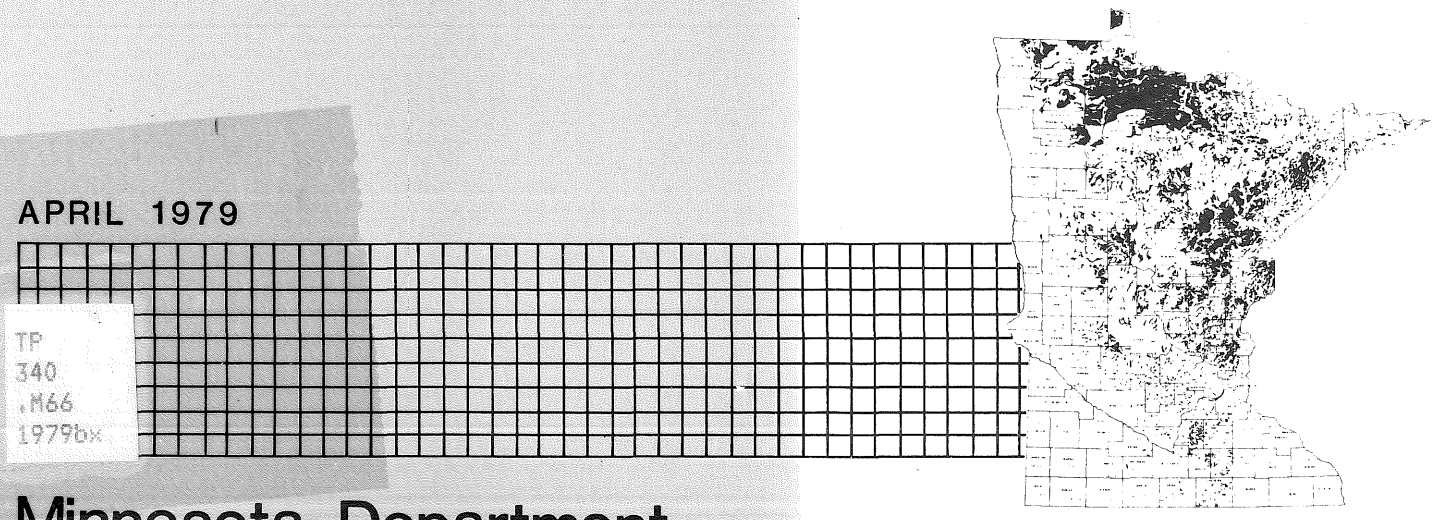
MINNESOTA PEAT PROGRAM

POLICY REPORT



APRIL 1979

Minnesota Department of Natural Resources

MINNESOTA PEAT PROGRAM

MANAGEMENT GOALS AND OBJECTIVES

AND

POLICY ALTERNATIVES

PREPARED FOR THE MINNESOTA STATE LEGISLATURE

BY THE

DEPARTMENT OF NATURAL RESOURCES

APRIL 1979

FOREWORD

The Minnesota Peat Program commenced three and one-half years ago. Since that time there have been 27 separate studies evaluating the environmental, social, and economic consequences of utilizing peatlands. This report on "Management Goals and Objectives and Policy Alternatives" is a necessary step in the development of a sound peatland management policy for the state of Minnesota.

At the writing of this report, field studies are still underway. Final results from some of these studies will not be available until later this year. It is anticipated that the State's peatland management policy will be periodically modified as additional information becomes available.

Original funding for the Minnesota Peat Program was provided by the Upper Great Lakes Regional Commission. Subsequent funding has been provided by the Minnesota Legislature and the Legislative Committee on Minnesota Resources.

The Department of Natural Resources is greatly indebted to the members of the Peat Advisory Committee for their advice and assistance in the development of a peatland policy.

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PEAT PROGRAM MANAGEMENT
GOALS AND OBJECTIVES

The economy of northern Minnesota, the location of the majority of the states peatlands, is dependent on natural resource enterprises. Growing demands on these natural resources (mineral, timber, peat) combined with the desire of many people to seek solitude through ourdoor recreation experiences can result in many land use conflicts. One of the responsibilities of the DNR is to avoid land use conflicts through wise stewardship of public lands and resources.

In this context the overall management goal of the Department for the state's peat resources is to assure the benefits of the land and its resources for the use and enjoyment of present and future generations. It is believed that the following management objectives are compatible with this goal.

1. TO ENSURE THE PROPER USE OF THE PEAT RESOURCE

Through the collection and analysis of site specific information (e.g. resource parameters, reclamation potential, environmental sensitivity, marketing and transportation opportunities, land use capabilities and conflicts) a determination can be made concerning the proper use for a particular peatland.

2. TO DEFINE AND DEVELOP PEATLAND MANAGEMENT UNITS

Peat resources will be divided into management units based upon information obtained under objective number 1. A management plan for each unit will be prepared. One or more utilizations will be adopted and the unit managed accordingly.

3. TO CONTROL THE RATE OF DEVELOPMENT

Leasing should proceed slowly until we have a better understanding of the peatland's best utilization.

4. TO MAINTAIN ENVIRONMENTAL QUALITY

Development activity has an environmental risk associated with it, particularly the development of somewhat unfamiliar resource. Thus, it is necessary to require sound environmental development practices.

5. TO ENSURE FUTURE LAND USE CAPABILITIES

A major concern of the DNR is to ensure that peatlands, once harvested or otherwise disturbed, can be reclaimed for other uses.

