



STATE OF
MINNESOTA

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DEPARTMENT OF NATURAL RESOURCES

DEVELOPMENT & ACQUISITION STATUS

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Soudan Underground Mine
State Park



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MINNESOTA STATE PARK SYSTEM

The mission of the Division of Parks and Recreation is to provide a state park system that perpetuates Minnesota's scenic beauty and its natural and cultural resources, while being responsive to public needs and expectations, and providing a diversity of recreational opportunities.

The Division of Parks and Recreation manages 64 state parks across Minnesota. The state park system is vital to Minnesota's tourism, an industry that is becoming the backbone of many economies in greater Minnesota. Our most unique and valuable cultural and natural resources are found within state park boundaries. It is the Division of Parks & Recreation's responsibility to acquire, protect and interpret these unique resources.

Prior to the 1989 legislative session, funding constraints and increasing visitor use seriously eroded the Division of Parks and Recreation's ability to provide quality recreational experiences and services. Since then the Governor and state legislators have responded to the need for increased funding for the operations budget. However, financing the maintenance of existing facilities and new development in the face of increasing visitor use remains a problem. This will be addressed during the 1990 legislative session when a capital bonding bill is considered.

The state park system has the Department of Natural Resource's (DNR) largest physical plant with over 2,800 major facilities requiring major rehabilitation. The Division of Parks & Recreation has identified more than \$55 million in capital budget needs. These projects include land acquisition, resource management, major rehabilitation or replacement of existing facilities and a few new facilities. Legislative funding requests to meet this need will be spread throughout future bienniums.

A recent study conducted by the Minnesota Historical Society identifies 515 historic structures located in the state park system. These structures are listed on the National Register of Historic Places. Most of these structures are of Civilian Conservation Corps (CCC) and Work Progress Administration (WPA) vintage. The CCC/WPA structures were constructed in the 1930's. These facilities are over 50 years old and many are in need of major rehabilitation which includes the electrical, sewage, and water systems associated with these buildings.

Many years of intensive use is also a consideration when looking at the current condition of campgrounds, picnic areas, group camps and trail systems. Lack of development and rehabilitation of these and other state park facilities will reduce park use. A reduction in state park use will adversely impact the economic development of adjacent communities and Minnesota's effort to improve tourism.

As capital development funds have become available we have completed the highest priority projects. As additional needs are identified, they are reviewed and placed on the statewide priority list for future completion.

In 1991, Itasca, Minnesota's oldest state park, will be 100 years old. For 100 years Minnesota has had a park system to be proud of. The present challenge is to manage the park resources and recreational development to ensure that Minnesotans will be proud of their state park system for another hundred years.

AN OVERVIEW OF SOUDAN UNDERGROUND MINE STATE PARK

Soudan Underground Mine State Park is located in northern St. Louis County in northern Minnesota. The park is situated on a rugged ridge overlooking Lake Vermillion to the north and the communities of Soudan and Tower to the south. The statutory boundary encompasses 1250 acres. Of these, 174 acres are privately owned. Trunk Highways #1 and #169 provide chief access to the park.

Millions of years ago vast seas spotted with volcanos created deposits of low grade iron ore on the sea floor. Over time movements in the earth's crust folded, compressed and thrust the sea floor into mountain ranges exposing the ore deposits. Weathering concentrated the low-grade ore into rich hematite.

About 2 million years ago something happened to the climate of the Northern Hemisphere. Due to factors still not fully explained, the average temperature of this part of the world dropped enough to cause glaciers to form in the Arctic. Over time these glaciers expanded southward covering large portions of North America extending as far south as St. Louis, Missouri. Glaciers advanced and retreated four times during this period scouring the landscape and depositing rock and mineral debris in the process. The last glacier exposed an outcrop of rich hematite near Lake Vermillion. This outcrop later became the Soudan Mine.

George R. Stuntz, explorer, prospector, and businessman, came to northern Minnesota as a surveyor. In 1863 he discovered iron ore deposits while surveying in the Tower and Soudan area. Stuntz interested Duluth banker, George Stone, in the ore deposits. Stone, in turn, persuaded Pennsylvania businessman, Charlemagne Tower, to finance a mining company to extract the ore. After geologic studies verified the quality of the ore, Tower formed the Minnesota Iron Company which purchased the land on the east side of Lake Vermillion. Captain Morcom and his mining crew arrived in 1884, and on July 31 of that year the first shipment of ore left on rail for Two Harbors.

