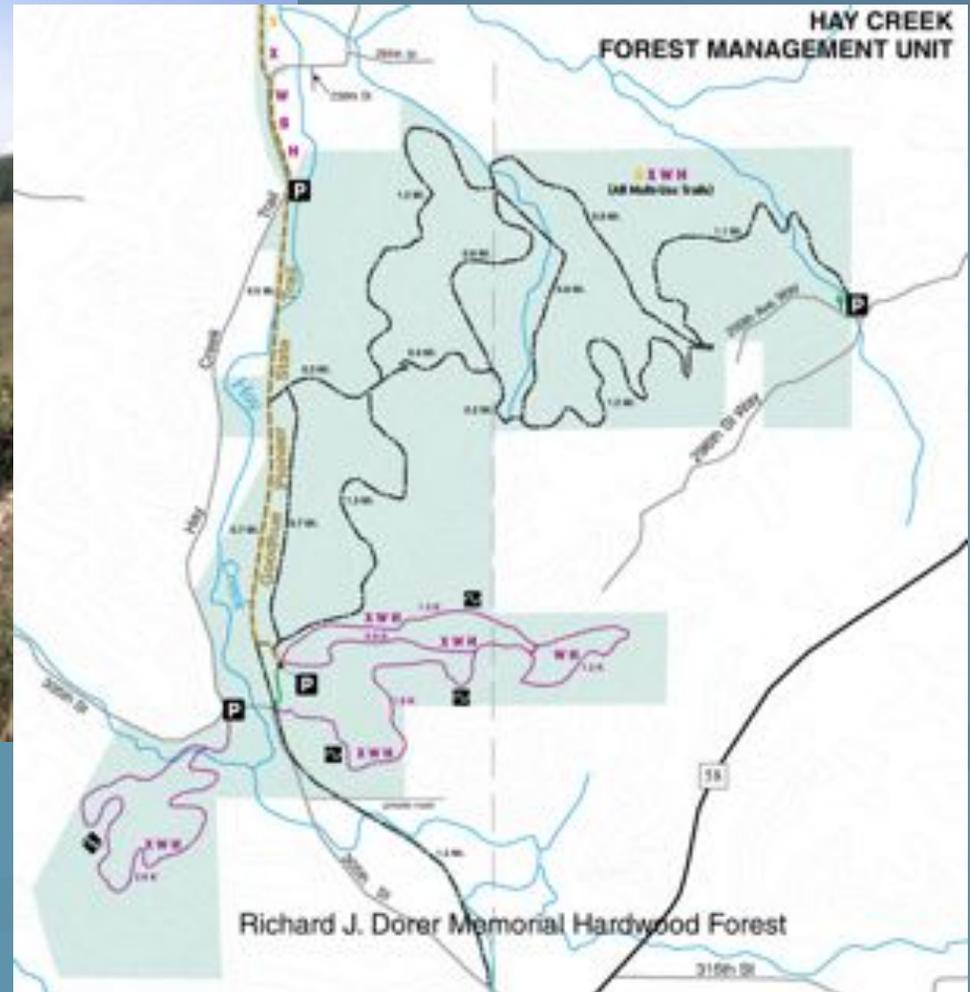


# Case Study #1 (non-Motorized) Gitchi-Gami State Trail



Primary use is bicycling but also used by hikers and skaters  
Gitchi-Gami State Trail cost per mile \$450,000