6. TO CONTINUE THE PEAT INVENTORY AND ENCOURAGE RESEARCH

Continued research will be necessary to provide a basis for sound management decisions. Completion of the peat inventory is particularly important to meaningful resource planning and preservation.

7. TO MAINTAIN INTER-GOVERNMENTAL COOPERATION

Peat development will be subject to local ordinances relating to the location, construction, operation, and impacts associated with the project. A cooperative approach with county, state and federal agencies, and private interests is important.

The policy recommendations which follow will help to implement the management objectives and ultimately result in the attainment of the overall management goal.

PEAT PROGRAM POLICY SUMMARY

The following policy statements summarize the results of an evaluation of policy alternatives for peatland management by the Department of Natural Resources. Detailed evaluations of policy issues including alternatives and justification for determining each policy are presented following the summary.

I. LEASING

The Department of Natural Resources will determine which peatlands are available for lease based on development interests and site specific information on the resource.

Leases will be awarded on the basis of a Bid-Proposal mechanism.

II. UTILIZATION ALTERNATIVES FOR PEATLANDS

A. Horticultural Leasing

General

During the next biennium the Department will guide the development of horticultural uses of peatlands through its leasing program. Specific peatlands will be identified by the Department for horticultural lease.

Size

Horticultural leases for individual operations will be limited to 3000 acres during the next biennium and will be managed in 1000 acre units.

Rents

Rents will be charged on a per-acre basis. Rents will be bid

beyond an established minimum.

Royalties

Royalties for horticultural peat leases will be calculated as a percentage of the gross price of the product shipped FOB plant site, or a flat rate per bale, whichever is greater. The standard six cubic foot bale will be used as the basis for calculations. Royalty rates will be determined by bidding above a fixed minimum.

B. Agricultural Leasing

General

The Department intends to allow the limited development of agricultural uses of peatlands during the next biennium.

Size

For the next biennium agricultural leases for individual operations will be limited to 640 acres.

Lease Term

The Department will seek legislation that amends Minnesota Statutes 92.50 to allow extending the maximum lease term for agricultural uses from 10 to 25 years.

Rents

Rents will be charged on a per acre basis with actual amounts above an established minimum to be negotiated with individual lease applicants. Rents will be escalated or renegotiated periodically over the term of the lease.

Royalties

No royalties will be charged for agricultural peat leases as long as the peat is not extracted. Sod farming would be considered extractive and royalties assessed.

C. Conservation of Peatlands

The Task Force on peatland preservation (formed to establish selection criteria and recommend areas of special interest) will continue its activities over the next biennium. Selection criteria developed by the Task Force will be used to identify peatlands for preservation. The Department will give consideration to any rare, unique, or special characteristics of a peatland before making a leasing decision.

Until further studies are concluded no peat leases will be approved within the Upper Red Lakes and Lake Agassiz Peatlands National Natural Landmarks.

D. Chemical/Industrial Uses

Although there are no proposals before the DNR to lease peat for chemical/industrial uses, the Department would consider the small-scale use of peatland (640 acre maximum) for this purpose.

Until more is known about chemical/industrial uses of peat, a large-scale project (greater than 640 acres) will not be supported.

The Department will encourage additional study of chemical/industrial uses of peat during the next biennium.

E. Forestry Utilization

Forest uses will be considered when evaluating peat lease application for other purposes. A peat lease for other uses will not be granted in cases where there is high potential for forest management.

Where a commercial forest occurs on lands to be leased for a non-forest use, the lessee shall pay stumpage prices and remove the timber.

F. Small-Scale Fuel Development

At present there are no lease applications for small-scale utilization of peat as a fuel (direct burning or gasification) or for the production of biomass. The Department would consider a small-scale demonstration project if proposed. Small-scale is defined as the production of 25 megawatts or less of electricity or an equivalent amount of steam heat. Peatlands leased for a demonstration project will be limited to 640 acres.

G. Large-Scale Fuel Development

The Department will hold proposals to develop large tracts of peatlands for fuel purposes in abeyance during the coming biennium. Completion of studies proposed by the U.S. Department of Energy, the DNR, and Minnegasco for the next biennium will provide better direction for managing large scale peat extraction activities.

II. SPECULATION

Peatland speculation will be discouraged through the use of "Diligent Development" requirements contained in state peat leases. That is, a set amount of development would have to occur within specified time periods.

III. ENVIRONMENTAL MONITORING

Environmental monitoring of peat operations, including but not restricted to permit and lease conditions, will be required. Monitoring will include air, biological, and water quality parameters. Costs of monitoring will be the responsibility of the lessee. Long-term, post-project monitoring may be required as part of a reclamation plan.

All developments of peatlands authorized by state lease shall be conducted in an environmentally sound manner and pollutants shall be controlled or contained on the site.

IV. DRAINAGE OF PEATLANDS

Any proposal to drain peatlands is subject to the permit requirements of Minnesota Statute 105.41 and related laws.

V. RECLAMATION

Reclamation of peatlands will be required of all lessees who disturb state-owned peatlands by their actions. No lease will be granted without first establishing a reclamation plan.

To ensure compliance with the reclamation plan, a surcharge, bond, or other mechanism will be required in the lease agreement.