In the beginning, men with picks, shovels, hand drills and wheelbarrows moved the ore out of the open pit to the railroad. Later, steampower was used to extract the ore and mules pulled the ore carts. By the 1890's the mining process was converted to an underground operation.

In 1924 electricity replaced steam and mule teams. Production increased dramatically as newer equipment was added to supply an increasing demand. After World War II, high mining and shipping costs reduced profits. Facing overwhelming competition the mine closed in 1963. Later that year United States Steel Cooperation donated the mine, and 1200 acres surrounding it, to Minnesota for the purpose of establishing a state park.

Today, Soudan Underground Mine State Park offers visitors the opportunity to see Minnesota's deepest iron ore mine as it appeared when it was last in operation. The park offers underground tours, tours of mine buildings and walks through the picturesque park. Existing facilities include picnic grounds, an interpretive center, hiking and snowmobile trails.

Above ground there are many areas of interest, perhaps the most significant are the miles of rugged shoreline on Lake Vermillion. There are several areas of relatively undisturbed plant communities in the park. A large portion of the park was once white pine, and except for parts where trees were removed to make timbers for the mine, the vegetation is still mostly pine. Stands in inaccessible areas such as on high ridgetops are largely intact and serve as important habitats for wildlife. Raptors, including merlins and kestrels, nest in the cliff habitats created by the open pit mines. Bats find the mine to be a convenient overwintering site that is increasingly important as other habitats vanish.

Soudan Underground Mine State Park

TRAILS

- State Trail
- Hiking
- Interpretive

FACILITIES

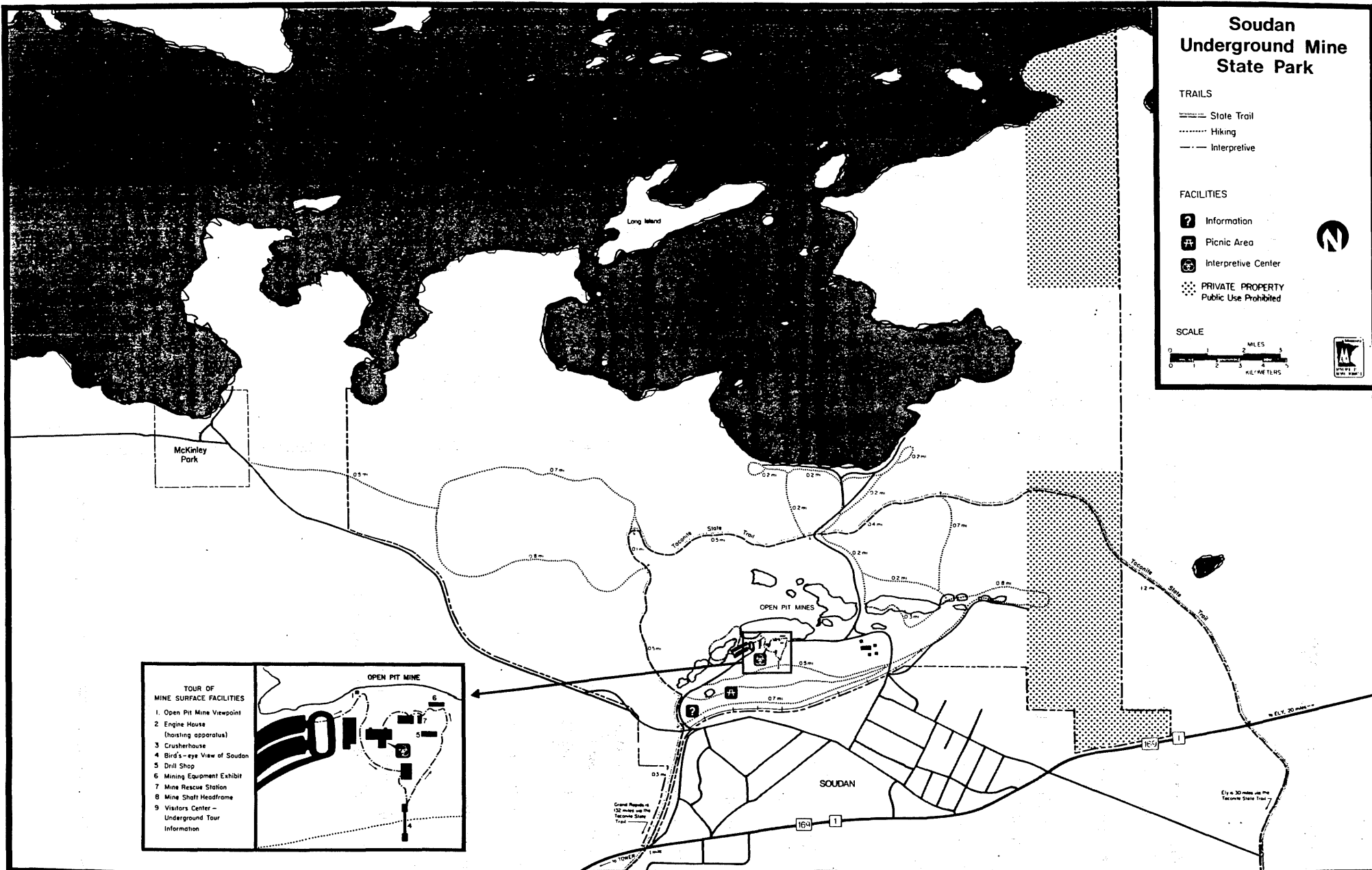
- Information
- Picnic Area
- Interpretive Center
- PRIVATE PROPERTY
Public Use Prohibited

