



Missouri Department of Natural Resources

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Missouri
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- Environmental Management System
Development in a Missouri State Park
and State Historic Site



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- Environmental Management System
 - That part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy.
 - International Standard ISO 14001:1996(E) 3.5



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■ EMS Elements

- Environmental Policy
- Planning
 - Environmental aspects
 - Legal and other requirements
 - Objectives and targets
 - Environmental Management programme(s)



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EMS Elements (cont.)

- Implementation and operation
 - Structure and Responsibility
 - Training awareness and competence
 - Communication
 - EMS documentation
 - Document Control
 - Operational Control
 - Emergency preparedness and response



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EMS Elements (cont.)

- Checking and corrective action
 - Monitoring and measurement
 - Nonconformance and corrective and preventive action
 - Records
 - EMS audit
- Management review



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■ CONTINUAL IMPROVEMENT

- process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy.



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- Organized in 1974
- 5 divisions
 - Geology and Land Survey (1853)
 - State Parks (1917)
 - Environmental Quality (1974)
 - Energy
 - Administrative Support

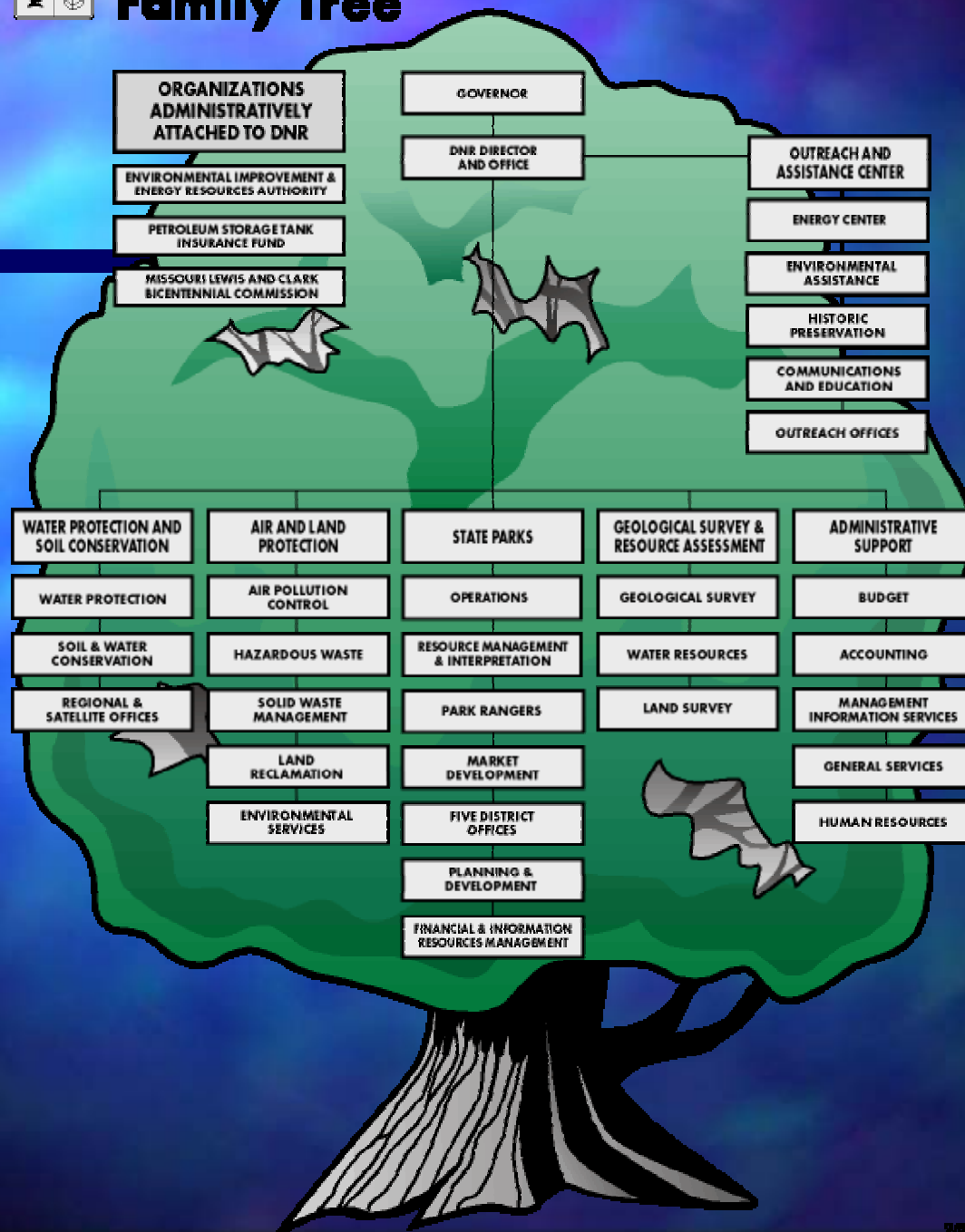


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- Reorganized and restructured in 2000