VI. CLASSIFICATION OF PEAT

The Department will, during the next biennium (July 1979-June 1981), continue its policy of leasing peat as a surface interest and not as a mineral interest.

VII. SALE OF PEATLANDS

Consistent with Minnesota Statutes 92.461, no peatlands of commercial value will be offered for sale.

VIII. BURNING OF PEATLANDS

All leased use of peatlands will prohibit the practice of burning the peat resource for land preparation.

I. INTRODUCTION

During the 1977 session of the legislature, the Department of Natural Resources developed a program for evaluating peat resources for the state of Minnesota. This program contained several objectives that would be completed by the 1979 legislative session as well as objectives that would continue beyond the 1979 session.

These objectives were:

1. To gather socio-economic, environmental and resource data necessary to evaluate small and medium sized requests for leases of state owned peatlands. Such requests will generally involve the use of peat for agricultural and horticultural development. This data will also provide the basis for the identification of peatlands that should be preserved in their natural state.

2. To complete the Peat Inventory Project begun in July, 1976.

3. To determine appropriate royalties for state leases and evaluate possible alternatives for taxation of the peat resource.

4. To evaluate alternatives for state leasing of peatlands.

5. To formalize the lease application and review process.

6. To study the legal classification of peat (i.e. whether it is a surface or mineral interest).

7. To begin research on agriculture, forestry, horticulture, chemical/industrial, and energy uses of peat including environmental impacts

associated with these uses and possible reclamation alternatives.

8. To complete information-gathering activities on socio-economic, environmental, and resource projects in order to address large-scale development requests.

9. To formulate long-term policy alternatives for management of the state's peatlands.

10. To accelerate basic and applied research on priorities established by legislative policy.

II AUTHORITY TO REGULATE PEATLANDS

A. LEASING

About 50 percent of the peatland in the State of Minnesota is in public ownership. The State either directly owns these peatlands or holds them in trust for local taxing districts, as is the case with many lands which were forfeited for nonpayment of taxes. The State has the responsibility to regulate the development of peat on lands owned by it. Peatland owned by the State is administered by the Commissioner of Natural Resources. The Commissioner may, pursuant to Minnesota Statutes Section 92.50, "lease any state-owned lands under his jurisdiction and control for the purpose of taking and removing . . . peat . . ." Under this section of the statutes, a peat lease may be granted by the Commissioner for a term not exceeding 25 years, subject to the approval of the State Executive Council.

As a landowner the State may determine which of its lands it wants to develop and how such development will be carried out. The State regulates or otherwise directs the development of leased peatlands through conditions of the lease agreement.

In addition to the peatlands owned outright, lands containing peat which have been forfeited for nonpayment of taxes are held by the State in trust for the taxing districts which have the interest in the land (Minn. Stat. Sect. 281.25). The law (Minn. Stat. Sect. 282.04) authorizes the County Auditor, with the approval of the county board and the Commissioner of Natural Resources, to grant leases for the removal of peat from these tax-forfeited lands. Such leases can be granted for a term not exceeding 25 years. Before

any lease can be granted, however, a public hearing must be held concerning the intention of the county to lease. Again, terms of the lease agreement regulate the development of the peat resource.

In summary, there can be extensive regulation of certain peat developments by virtue of the fact that the public owns the peatlands. Obviously the State cannot control development by means of lease conditions on land which it does not own. Peat developments on private lands as well as those on public lands may be subject to other types of regulation. The following discussion relates to the requirements which may apply to all peat projects, whether on private or public land. A particular peat development may be subjected to a greater or lesser degree to these categories of regulation, depending on the extent, location, and nature of the peat operation.

B. DRAINAGE OF PEATLANDS

1. Water Appropriation: In certain situations a water appropriation permit may be required from the Department of Natural Resources before a peat developer could legally dewater or drain a peat bog for purposes of harvesting peat. Minnesota Statutes 105.41, Subdivision 1, states that: "It shall be unlawful for any person . . . to appropriate or use any waters of the State, surface or underground, without a written permit of the Commissioner . . . ."

   In some circumstances draining a peatland may be considered the use or appropriation of waters of the State within the meaning of the statute. If so, a permit is required. If a permit is granted, the Commissioner may include conditions in the permit. Specifically, under the statute he may "include therein such terms and reservations. . . .as appears reasonably necessary for the safety and welfare of the

people of the State." (Minn. Stat. Section 105.45).

2. Course, Current or Cross-Section: A peat development also may require a permit under another provision of Minnesota Statute Chapter 105. Section 105.42 states that it is unlawful "in any manner to change or diminish the course, current or cross-section of any public waters . . . without a written permit from the Commissioner previously obtained." If a peat project involved putting a dike or other obstruction in public waters, or increasing the flow of a public water course, a permit may be required under this section of the law. Again, the Commissioner may include such conditions in the permit as appear reasonably necessary for the safety and welfare of the people of the State. (Minn. Stat. Section 105.45).

C. FIRE PERMITS

There is one other permit which may, in some instances, be needed for certain work in peatlands. Minnesota Statutes Section 88.16 prohibits any open fires in any place "Where there is peat or peat roots excavated or growing. . ." without the written permission of the Commissioner or other authorized forest officer.

