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# ***DIRECTIONS FOR NATURAL RESOURCES***

## **An Ecosystem-Based Framework for Natural Resource Management**

**Minnesota Department of Natural Resources  
Strategic Plan**

March 1995



# INTRODUCTION

*DIRECTIONS FOR NATURAL RESOURCES: An Ecosystem-Based Framework for Natural Resource Management* presents the Department of Natural Resources vision and strategic direction for resource management for the next decade.

With a long-term goal of sustainability and a strategic approach of ecosystem-based management, the Department's efforts will focus on creating healthy ecosystems. This will require balancing three fundamental concerns:

- An environment that supports human, animal, and plant life.
- An economy that is strong and sustainable.
- A community that provides a high quality of life.

While there are definite challenges to this approach, much of the work of ecosystem-based management is not a dramatic change or shift, but rather a renewed emphasis on these principles:

**Ecological Approaches:** Recognizing the interrelatedness of natural resources and focusing management on the sustainability of whole ecological systems.

**Environment/Economy/Community:** Recognizing that the economy, the community, and the environment are interrelated and finding solutions that reconcile the needs for economic prosperity, lasting livelihoods, and healthy ecosystems.

**Partnerships.** Working together at the community, regional, and state levels to face problems, identify opportunities, and find common solutions.

Included in this report are DNR's Vision Statement, Definitions for Mutual Understanding, Goals and Strategies to create a framework for ecosystems-based natural resource management, and Guidance for Next Steps—actions for the FY 1996-1997 biennium.

DNR's Vision Statement was developed by the Commissioner's Management Team and adopted by the Senior Managers' Council in 1992, and formally reaffirmed by department employees at their 1994 "DNR Conference: Sustaining Ecosystems." Its purpose is to explain the beliefs and values of our organization and portray the long term future of the department—what we will focus on in fulfilling our mission, how we will do our jobs, and what this means for Minnesota's citizens and resources.

The Definitions for Mutual Understanding presents the relationships of the umbrella concepts of "sustainability", "ecosystem-based approaches", and "ecological integrity". These are the organizing principles for guiding natural resource management and are the foundation for DNR's strategic direction.

The Goals and Strategies for resource management were developed by department staff, the Commissioner's Management Team, and Senior Manager's Council. They form the strategic direction for the organization. Built upon the vision statement, the strategic direction places

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Resource Management as the lead goal for the agency and identifies organizational management goals to support this direction.

The actions presented in Guidance for Next Steps were derived from employee recommendations at the 1994 "DNR Conference: Sustaining Ecosystems" and were developed further by the department's Leadership Team: The Commissioner's Management Team and Senior Managers. These next steps give the department a framework for action during the next two years and present the specific actions the Leadership Team will undertake toward achieving the department's goal for resource management.

## What the Vision Statement Means

### “We”

- ◇ Talented, diverse individuals working together to address complex issues and achieve identified objectives.
- ◇ Participation by all locations, all units, and all levels in consensus building and decision making, and support for decisions that are made with appropriate power and authority.

### “will work with”

- ◇ Acting in a professional, ethical, and respectful manner, listening to and accepting each other’s ideas and differences.
- ◇ Fostering an atmosphere that promotes continuous improvement where excellence is rewarded and innovation is encouraged.
- ◇ Empowering employees appropriately to accomplish identified objectives.
- ◇ Internal and external cooperation, involvement, and participation.
- ◇ Regular and open internal and external communication of plans, actions, decisions, and information.
- ◇ Recognize that management of the state’s natural resources is a shared responsibility of all citizens by developing effective partnerships to address concerns and issues.
- ◇ Educating people about ecosystems and encouraging ethical behavior that leads to the responsible use of natural resources.

### “people”

- ◇ Present resource users and future generations of individuals, and both public and private organizations.
- ◇ Serving impassioned and diverse publics and attempting to reconcile varied interests, values, and cultures.

### “to manage the state’s diverse natural resources”

- ◇ Conserving ecosystems and maintaining ecological integrity while providing for the ethical use of the resources for social and economic purposes.
- ◇ Balancing the need to protect natural resource values with development needs.
- ◇ Preserving unique, threatened, and endangered resources.
- ◇ Preserving unique cultural, historical, and archaeological resources.
- ◇ Improving and restoring degraded environments, and mitigating environmental losses.
- ◇ Integrating all natural resource concerns and perspectives in decision-making processes.