# Case Study #2 (non-Motorized) Hay Creek Unit in Dorer State Forest

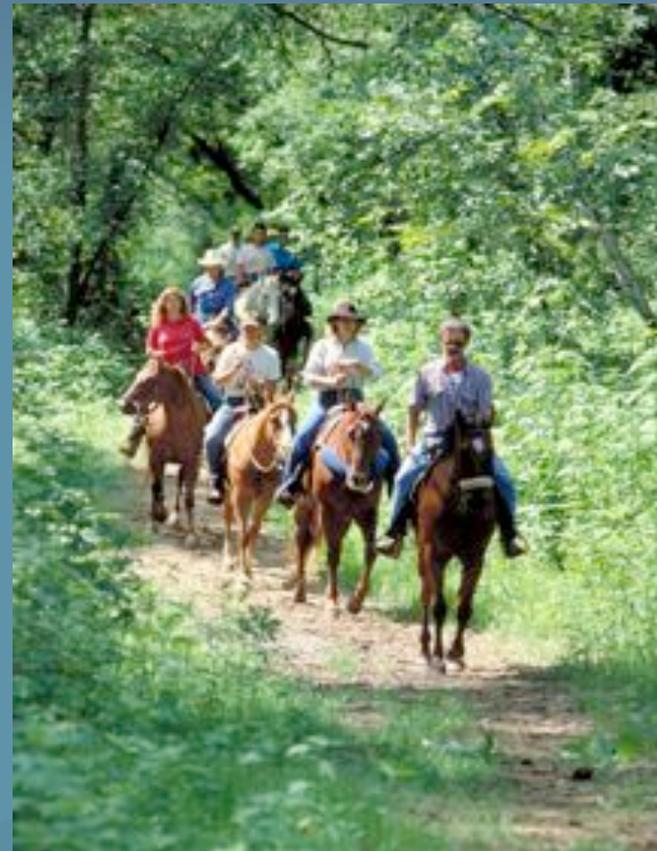


15 miles of heavily  
used horse trails  
(1,500 acres)

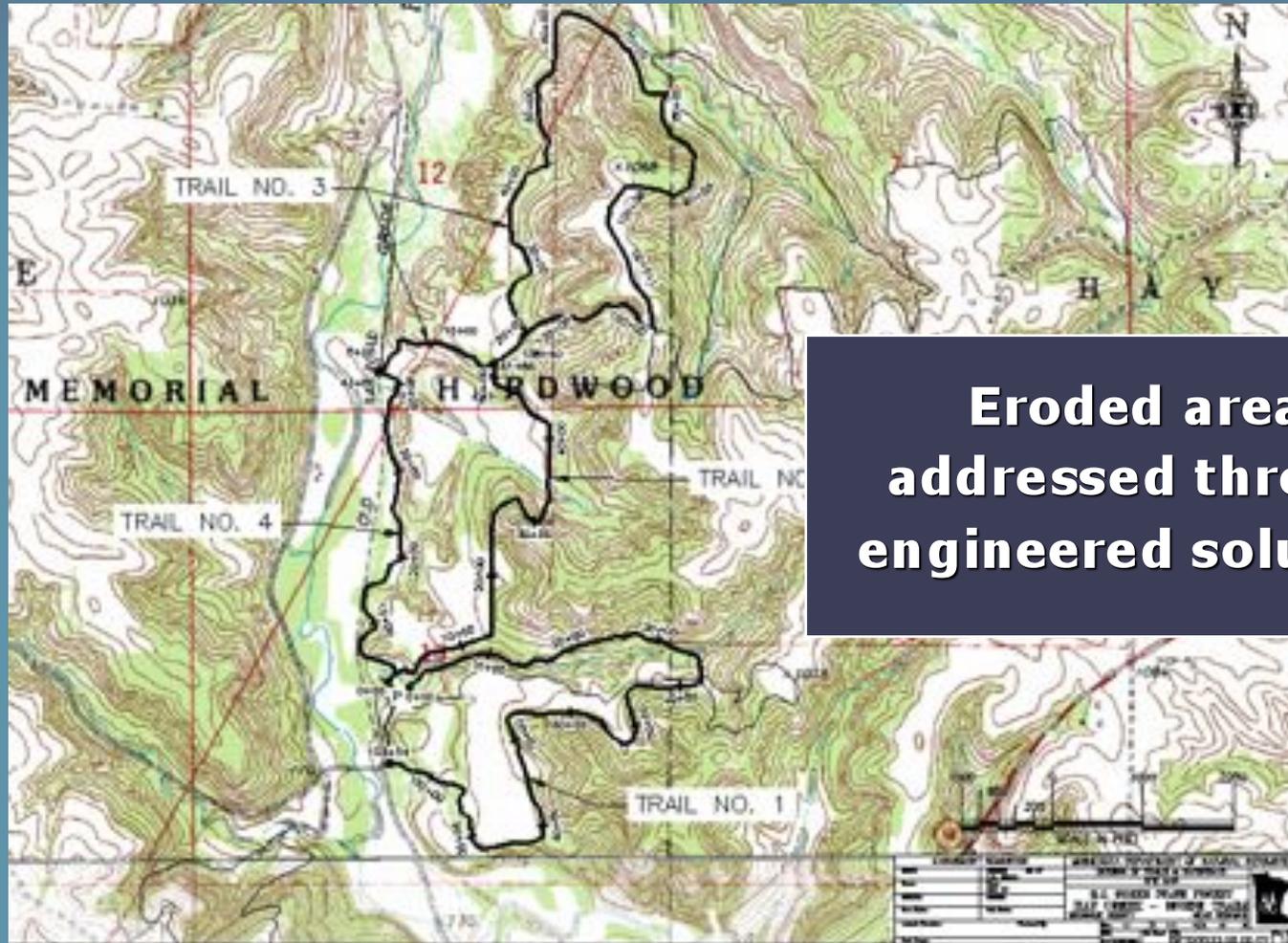
## Case Study #2 (non-Motorized)