D. DISCHARGES FROM PEATLANDS

The Pollution Control Agency's (PCA) regulatory authority centers on air and water quality. Minnesota Statutes Section 115.07 provides that it is unlawful for any persons to construct or operate a disposal system until a permit shall have been granted for it by the PCA. The Statute defines a disposal system as "a system for disposing of sewage, industrial wastes and other wastes" (Minn. Stat. Section 115.01, subd. 8.). It then defines "other wastes" as certain named materials as well as "all other substances. . .

which may pollute or tend to pollute the waters of the state" (Section 115.01, subd. 4). The discharges from the drains or ditches in a peat operation may trigger the permit requirements of Section 115.07.

The discharge permit requirements are contained in the PCA's Code of Agency Rules WPC 36. The permits are known as NPDES Permits (National Pollutant Discharge Elimination System) established by the Federal Water Pollution Control Act Amendments of 1972. A peat operation may be required to obtain NPDES permits.

In addition to the NPDES permit rules, other PCA rules establish specific water quality standards for various waters of the State that may be affected by a peat operation.

E. AIR QUALITY

The Pollution Control Agency also has air quality rules and it is possible that a peat operation may fall within their scope. APC 1 establishes ambient air quality standards for certain pollutants and prohibits levels from being created in excess of those standards. The standards for particulate matter may be of concern to certain types of peat operations. APC 5 sets standards of performance for industrial processing equipment which may emit pollutants including particulate matter.

APC 6 requires that the use of open areas and the transportation and storage of material be carried out in such a way as to prevent avoidable amounts of particulate matter from becoming air borne.

APC 8 prohibits open burning without an appropriate open burning permit from the PCA.

These are all rules which could possibly affect peat operations and which come under the jurisdiction of the Pollution Control Agency. The application of these rules to a particular peat operation will vary depending on the nature of the activities carried out during the peat development.

E. ENVIRONMENTAL QUALITY BOARD

The EQB is responsible for carrying out the environmental impact statement requirements of Minnesota Statutes Chapter 116D. Any person planning a large-scale peat development should study the EQB rules which are codified as 6 Minnesota Code of Agency Rules, S 3.

The Minnesota Environmental Policy Act (Chapter 116D.) requires an environmental impact statement wherever there is potential for significant environmental effects resulting from any major governmental action or from any major private action of more than local significance (Minn. Stat. Sect. 116D.04.). The EQB rules require a preliminary document, called an Environmental Assessment Worksheet, for various categories of projects which are specified in the rules. There are several of these mandatory categories in which a peat operation would probably fall. If a peat operation would involve the clearing and draining of large acreages of land, an environmental impact statement may be required prior to development. When an EIS is required, no governmental agency can issue permits for the project until the EIS has been approved as adequate. The applicability of the EIS rules to a particular development will depend upon the size, nature and location of the peat operation.

F. CERTIFICATE OF NEED

It is possible that the Minnesota Energy Agency Act (Minn. Stat. Chapter 116H.) would also be relevant to a peat development project. Minnesota Statutes Section 116H.07 gives the director of the Energy Agency the duty to require a Certificate of Need for the construction of large energy facilities.

The requirement of such a Certificate of Need is detailed in Section 116H.13. If a peat development project would involve the gasification of peat, the project may fit the definition of a large energy facility and require a Certificate of Need. Such a requirement would not apply to horticultural peat development and may not apply to certain other energy or chemical peat development projects.

G. SALE OF PEATLANDS

There are various other statutes which mention peat in specified contexts. Many of the references concern the use of the resource on lands upon which taxes have not been paid. There is, however, one important statute which should be noted because it deals with the sale of peatlands in public ownership. Minnesota Statutes Section 92.461 states that "all lands now or hereafter owned by the state which are chiefly valuable by reason of deposits of peat in commercial quantities are hereby withdrawn from sale." Thus, there exists a legislative directive that there be no future sale of peatlands by the State to private developers.

H. LOCAL REGULATION

It is also possible that peat development will be subject to local ordinances concerning the location, construction, operation, and affects of the project. Such local zoning or other type of regulation will vary from community to community and therefore cannot be addressed in any detail here. However, the possibility of local regulation should be noted.

III EVALUATION OF POLICY ALTERNATIVES

Each peatland management policy issue contains four sections describing: background information, alternatives considered, a discussion of the alternatives, and an action section that indicates what the Department will do to impliment the alternative selected. The policy issues are discussed in the same order as they appeared in the Summary at the beginning of this report.

A. LEASING

Background

Currently, there are three large horticultural peat leases in existence amounting to about 5,000 acres. In addition, there are 15 peat lease applications for State-owned peatlands totalling 241,280 acres. Past lease requests were negotiated with individual lease applicants to determine the acreage to be leased as well as royalty and rent amounts. Since 1977, large scale, long-term peatland lease applications have been held in abeyance pending completion of the biennial studies.

Alternatives

1. The state could grant all pending lease applications on peatlands.
2. The state could ban all peat leasing for an additional two years.
3. The state could select the peatlands to be leased based upon available resource information and development interese and offer these peatlands on the basis of a Bid-Proposal System.

Discussion

The Department has chosen alternative three for leasing of state-owned peatlands. This alternative allows the State, rather than the developer, to select the lands to be leased and places the Department in a management

rather than reactive role. Once peatlands suitable for development are identified by the Department, leases will be awarded on the basis of a bid-proposal system. That is, all interested parties will submit a bid for rents and royalties on the peat and a proposal detailing how the development will take place (see Appendix B for a Sample Contents of a Peat Lease Application). Peat leases will be awarded on the basis of both royalty/ rental amounts and the proposed development scheme. Negotiation may take place to finalize development plans after the potential lessee is selected.