### “sustainable quality of life”

- ◇ Balancing human needs with ecosystem capabilities to ensure the needs of present generations are met without compromising the ability of future generations to meet their needs.
- ◇ Maintaining the integrity of ecosystems to ensure a productive and healthy living environment.
- ◇ Maintaining a sustainable quality of life is a shared responsibility of all citizens, as well as public and private organizations.

## DEPARTMENT OF NATURAL RESOURCES VISION STATEMENT

*“We will work with people to manage the state’s diverse natural resources for a sustainable quality of life.”*

# DEFINITIONS FOR MUTUAL UNDERSTANDING

## Sustainability (A Desired Outcome)

Definition: Sustainability is the achievement of economic and social well-being without damaging the planet's resource base (e.g., its soils, water, vegetation and wildlife).

**What Sustainability Means to DNR:** Sustainability is the expected outcome of all resource management activities. Sustainability requires DNR to protect and restore ecosystems so that their resources can be used indefinitely by present and future generations. Sustainability requires DNR to reconcile human need and demands with the capacity of ecosystems to meet those demands.

*Sustainability, Ecosystem-based Approaches, and Ecological Integrity are umbrella concepts used by DNR as organizing principles for guiding natural resource management. These terms are closely related and are often used interchangeably. To understand their relationship, it may be useful to view sustainability as an outcome, ecosystem-based approaches as a methodology and ecological integrity as a measure or benchmark.*

## Ecosystem-based Approach (A Methodology)

Definition: Ecosystem-based management is the collaborative process of sustaining the integrity of ecosystems through partnerships and interdisciplinary teamwork. Ecosystem-based management focuses on three interacting dimensions: the economy, the social community, and the environment. The goal of ecosystem-based management is sustainability of ecological integrity while simultaneously meeting socioeconomic needs.

**What an Ecosystem-Based Approach Means to DNR:** The approach requires that all DNR disciplines work together in interdisciplinary teams with strong public participation to develop and implement sustainability goals for entire ecological systems. This is different from the old model of "competing multiple-uses" where disciplines work in isolation to improve individual resources.

## Ecological Integrity (A Measurement)

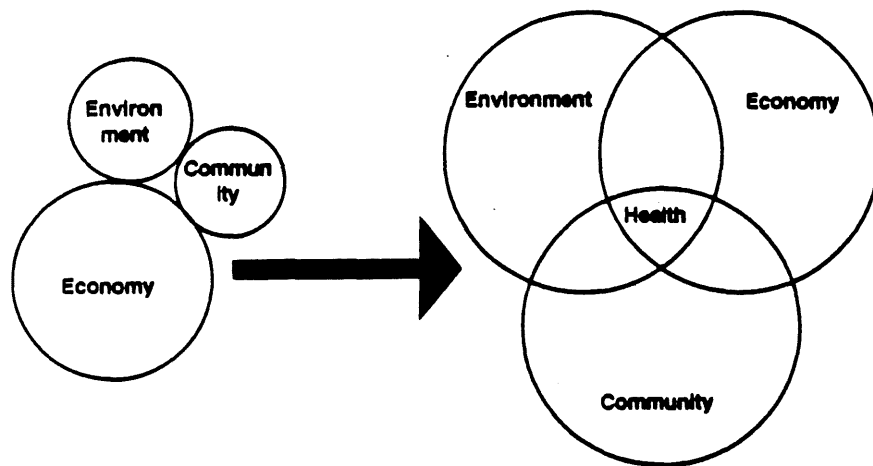
Definition: Ecological integrity is a state of ecosystem development in which habitat structure, natural functions, and species composition are interacting in ways that ensure long-term sustainability of the ecosystem in the face of changing environmental conditions and external stresses.