# Hay Creek Unit in Dorser State Forest

- Former logging trails
- Severe erosion problems
- Terrain varies from flat to very steep slopes
- Sandy soils can be found on many slopes



# Case Study #2 (non-Motorized) Hay Creek Unit in Dorser State Forest





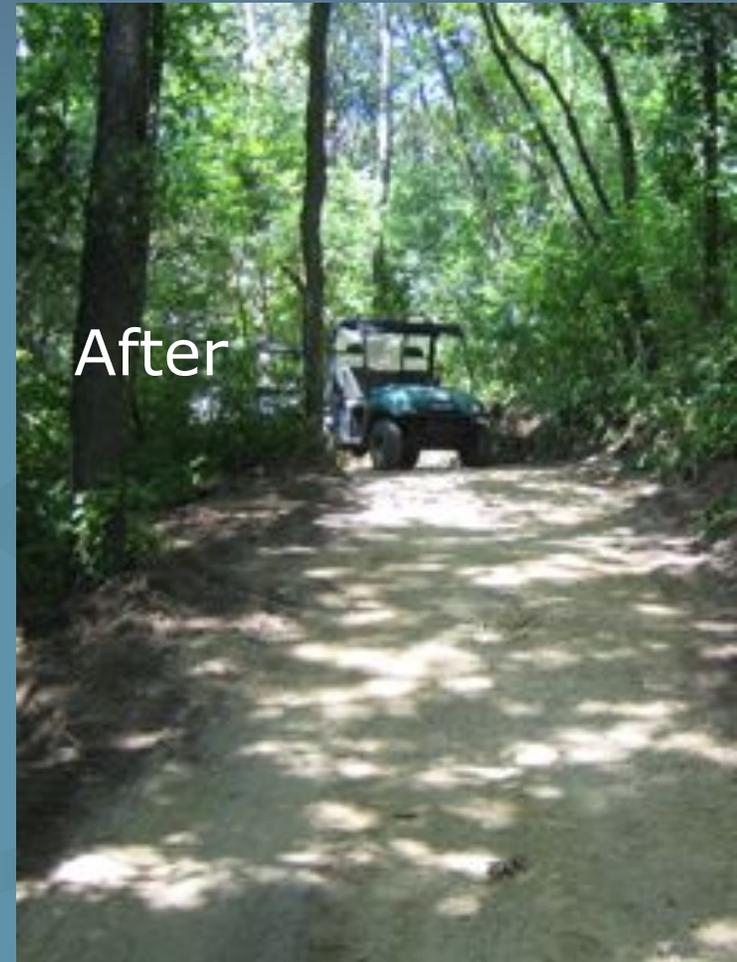
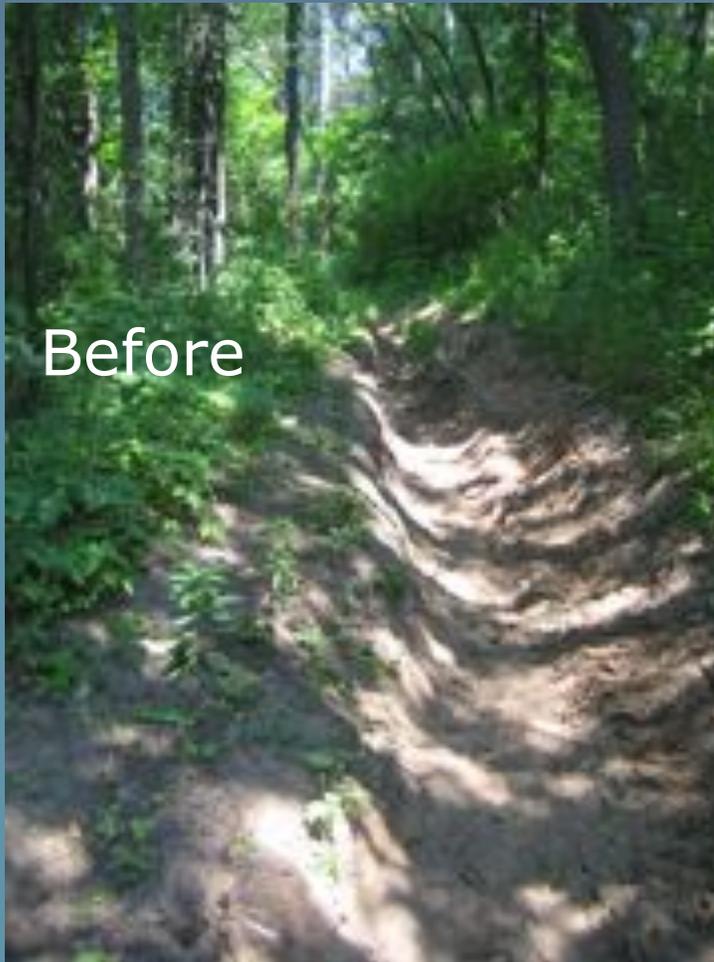
Case Study #2 (non-Motorized)