SCALE



**TOUR OF
MINE SURFACE FACILITIES**

1. Open Pit Mine Viewpoint
2. Engine House (hoisting apparatus)
3. Crusherhouse
4. Bird's-eye View of Soudan
5. Drill Shop
6. Mining Equipment Exhibit
7. Mine Rescue Station
8. Mine Shaft Headframe
9. Visitors Center - Underground Tour Information



EXISTING FACILITIES

The following is an inventory of the existing physical plant of Soudan Underground Mine State Park.

Acres in Statutory Boundary - 1,250

Acres of state land - 1,076

Campsites - None

Miles of Trails

Hiking - 5

Miles of Road

Asphalt - 1

Gravel - 1

Number of Picnic Tables - 20

Water Accesses - 1

Number of Buildings

Over 100 sq.ft. - 20

Under 100 sq.ft. - 1

Miles of Posted Boundary - 9

Visitor Centers - S

Park Utilities

Number of Septic Tanks - 3

Miles of State Owned Power Line - 2

PROBLEMS FACING SOUDAN UNDERGROUND MINE STATE PARK

There are many public recreational facilities in Soudan Underground Mine State Park to maintain. Many are in need of replacement or major rehabilitation. Most were constructed in the early 1900's, and are now in need of rehabilitation. The park has very limited service facilities. The limited building space currently available for the shop and maintenance function is located within the main public use area, and conflicts with public use of the park. Many new facilities are needed to meet growing recreational demands. The parks natural and cultural resources are also in need of protection and management to perpetuate Soudan's resources.

In order to serve the growing number of visitors several new facilities are desperately needed. An orientation/interpretive facility should be constructed to tell a part of the mining story before visitors go underground. A maintenance facility is also needed to repair and maintain equipment.

The tours should also be expanded to give the visitor a broader look at the mining history. This could be accomplished by expanding tours to other levels of the mine.

Important improvements have been completed at Soudan Underground Mine State Park in recent years. However, the goals identified in the ten year old management plan have not been achieved.

RECENT DEVELOPMENT IN SOUDAN UNDERGROUND MINE STATE PARK

Major development projects over the past few years have included:

1. Replacement of shaft rails.
2. Rerouting of tours on the 27th level.
3. Replacement of two pumps for water removal.
4. Resource management has focused on the disturbed communities with projects to salvage trees from an area where these trees were not desirable, and clearback projects to keep the vegetation in a condition similar to what it was at the time the mine was in active use.

SOUDAN UNDERGROUND MINE STATE PARK CAPITAL NEEDS

RESOURCE MANAGEMENT

Bat Management - \$3,000

Installation of air doors on the mine levels, where currently, bats are blocked from entering because of a system that seals each level.

Open Pit Tree Removal - \$4,000

Removal of trees growing in mine pits.

Nesting Platforms - \$3,000

Installation of platforms for nesting raptors on the pit mine walls.

Pine Management - \$3,000

Planting and sanitation cuts in pine stands.