**What Ecological Integrity Means to DNR:** Ecological integrity can be evaluated by measuring elements of biological diversity and ecological processes. For example, the variety and abundance of species is one biological diversity measure, Nutrient cycling, hydrology, and primary productivity are ecological process measures. Integrating these variables can provide a measure of overall ecosystem health or integrity. Practical measures of ecosystem integrity are essential because traditional economic indicators do not reflect environmental degradation. Resource professionals must develop reference conditions or benchmarks of health for specific ecosystem types in order to identify clear targets for restoration of degraded ecosystem elements and for assessing the sustainability of our actions. Benchmarks should offer a range of conditions under which the ecosystem can best guarantee sustainable production and maintenance of biological diversity

**“ecosystem” means**

- ❑ a dynamic interacting community of organisms (including humans) considered together with their physical environment. Ecosystems are the fundamental units of nature; they are the life support systems for all living things.
- ❑ ecosystems occur at multiple geographic scales, they may be small and simple (an isolated prairie pothole wetland) or large and complex (a specific regional forest or the global biosphere). Ecosystems range from relatively natural through intensively managed to human dominated.

## THE THREE INTERACTING DIMENSIONS OF ECOSYSTEM-BASED MANAGEMENT



**Traditional**

**Ecosystem Approach**

The ecosystem-based approach holds that the economy, the community, and the environment are interrelated components of an ecosystem. Decisions and actions made in one area affect the others. These relationships can be visualized as three interlocking circles. Traditionally, decision-making has separated the three, with little understanding of their linkage.

Ecosystem health depends on (a) an environment that is viable and sustainable (i.e., supports human and non-human life); (b) an economy that is sustainable; and (c) a community that is livable. The intersection of these circles represents the desired state of a “healthy” ecosystem.

Source: 1st International Symposium on Ecosystem Health and Medicine: Integrating Science, Policy and Management. (June 19-23, 1994, Ottawa, Canada.)

# 1 RESOURCE MANAGEMENT GOAL

*“To maintain, enhance, or restore ecosystems to assure ecological integrity while providing for sustainable use of natural resources for social and economic purposes.”*

## Strategies

The DNR has identified nine strategies crucial to the attainment of the vision and resource management goal.

**Ecosystem Approaches:** Implement ecosystem-based approaches that integrate ecological, social, cultural and economic values into natural resource management.

**Teams and Partnerships:** Use interdisciplinary teams and partner with citizens, local government, agencies and other organizations to develop and implement shared management goals.

**Emphasis:** Concentrate efforts on ecosystems of special value or concern, or experiencing the greatest pressure from human activity.

**Sustainability:** Advocate economic, ecological, and social policies that promote the sustainability of ecosystems.

**Stakeholder Involvement:** Create opportunities that engage citizens and public officials in education, discussion and decision-making on natural resource issues and ecosystem-based management.

**Strengths:** Build upon traditional natural resource management to provide products, services, and benefits consistent with a commitment to ecosystem-based management.

**Leadership:** Provide leadership in building capacity to implement ecosystem-based management across multiple ownerships as a means to achieving sustainability.

**Evaluation and Monitoring:** Monitor ecosystems to measure changes in order to guide management.

**Adaptive Organization:** Foster an organization that will continually improve and adapt to changing ecosystem-based management requirements and organization management needs.



## 2 HUMAN RESOURCE GOAL

*“To enhance the ability of the Department of Natural Resources to meet its resource management goal through a commitment to and respect for a skilled, diverse, motivated, and dynamic work force.*

*The goals and strategies outlined in sections 2-5 provide a framework for supporting the resource management goal and strategies through human resource management, internal and external communications, financial management, and operational support.*

### Strategies

**Effective Work Force:** Identify and implement innovative approaches to recruit, select, encourage, reward, and retain a talented and diverse work force.

**Training and Development:** Implement innovative and alternative approaches to train and develop employees in the areas of: working in partnerships and teams; customer relations; ecosystems based resource management; technological and scientific advancements; and organizational leadership, management, and improvement.

**Flexible Work Environment:** Promote a flexible work environment that meets the needs of the organization and its people that would include opportunities for job sharing, mobilities, job enrichment, telecommuting, and variable work schedules.

**Leadership/Empowerment:** Implement human resource policies and unit authorities that support leadership and empowerment throughout the department. Encourage employees to take advantage of the opportunities presented by a changing work environment.