## Hay Creek Unit in Dorer State Forest



**5 miles of trail rehabilitation: Cost: \$100,000**

# Case Study #2 (non-Motorized) Hay Creek Unit in Dorser State Forest



## Case Study #2 (non-Motorized)

# Hay Creek Unit in Dorser State Forest

### Parking lot

- Too small
- Could not accommodate high use levels



## Case Study #2 (non-Motorized) Hay Creek Unit in Dorser State Forest

- Doubled capacity
- 8 single car parking spaces for other trail users
- New vault toilet
- Picket lines and accessible mounting block



**Parking lot renovation: Cost: \$70,000**

# Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest



- **Difficulty & trail length**  
Easiest to more difficult  
(more difficult for ATV only)  
**ATV only: 14.9 miles**  
**ATV, OHM, ORV: 11.4 miles**
- Historic OHV use area on county and state forest lands following old logging trails and other routes like cross-country ski trails



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

- State Forest Users
  - 63% of visitors use OHV's
  - 55% use an OHV while hunting
  - Median travel distance 100 miles



Info from Foothills Study 2004

## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

- Erosion problems
- Needed to make the trail sustainable
- Also needed to keep the trail enjoyable for users



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

### Engineered solutions

#### ■ Geo-links

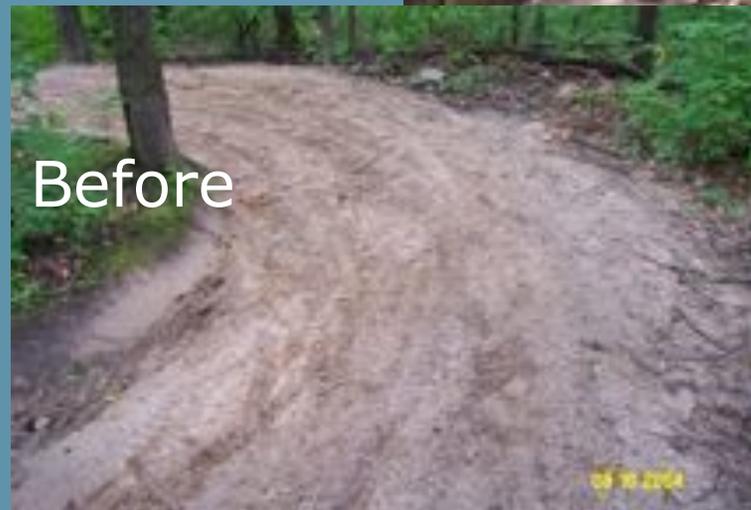
Supports and dissipates loads on difficult soil situations  
Preserves soil integrity and allows water infiltration