Because it is the Department's desire to proceed in the development of Minnesota's peatlands in a cautious manner, alternative one was rejected because the Department would be reacting to requests rather than managing the state's peat resource. Also, granting all peat lease requests would commit a substantial portion of the state's peatlands to development. Alternative two was rejected because the Department feels that a limited expansion in peatland development can occur.

Action

In the next two years the Department will select peatlands to be made available for development and will offer these lands for lease as necessary resource and environmental information is prepared.

B. UTILIZATION ALTERNATIVES

1. HORTICULTURE

Background

Twenty-three of the 42 states with peat deposits produced commercial peat products in 1976. Most of the products were produced for general soil improvement. Minnesota currently has 3 or 4 horticultural peat operations producing less than 2.7% (26,429 short tons) of the total U.S. horticultural

peat production of 1976.

Both sphagnum and reed-sedge peats are extracted for horticultural uses. Almost all of the commercially harvestable sphagnum in the lower 48 states is located in Minnesota. Current estimates indicate that there are only 150,930 acres of sphagnum peat deposits in Minnesota representing 2.1 percent of Minnesota's total peatland area. Of this amount only 25,870 acres, or 0.36 percent of the total peatland acreage in Minnesota, is considered to be of prime commercial value.

Demand for peat has always exceeded domestic supply in the U.S. In 1977, 29 percent of the peat sold in the U.S. was imported, 95 percent of which came from Canada.

At present there are 14 horticultural lease applications amounting to 41,280 acres.

Alternatives

1. The state could grant all existing horticultural lease applications.
2. The state could ban all horticultural peat leasing for the next two years.
3. The state could grant horticultural peat leases for selected lands during the next two years.

Discussion

Alternative one was rejected because this would result in a major commitment of the state's limited sphagnum resource. Also the present available information on potential environmental impacts cannot be extrapolated to projects greater than about 1000 acres in area. In addition, based upon past development progress, the lands requested far exceed the acreage that

could be developed within a 25-year lease. The Department feels it is necessary to proceed cautiously in the development of Minnesota's peatlands because these resources are non-renewable.

Alternative two was rejected because a complete ban on horticultural development would be unreasonable for the next two years.

Alternative three was chosen because certain lands selected by the Department could be developed without a major commitment of the sphagnum peat resource. Based upon the preliminary results from ongoing and completed studies, the Department concludes that the environmental impacts from small horticultural operations (about 1000 acres) could be mitigated and contained on the site.

Action

During the next two years the Department will select peatlands to be made available for horticultural development and will offer these lands for lease as necessary resource and environmental information is prepared.

Size

The Department has established a maximum size of 3000 acres for individual horticultural peat operations. This maximum size is consistent with the largest peat lease presently found in Minnesota. At this particular peat operation, 900 acres of peatland have been opened in 20 years of mining. At present, no potential lessee has demonstrated that they can utilize more than 3000 acres in 25 years.

The Department established 1000 acre management units because that was the size for which hydrology and water quality effects are known. The potential impacts of larger operations are presently unknown.

Rents

Rents will continue to be charged on a per acre basis. Rents are required to ensure the state receives a return in exchange for use of the land. Rental amounts will be bid beyond an established minimum.

Royalties

Background

Four general criteria were used to evaluate alternative methods of determining royalties:

1. Fair return to the state.
2. Adaptability to changing economic conditions.
3. Ease of administration.
4. Bias toward producer size.

Alternatives

1. Royalty as a fixed amount for each cubic yard of peat in place at the lease site.
2. Royalty as a fixed amount for each unit (bale, ton, etc.) extracted, produced or sold from the lease premises.
3. Royalty as a variable amount depending upon production levels.
4. Royalty as a fixed minimum or as a percentage of the FOB price of the product per unit shipped and/or sold, whichever is greater.

Discussion

Alternative one was rejected because it is difficult to determine the volume of peat in place (unit conversions are required) and because this system is not responsive to changing economic conditions.

Alternative two was rejected because it also is unresponsive to changing economic conditions (presently rising values) and because it is doubtful that a fair return to the state could be achieved over the life of the lease.

Alternative three was rejected because it would be difficult and costly to design and implement. Also, this alternative could favor large producers.

Alternative four was selected because it contains a built-in escalator clause which enables the royalty to keep pace with changing market conditions while guaranteeing a fixed minimum return for all production. This method of determining royalty is easy to administer and does not favor large vs. small producers. The system is currently the most favored by the U.S. Department of Interior for extractive leases.

2. AGRICULTURE

Background

About 678,000 acres or 8.9% of Minnesota's peatlands are used for agriculture. Crops grown on peatlands in order of descending acreage are: hay-pasture, row crops, wild rice, turf grass, grain crops, vegetable crops, and grass seed crops. Hay-pasture is by far the most dominant agricultural use, utilizing 6.9 percent of the state's peat resources. Most agricultural uses of peatlands occurs on private lands in west-central and southwestern Minnesota. At present, there are just a few applications for agricultural uses of state-owned peatlands.

Alternatives

1. The state could grant all agricultural lease applications or exchange lands as requested.
2. The state could select peatlands to be leased based upon available resource information and development interest.
3. The state could grant selected agricultural lease applications.
4. All agricultural leases or requests for land exchanges for state-owned peatlands could be denied.