**Ethical Behavior:** Promote ethical behavior at all levels of the department, to include appropriate use of public resources, respect for diversity of employees and other citizens, and avoidance of conflicts of interest and discrimination.

**Health and Wellness:** Create innovative initiatives designed to promote wellness and assure a safe and physically and mentally healthy work environment.

# 3 COMMUNICATION GOALS

## *Internal Communication:*

*“To ensure the timely, accurate, relevant, and unobstructed flow of information within the department in all directions.”*

## *External Communication:*

*“To create opportunities that engage citizens in productive dialogue on natural resource issues and department initiatives, and to promote and acknowledge customer and stakeholder input.*

*“To maintain the department’s commitment to providing citizens with natural resource information and information regarding the department’s goals and strategies.”*

## **Strategies**

### **Internal**

**Accuracy:** Support internal communications processes with feedback mechanisms that ensure messages are received accurately and are interpreted correctly.

**Training:** Recommend communication skills training for employees to give them the tools to improve the quality of their communication efforts.

**Technology:** Improve our ability to communicate internally by using state-of-the-art technology.

### **External**

**Tools for External Involvement:** Promote the use of such tools as market research, communication planning, focus groups, roundtables, and other methods to engage customers and external stakeholders in the resource management process.

**Coordinated Environmental Education:** Provide support and direction in environmental education to ensure a coordinated approach to the development and implementation of these efforts within the DNR.

**Anticipate Conflicts:** Improve our ability to anticipate and minimize conflict through active external communication efforts.

**Manage Conflicts:** Improve our ability to manage and resolve conflicts.

**External Relations:** Support the development and implementation of the DNR Good Neighbor Policy.

## 4 FINANCE GOAL

*“To develop DNR fiscal and budgetary policies and processes that enable the department to achieve its resource management goal.”*

### Strategies

**Viable Funding Options:** Recommend viable funding options to support ecosystem-based resource management actions and other departmental priorities.

**Internal Budget Flexibility:** Identify ways to enhance internal budget flexibility in order to address departmental priorities more effectively.

**External Support:** Identify appropriate ways of working with constituents and the legislature to gain support for department budget priorities.

**Enhance Existing Commitments:** Identify and evaluate existing budgetary commitments to ecosystem-based management. Based on these results determine additional opportunities for efficiently and effectively moving the department toward its vision.

## 5 OPERATIONS SUPPORT GOAL

*“To ensure efficient and effective delivery of services in support of the DNR’s resource management goal.”*

### Strategies

**Information & Operations Management Systems:** Establish information and operations management systems which provide resource managers with an improved understanding of the costs and benefits involved in the department’s operations support services.

**Partnerships:** Develop partnerships of customers and support providers to resolve operations support issues through work teams and evaluative feedback processes.

**Continuous Improvement:** Continue to pursue improvement opportunities to ensure efficiency and effectiveness of support operations.

# GUIDANCE FOR NEXT STEPS

*The actions outlined comprise the next steps the DNR and its Leadership Team will undertake toward achieving the five goals for natural resource management. These actions were distilled from the ideas of three hundred Department employees who met in December of 1994. They were developed to guide the agency while providing flexibility in pursuing our responsibilities. They are seen as challenges for which each employee, discipline, bureau and region should feel a responsibility.*

## **Actions**

### **1 Develop and implement an approach for communicating within the department and working with stakeholders.**

#### **In the next biennium the department will:**

- Initiate discussions with all DNR employees on ecosystem-based natural resource management.
- Partner with stakeholders to advance ecosystem-based management principles.
- Communicate our ecosystem-based management successes within the department and with our external stakeholders.

#### **In Fiscal Year 1996 the leadership team will:**

- Expand opportunities for employees to share and discuss what they are learning about ecosystem-based management, using existing forums such as discipline schools and town meetings.
- Conduct information meetings throughout the state to ensure that all employees hear about *Directions* and the 1994 "DNR Conference: Sustaining Ecosystems" results.
- Engage the 1995 legislature and stakeholders in discussions to enhance understanding of ecosystem-based management and sustainability.

### **2 Support interdisciplinary team work.**

#### **In the next biennium the department will:**

- Empower employees at each level of DNR with similar authorities so they can work effectively in interdisciplinary teams.
- Continue the process of working with employees, union leadership, and DNR management to agree on terms under which employees can work across discipline lines.