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

### Geo-link project

- ¼ mile
- \$31,000
- 435 labor hours



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

### Tower Hill Project

- Uncontrolled erosion on a user-built trail
- Ran straight up the fall line
- Trail damage prevented average users from reaching the scenic outlook at the top



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

### Tower Hill

- Closed, restored and re-vegetated user-created trail
- Cut a new sustainable challenging trail into the hillside
- Maintained access to the hill top



## Case Study #3 (Motorized) Spider Lake Area, Foothills State Forest

### Trail Characteristics

- Now a sustainable OHV trail system
- Improved facilities
- Narrow trails
- Great day trips
- One of the most used trail systems in the state



# Outreach - Advisory & User Groups

## Examples of DNR Advisory Groups and Associations/ Stakeholders

- DNR Equestrian Advisory Group
- MN United Snowmobile Association
- MN Nordic Ski Association
- MN Motorized Trail Coalition (ATVAM, ARMCA, 4WDA, & MNUSA)
- MN Off-road Cyclists (Mtn. Bike)
- Lake Superior Water Trail Association
- North Country Hiking Trail Association
- MN Recreational Trails Users Association



# Outreach - Publications

Minnesota Horse Trails

Minnesota Water Trails

ALL DRESSED UP AND NO PLACE TO GO?

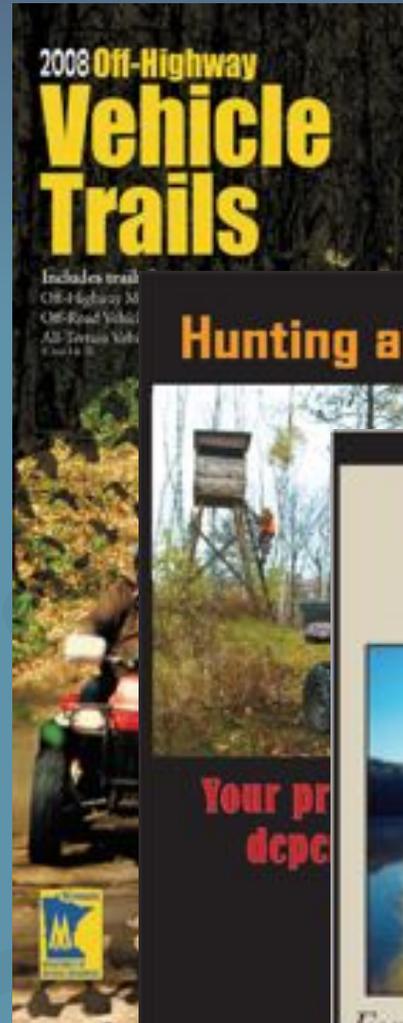


[www.FindTheTrails.com](http://www.FindTheTrails.com) 1-888-MINN-DNR

In partnership with responsible rider associations throughout Minnesota

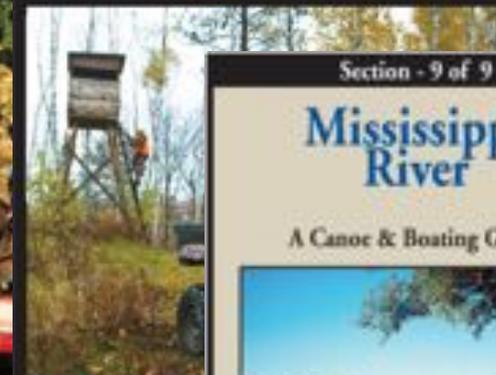


Web resources  
& maps



Print info  
& maps

Hunting and ATVs



Section - 9 of 9

Mississippi River

A Canoe & Boating Guide



Fort Snelling to Hastings

# Enforcement & Monitoring



Photo provided by  
the Morrison  
County Record,  
Little Falls, MN  
mcrecord.com



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