Discussion

Alternative one was rejected because uncontrolled development may result in conflicts with other potential uses. Alternative two was rejected because the agricultural utilization of peatlands varies with location and therefore must be addressed on a site specific basis. Alternative three was chosen in anticipation of agricultural lease applications within the next two years. This alternative allows the Department to evaluate each application in terms of location with respect to agricultural market and potential use conflicts. Alternative four was rejected because some agricultural development could occur without a significant commitment of the resource or substantial environmental impact.

Action

The Department will review agricultural lease applications as received over the next two years and grant, deny, or modify those requests.

Size

The Department has established a maximum size of 640 acres for individual agricultural peat operations.

Lease Term

Comments received at public information meetings have indicated that the present 10-year lease term deters potential agricultural lease applications since a considerable investment is needed for land clearing and drainage. For this reason, the Department intends to seek legislation amending Minnesota Statutes Section 92.50 to modify the maximum lease period to 25-years for agricultural leases.

Rents

As with horticultural leases, rents would be charged on a per acre basis. The major advantage of this system is the ease of administration. Rents are desirable as a fair return to the state for use of the land. Alternative methods for determining rental amounts include: (1) basing rents upon property taxes paid for agricultural land in the area and (2) basing rents upon the value of the crop. The Department is actively working on a selection of the rental method.

Royalties

Royalties will not be charged for agricultural peat leases since the peat would remain on the site. An exception would be sod farming where a loss of peat is inevitable. Royalties in this instance would be a percent of the F.O.B. price.

3. CONSERVATION

Background

The peatlands of Minnesota are among the last of the large under-developed wilderness areas in the United States. Less than 10 percent of Minnesota's seven million acres of peatland have been developed, leaving more than

six million acres that are still relatively undisturbed. Within this expansive wilderness are areas that support unique flora and fauna, represent unusual peatland patterns (e.g. raised bogs, string fens . . .), or contain peat profiles that exhibit important paleontological records. Careful management of Minnesota's peatlands should include the preservation of unique, scientific, and recreational areas. A "Peatlands of Special Interest" task force has been formed to act as a technical advisory committee to the Minnesota Peat Program. Members of the task force will develop criteria for selecting peatlands of special interest and will identify areas of priority. An aerial photo inventory of peatland features is being prepared to assist the efforts of the task force.

Criteria for identifying peatlands of special interest have not been completed. In the interim the criteria established by the National Natural Landmarks Program and the Scientific Areas Preservation Council will be used as a guide.

Alternatives

1. Preserve all peatlands as wilderness areas.
2. Provide no preservation of peatlands as wilderness areas.
3. Preserve selected peatlands based upon their rare, unique or special characteristics.

Discussion

Alternative one was rejected because it is impractical to preserve all of Minnesota's peatlands. Alternative two was also rejected because Minnesota's peatlands contain some of the most unique features found in the world. Also,

certain peatlands have already received state and federal recognition. Alternative three was chosen because certain peatlands should be preserved because of their rare, unique, or special characteristics. Until recommendations by the "Peatlands of Special Interest Task Force" have been completed, each peatland considered for lease will be evaluated utilizing the criteria mentioned previously. In addition, no peat leases will be approved within the Upper Red Lakes and Lake Agassiz Peatlands National Natural Landmarks. These two areas have already been given special attention by state and federal agencies. About 160,000 acres of peatland are set aside temporarily by this action.

Action

The Department's task force on peatland preservation will continue its activities over the next two years in the development of peatland preservation criteria and in recommending areas of special interest.

4. CHEMICAL/INDUSTRIAL

Background

Chemical/industrial uses of peat includes such products as activated carbon, coke, waxes, steroids, carbohydrates, humic acids and tars. Not all peats are equally suitable for chemical production and the feasibility of this technological alternative depends on the chemical composition of Minnesota's peat. A study is now underway in cooperation with the Peat Inventory Project to evaluate the chemical composition of several peatlands in Minnesota with regard to their suitability for chemical/industrial uses.

Acreage requirements for peat chemical plants appear to be relatively small. Approximately 1200 acres is needed for peat carbohydrates, 560 acres for peat coke, and 220 acres for peat wax production. These requirements assume a 20-year plant life. The potential waste discharges associated with the chemical utilization of peat have not been studied and are largely unknown. At present, there are no lease applications for chemical/industrial uses of peatlands.

Alternatives

1. The state could grant all lease applications for the chemical/industrial uses of peat.
2. The state could grant selected lease applications for chemical/industrial uses, limiting their size and extent.
3. The state could deny all lease applications for chemical/industrial uses.

Discussion

Alternative one was rejected because not enough is known about the potential air and water quality impacts associated with large-scale chemical/industrial facilities. Alternative two was chosen because it would allow the development of a small-scale (less than 640 acres) facility that could be monitored. A maximum size of 640 acres was established since this area would support most potential chemical/industrial uses. Additional information on the feasibility of this alternative and its environmental consequences is needed. Such information may be obtained by closely studying and monitoring small-scale operations. Alternative three was rejected because chemical/industrial uses appear to be a viable utilization for Minnesota's peatlands.

Action

The Department will review chemical/industrial lease applications as received over the next two years and grant, modify, or deny those requests on an individual basis. The Department will continue to support technologocal and environmental studies of this utilization alternative.