# GUIDANCE FOR NEXT STEPS

- Support area, regional, and central office “back home” teams in developing and implementing work plans that emphasize ecosystem-based management.

## **3 Support regional plans and work plans.**

### **In the next biennium the department will:**

- Put greater emphasis on developing and implementing regional landscape plans as well as the annual regional work plans.
- Encourage regional and area teams to work with stakeholders to identify ecosystems of special concern and/or facing the greatest pressure from human activity and to discuss these needs with central office program managers.
- Encourage central office and field managers to adjust priorities at each level (region and area teams, for example) to include interdisciplinary ecosystem-based natural resource priorities.

### **In Fiscal Year 1996 the leadership team will:**

- Actively and cooperatively participate in the regional and area landscape plan and work plan development and implementation processes.

## **4 Integrate division, bureau, and regional work plans and budgets.**

### **In the next biennium the department will:**

- Integrate division, bureau, and regional work planning and budgeting.
- Link regional and central office interdisciplinary priorities with budget allocations to implement ecosystem-based management.

### **In Fiscal Year 1996 the leadership team will:**

- Design an integrated work planning and budgeting process that:
  - Focuses on the department’s common priorities.
  - Provides a schedule for planning and budgeting with commonly agreed-upon decision points.
  - Includes time lines and processes for spending plans.

## **GUIDANCE FOR NEXT STEPS**

### **5 Establish standards for evaluating and monitoring ecosystem-based management efforts that will guide future management.**

**In the next biennium the department will:**

- Encourage staff to work with watershed coordinators and natural resource planners to develop criteria for evaluating ecosystem-based management efforts.

**In Fiscal Year 1996 the leadership team will:**

- Coordinate development of evaluation and monitoring standards through the leadership of the Resource Management Committee and the Ecosystem-Based Management Coordinator.

### **6 Use the Senior Managers' Council to proactively identify and resolve contentious policy level natural resource issues and share information on decisions made.**

**In Fiscal Year 1996 the leadership team will:**

- Take responsibility to resolve contentious natural resource management issues using Senior Managers, the Resource Management Committee, etc. and consistently communicate issues and their resolution to the organization.
- Address wetlands/waters issues through internal and external forums and develop legislative recommendations.
- Support the internal DNR group currently addressing the environmental review process and reach agreement on the process, its staffing and decision making and support.

### **7 Re-emphasize the importance of serving traditional stakeholders.**

**In the next biennium the department will:**

- Affirm that the DNR will continue to provide services to traditional stakeholders while recognizing that some resource management approaches will change.

**In Fiscal Year 1996 the leadership team will:**

- Continue strong relationships with traditional stakeholders and continue to develop partnerships with them in ecosystem-based management.

# GUIDANCE FOR NEXT STEPS

## **8 Expand and stabilize environmental education.**

### **In the next biennium the department will:**

- Take steps to implement those parts of the statewide Environmental Education Plan (*Greenprint*) for which DNR can be responsible.

### **In Fiscal Year 1996 the leadership team will:**

- Thoroughly examine the *Greenprint* recommendations and decide which elements DNR can take responsibility for given budget constraints.

## **9 Examine plans and implement necessary pieces for Geographic Information Systems (GIS) and Local Area Networks (LANS).**

### **In the next biennium the department will:**

- Review the DNR's GIS, LANS, and Statewide Systems Project (SSP) plans, update those plans with respect to budget, and implement plans.
- Continue to direct staff and funds to collecting, managing, and making available high quality natural resource inventory data.

### **In Fiscal Year 1996 the leadership team will:**

- Communicate GIS/LANS/SSP plans, priorities, importance, costs, and commitment to employees.
- Initiate a pilot GIS project to gather data on one specified area in the state.

## **10 Continue to pursue improvement opportunities to ensure efficiency and effectiveness of support operations.**

### **In the next biennium the department will:**

- Improve the work planning process by ensuring Operations Support costs are included and understood.

### **In Fiscal Year 1996 the leadership team will:**

- Inform program staff on the improvements that are being made in Operations Support areas.