The Missouri Department of Natural Resources Family Tree





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- Missouri State Parks began in 1917, with the formation of the Missouri State Park Board. The first public lands were purchased for state park use in 1923.
 - Arrow Rock Tavern
- The first Park was purchased in 1924
 - Big Springs; became a part of the National Scenic Riverways in 1964



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- There are currently 84 parks and historic sites in the Missouri State Park System
- The state parks system protects, preserves and interprets Missouri's natural landscapes and cultural landmarks and provide recreational opportunities to the public.



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- Missouri State Parks include
 - Route 66 State Park (formerly Times Beach)
 - Katy Trail State Park (Rails to Trails, 225 miles long)
 - Finger Lakes State Park (reclaimed strip mined coal land)



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- State historic Sites include the birthplace or childhood homes of:
 - **President Harry S Truman**
 - **General John J. Pershing**
 - **Samuel L. Clemens (Mark Twain)**
 - **Scott Joplin**



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- State Parks encounter a variety of environmental issues
 - Drinking water
 - Wastewater
 - Solid waste
 - Hazardous waste (RCRA, CERCLA, SARA, FIFRA),
 - Air pollution (NESHAPS)



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- Fish and wildlife codes
- Endangered Species Act
- State and local laws, ordinances, rules and regulations
- Department policies



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- Missouri Department of Natural Resources Outreach and Assistance Center, Environmental Assistance Office
- Founded in 1992 as the Technical Assistance Program
- Reorganized in 2000



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- Division of State Parks
 - Lake Ozark State Park



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- Violations Failed to Conduct Drinking water monitoring.
- Compliance Conduct proper sampling and monitoring of drinking water system
- Enforcement Compliance Order
- SEP Supplemental Environmental Project
- EMS as ordered by the Department Director



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- meeting with parks management
 - Outline the process
 - Transferability of the product or process
 - Select the facility and designate the EMS team



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- develop timetable milestones
 - Select and train EMS Team.
 - Develop Environmental Policy Statement
 - Identify Environmental Aspects and impacts
 - determine significant impacts
 - develop procedures (programs)
 - determine measures



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■ Selection Criteria

- Large land area
- Diverse recreational activities
- Well visited facility
- Enthusiastic staff



MINE AT
PRACTICE
HEAVY
M20

10P94C003-001



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- Surprise
 - Super fund Site

St. Joe State Park









RECYCLING CENTER

Help preserve our environment.
Place recyclable products in their appropriate containers.

CONTAINERS

Steel & Tin Cans
Any type steel, coated and uncoated.
Aluminum Cans

Plastic
No. 1 & 2
No. 3 (Food Grade)
No. 4 (Food Grade)
No. 5 (Food Grade)
No. 6 (Food Grade)
No. 7 (Food Grade)

Other Containers
No. 10 (Food Grade)
No. 11 (Food Grade)
No. 12 (Food Grade)
No. 13 (Food Grade)
No. 14 (Food Grade)
No. 15 (Food Grade)

NO
No. 3 (Non-Food Grade)
No. 4 (Non-Food Grade)
No. 5 (Non-Food Grade)
No. 6 (Non-Food Grade)
No. 7 (Non-Food Grade)
No. 8 (Non-Food Grade)

GLASS

Bottles and Jars
Any color, shape or size.

Other
No. 1 (Food Grade)
No. 2 (Food Grade)
No. 3 (Food Grade)
No. 4 (Food Grade)
No. 5 (Food Grade)
No. 6 (Food Grade)

Other
No. 7 (Food Grade)
No. 8 (Food Grade)
No. 9 (Food Grade)
No. 10 (Food Grade)
No. 11 (Food Grade)
No. 12 (Food Grade)

NO
No. 1 (Non-Food Grade)
No. 2 (Non-Food Grade)
No. 3 (Non-Food Grade)
No. 4 (Non-Food Grade)
No. 5 (Non-Food Grade)
No. 6 (Non-Food Grade)



A photograph of a wooden sign in a grassy field. The sign is dark brown with yellow text. It is supported by two wooden posts. In the background, there is a dense line of green trees under a blue sky with white clouds. The foreground is filled with tall grass and some green shrubs on the left.