Rents

In a fashion similar to horticultural leasing policy rents would be charged on a per acre basis above an established minimu.

Royalties

Since chemical/industrial uses of peatlands are extractive, royalties would be charged.

5. FORESTRY

Background

Peatlands are of major importance to Minnesota's timber industry. Approximately 60 percent of Minnesota's 7.2 million acres of peatlands are forested.

The major peatland forest types in Minnesota include: black spruce, tamarack, white cedar, and lowland hardwood (black ash and American elm). Glack spruce is the most widely used peatland species. Of twelve pulp mills in Minnesota that manufacture various kinds of paper and other wood fiber products, at least four depend upon large volumes of black spruce for processing high quality paper. In 1976, 24 percent of the pulpwood produced in Minnesota came from peatland areas. The spruce and tamarack harvested from peatlands in Koochiching County in 1976 alone generated a return to the county of over $5 million. Any significant loss of commercially productive peatland would be a matter of great concern.

Alternatives

1. The state could grant leases that would allow the extensive and intensive management of peatlands for forest production.
2. The state could grant leases for forest management in certain locations depending upon the existing use, suitability, and conflicts with other uses.
3. The state could continue the practice of managing forests on state peatlands.

Discussion

Alternatives one and two were rejected because there appears to be little interest by both public and private sectors to intensively and extensively manage peatlands for maximum forest production. Alternative three was chosen since forest management on state-owned peatlands is conducted by the state and there is no need for private forest management on state lands.

However, forest management will be considered when conducting peat lease applications for other uses. In cases where the peatland has a high potential for forest management, leases for other uses will not be granted.

Action

The Department will not grant leases for forest utilization of peatlands during the next two years. The Department will consider forest management when reviewing lease applications for other uses.

6. SMALL-SCALE FUEL DEVELOPMENT

Background

In Europe peat is burned directly, like coal, to generate electricity or provide heat. Direct burning of peat represents a potential source of electricity and municipal heat in our state, especially for municipalities near peat deposits. Gasification of peat is currently being explored by the Institute of Gas Technology in Chicago under contract to the Minnesota Gas Company. Commercial gasification plants do not operate at this time anywhere in the world.

For the purposes of this policy a small-scale energy facility is considered to be 25 MW or less of electricity or an equivalent amount of steam heat. For a 25 MW direct burning facility, 640 acres of peat 5 feet thick would be needed for a 20-year supply. A DNR study of four existing power plants and one heating plant in northern Minnesota that could be converted to use peat as a fuel concluded that peat is not economically feasible at this time. If the difference between peat and coal costs decrease, the potential of peat as an energy source would increase.

The growth of plant biomass (e.g. cattails) on peatlands is another possible source of energy. To date the use of biomass as a fuel source has not been done on a commercial basis. However, research currently being done on this possible alternative energy source suggests it is a commercially feasible fuel.

Alternative

1. The state could grant all peat lease applications for small-scale fuel development.
2. The state could deny all peat lease applications for small-scale fuel development.
3. The state could grant some lease applications for small-scale fuel development.

Discussion

Alternative one was rejected because uncontrolled energy development could result in unknown environmental and socioeconomic consequences together with the rapid depletion of a non-renewable resource. Alternative two was rejected because the Department feels that much could be learned by studying a small-scale demonstration plant if one were proposed. Alternative three was chosen to allow a small-scale demonstration plant, fueled either by peat or biomass.

Action

The Department will review small-scale fuel development lease applications as received and grant, modify, or deny those requests on an individual basis.

Size

A maximum of 640 acres of peat could be allowed for an individual energy facility. This is the amount of peat needed to supply a 25 MW plant for 20 years.

Rents

Annual rents would be charged on a per-acre basis above an established minimum.

Royalties

Since fuel use of peatlands are extractive, royalties would be charged.

7. LARGE-SCALE FUEL DEVELOPMENT

Background

For the purposes of this policy, a large-scale energy facility is considered to be more than 25 MW of electricity or an equivalent amount of steam heat or natural gas. Such facilities would require more than 640 acres of peat five feet thick for a 20-year supply.

The proposal by Minnegasco to build a large-scale gasification plant in northwestern Minnesota would require up to 120,000 acres for 20 years of operation.

Alternatives

1. The state could grant lease applications for large-scale development.
2. The state could deny lease applications for large-scale fuel development.
3. The state could hold lease applications for large-scale fuel development in abeyance.

Discussion

Alternatives one and two were rejected because the Department feels it is too early to make a decision regarding large-scale fuel development. Studies of the technology of peat gasification being conducted by the Institute of Gas

Technology are not yet complete. In addition, a satisfactory mining technique for supplying the proposed gasification plant with peat (about 56,000 tons per day) has not been developed. The U.S. Department of Energy is about to embark on a multi-million dollar program evaluating the use of peat for energy. The Department feels it is premature to decide whether large-scale fuel development is appropriate until further studies are completed by the state and the U.S. Department of Energy.

Action

The Department will hold all lease applications for large-scale fuel development in abeyance until studies are completed.

IV. SPECULATION

Background

The Department is concerned that large tracts of peatlands may be held by developers who wish to speculate on future market conditions. This land would then be unavailable for other uses. In order to discourage such speculation, the following alternatives were considered.

Alternatives

1. The state could require a set-off provision in leases that credits rent against royalty for acreage developed. This would reduce the annual payment.
2. The state could charge royalties that would decline with increasing production.