Sensitive Species Inventory - \$2,000

Baseline resource information is currently lacking and needs to be compiled to aid in resource management decisions.

Subtotal \$15,000

MAJOR REHABILITATION

Train Rehabilitation - \$30,000

Rehabilitate engines and cars as needed.

Railroad Rehabilitation 27th

Level Phase I - \$50,000

Rehabilitate existing track and replace switching gear as needed.

Interpretive Trail Rerouting - \$20,000

Rerouting the outside trail tour that interprets equipment and the general site layout of the mine.

Parking Lot Rehabilitation - \$30,000

Improve traffic circulation and expand parking. Existing parking lot is too small to accommodate current visitors.

Headframe Platform Roof - \$10,000

Rehabilitate the headframe roof to allow for exterior visitor staging.

Equipment Rehabilitation - \$10,000

General rehabilitation of mine hoist and tour equipment, including motors, hoist equipment and miscellaneous equipment in the crusher building.

Refinish all Building Exteriors - \$100,000

Restore existing building exteriors to original condition. These buildings are currently listed on the National Register of Historic Places.

Open Pit Tree Removal - \$25,000

Remove trees from open pits to show how the pits looked during the mining operation.

Alternate Level Tour - \$750,000

Create a second tour on the 15th level, requiring train track repair, electrical wiring and general tunnel rehabilitation.

Subtotal \$1,025,000

NEW DEVELOPMENT

New Shop - \$200,000

The existing shop is in the basement of the hoist building. This makes it almost impossible to work on equipment of any size.

New Visitor Center - \$400,000

This building would serve as an orientation area and interpretive facility. Here visitors would get an introduction to the mining operation before taking the underground tour.

Drill Shop Interpretation - \$8,000

Completely interpret this integral part of the mining operation.

Crusher House Interpretation - \$12,000

Completely interpret the significance of the crusher house.

Subtotal \$620,000

TOTAL DEVELOPMENT NEEDS \$1,660,000

LAND ACQUISITION

There are approximately 20,000 acres of private land within the boundaries of Minnesota State Parks. Acquisition of these lands is an ongoing process that occurs as parcels become available for purchase and funds are available. Present acquisition costs are averaging about a \$1,000 per acre across the state. It would therefore cost about \$20,000,000 to acquire all the private land within state parks at present values.

The park map shows the location of private holdings within the park. These properties should be purchased before private development increases within the park's statutory boundary.

The following issues highlight problems associated with private property within state parks.

- * Private lands within state parks are being sought out by developers.
- * Subdivision for residential use will cause such lands to be too expensive to acquire in the future.
- * Land uses such as gravel extraction and clear-cut logging adversely impact state parks and adjoining public lands.
- * Some private lands limit public use of existing park facilities and lands because of their location.

These issues associated with privately owned lands within state parks threaten existing public investment and limit public use.

PRIVATE LANDS TO BE ACQUIRED IN SOUDAN UNDERGROUND MINE STATE PARK

Parcel #	Acres
1	45
2	174

Total 219 acres.

PARK POTENTIAL

What efforts will the completion of resource management, rehabilitation and new development projects have on Soudan Underground Mine State Park?

These projects along with the acquisition of private lands within the park will assure the preservation of these unique resources and facilities for future generations. Active management will be required to maintain facilities and manage vegetation. These will ensure that future visitors will be able to experience Minnesota's diverse natural and cultural heritage.

Some improvements will not only increase park use but will greatly increase the quality of the visitors experience. Many of the rehabilitation projects will increase staff efficiency and cut the costs of maintaining facilities.

New facilities will improve service while giving the visitor a greater opportunity to learn about Minnesota's natural and cultural resources.

The acquisition of private lands within the park will assure that private and commercial development do not detract from the natural beauty of Soudan Underground Mine State Park.

A stable funding source is essential for effective long term resource management and capital budget planning for the Minnesota State Park system and Soudan Underground Mine State Park.

SUMMARY

Currently, statewide capital needs for development and acquisition are **\$55,000,000**. The mission of the Minnesota State Park System can be achieved by funding support to meet this need over the next several bienniums.

Soudan Underground Mine State Park acquisition costs will be determined by appraisals.

Soudan Underground Mine State Park
development needs **\$1,660,000**

**Help us celebrate the 100th anniversary of the
Minnesota State Park System in 1991!**