PIMVILLE PRAIRIE

The grasses before you, and many of the plants in the surrounding fields and woods, originate from the Tallgrass Prairies and Savannas that were once present in this region. These Savannas and Grasslands are being preserved using periodic prescribed fires.

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A photograph of a waste lagoon. In the foreground, there is a grassy area with a wooden post-and-rail fence and several strands of barbed wire. A black rectangular sign with yellow text is attached to the fence. The sign reads "Keep Out" on the top line and "Waste Lagoon" on the bottom line. Behind the fence is a body of water, the waste lagoon, which is bordered by a grassy bank. In the background, there is a dense line of bare trees.

Keep Out
Waste Lagoon



A photograph of a dry, hilly landscape. The ground is sandy and covered with sparse, dry, brownish vegetation. In the foreground, there is a white rectangular sign with black text that reads "Mine Tailings Area". The sign is mounted on a metal post. The background shows a sloping hillside with similar vegetation and some scattered rocks.

**Mine
Tailings
Area**



















Large malachite
specimen, Missouri

Large malachite specimen in perfect growth,
with red hematite inclusions
Barnes, Dorset, England

Large malachite specimen
No. 100 #17 1890
Vermont, USA

Large and irregularly shaped specimen
of malachite, Missouri

Large malachite specimen
with hematite
England

Large malachite specimen
Missouri

Large malachite specimen
Missouri



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■ first meeting

- Our first meeting was on Feb 6 2002 with the park management
- EAO outlined the proposed process for an EMS at Lake of the Ozarks SP.



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- train the park staff
 - EMS Team



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- 1 EMS or 2
 - St Joe State Park
 - Missouri Mines State Historic Site



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- Activities
 - brain storming
 - brain writing



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■ Policy Statement

- The employees of St. Joe State Park are committed to caring for and protecting the environment all-the-while preserving and interpreting our natural and culturally significant resources and providing safe and unique recreational and competitive opportunities for visitors. Staff will educate the public and promote environmentally friendly practices, which we will use to diminish pollution, retard erosion, and reduce waste. The implementation of these practices will enhance staff and visitor awareness, minimize impacts from outside sources, and will attempt to improve the environment so that established regulatory standards may be met or exceeded.



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- As Missouri Mines State Historic Site works to preserve and interpret the Federal mine-mill site and key elements of Missouri's diverse mining history, we will do so in a manner that will result in sustained measurable improvement of the state's environment and its natural resources. Whether providing a service to the public or engaging in mandated maintenance duties and construction projects or conducting day-to-day office support functions, the staff of this site will:
- make provisions to comply with or exceed all relevant federal, state, and other environmental laws and regulations;
- reduce use of the world's non-renewable resources;
- commit to the total concept of recycling -- by recycling appropriate wastes and buying recycled products;



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- Faithfully dispose of all non-recyclable waste in an environmentally sound manner;
- improve all site activities, practices, and procedures in a way that will minimize or mitigate any adverse impacts to the environment; and
- clearly communicate this environmental commitment to coworkers, vendors, and visitors.



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- Activities to functions
 - describe everything that you do



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- functions to aspects
 - explain how the things you do interact with the environment



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- aspects to impacts
 - determine any change in the environment resulting from your activities and their interaction with the environment



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- Significant impacts Bubble-up Bubble-down
 - Compare each impact with every other impact and rank them according to the severity/significance of the environmental effect.



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- Legal and regulatory requirements
 - consider all international, federal, state, or local; laws, rules, regulations, ordinances, policies and directives that affect your environmental policy or your operations.



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■ Operations Plan

– The park has an operations plan that outlines many of the required activities at the facility.

- Water and wastewater operations and sampling
- trash and waste collection
- purchasing of materials
- use of vehicles



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■ EMS approach

- Plan
- Do
- Check
- Act



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- developing Objectives and targets
 - select impacts to address and develop steps to improve performance



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- Developing Programs
 - assign responsibilities
 - dedicate resources
 - time
 - equipment
 - personnel
 - \$\$\$



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