3. The state could limit the acreage allowed for any single peat operation.
4. The state could require "diligent development" in peat leases, i.e. a certain amount of development would be required within a specified time period.

Discussion

Alternative one was rejected because of administrative complexities and because the rental credit may not be sufficient to deter speculation in an era of rising peat values. However, increasing rents to the point where speculation is discouraged may also act as a deterant to legitimate development of the resource. Alternative two was rejected because it would favor the large producers. Alternative three was accepted because limiting the size is consistent with the Department's concern for potential environmental impacts. As stated elsewhere in this report, size limits have been established for several types peat utilizations. Alternative four was also accepted because it would ensure that a peatland would be developed within a specified time. If not, it would be a violation of the lease. Requests for additional lease areas could then be justified based upon performance.

V. ENVIRONMENTAL MONITORING

The Department intends to require environmental monitoring on future leases of peatlands because the environmental impacts of peat utilization are not yet fully understood. As described in the section on Jurisdiction, the commissioner has the authority to regulate peat development through lease conditions as a part of any lease it grants on state-owned land. Also, the Pollution Control Agency, through the NPDES permit system may require monitoring of discharges. A sample environmental monitoring plan is presented in Appendix A.

VI RECLAMATION

Background

A major concern of the Department is to ensure that peatlands, mined or otherwise disturbed, be suitable for some future use. Reclamation of disturbed peatlands could provide that insurance. The Peat Program is currently investigating several reclamation alternatives: forestry, agriculture, waterfowl areas, and natural regeneration. Continuous or staged reclamation could be employed over the life of the project.

Alternatives

1. The state could require reclamation through leasing provisions.
2. The state could require reclamation through leasing provisions and require the producers to post bond, pay a surcharge, or some similar mechanism.
3. The state could encourage but not require reclamation.

Discussion

Alternative one was not considered sufficient because it offered little protection to either the state or the environment. Also, no incentives are provided that encourage a continuous reclamation program concurrent with mining operations. The threat of default is not adequately prevented by this alternative and the only way for the state to recover costs would be to file suit. Alternative two was chosen because it would require a monetary commitment by the developer to cover the costs of reclamation if default occurred. The bond or surcharge would be computed annually based upon only those lands affected within the next twelve months. For staged or continuous reclamation, the portion of the bond or escrow account

corresponding to the reclaimed area would be released. Prior to the granting of any peat lease, a reclamation plan would be required. Alternative three was rejected because the Department feels that reclamation of disturbed state-owned peatlands is necessary to ensure that these lands can be used for other purposes.

Action

The Department will require reclamation on all future peat leases and will further require the posting of a bond, surcharge, or similar mechanism to cover reclamation costs. Staged or continuous reclamation will be required as part of the reclamation plan.

VII CLASSIFICATION OF PEAT

Based upon our present analysis of the issue the peat program has concluded that the Department of Natural Resources should, during the next biennium, continue its policy of leasing peat as a surface interest.

VIII BURNING OF PEATLANDS

A common practice of land clearing and windrow disposal on newly developed peatlands has been by burning. Frequently, this practice results in a significant or total loss of the peat resource. All leased use of peatlands will prohibit the practice of burning the peat resource for land preparation.

IX DRAINAGE OF PEATLANDS

Any proposal to drain peatlands is subject to the permit requirements of Minnesota Statute 105.41 and related laws.

APPENDIX A

SAMPLE ENVIRONMENTAL MONITORING PLAN

WATER QUALITY

Water samples are to be collected on a monthly or quarterly basis at each outlet from the lease area and analyzed for the following parameters.

Monthly Samples	Quarterly samples	
pH	Mercury	Iron
Specific conductivity	Arsenic	Zinc
Color	Selenium	
Dissolved oxygen	Lead	
Total phosphorus	Copper	
Total nitrogen	Nickel	
Suspended sediment		

WATER QUANTITY

Install and monitor continuous discharge device at outlet(s).

Install and monitor monthly water table wells at five locations around drained area.

AIR QUALITY

Install and maintain particulate air sampler upwind and downwind of the disturbed peat areas, with respect to the prevailing winds. Normally, this would require one sampler west and two samplers east of the operation.

APPENDIX B
SAMPLE CONTENTS OF PEAT LEASE APPLICATION

1. Location of proposed lease including legal description.

2. A U.S.G.S. 7½ minute, 1:24,000 scale map showing the proposed lease boundaries.

3. Ownership of requested lands by legal description and ownership of immediately adjacent lands.

4. A map of the site showing proposed location of structure and roads and other development features.

5. A description of the projected timetable and sequence of land use with a map showing when each area would be developed.

6. A map showing the proposed drainage plan (if applicable) and showing the ultimate discharge point.

7. A description of how the peat is to be utilized including harvesting methods (if applicable).

8. Estimated starting date (month/year).

   Estimated completion date (month/year).

   Estimated construction cost.

   Number and type of employees.

9. Estimates of peat reserves including:

   type
   depth

   Copies of existing data on the area.

10. Proposed Reclamation Plans.

    a. Amount of peat to be left in place.
    b. Final use of land by area.
    c. Final surface treatmant necessary to achieve final use.
    d. Interim reclamation during life of project.
    e. Map showing summary of reclamation plan.

11. Mitigative measures for potential air and water quality impact.