Report of the Joint Select Committee on Forest Resources

on the

Forest Resources of Maine

October, 1977

October 21, 1977

Mr. John L. Martin, Chairman
Legislative Council
108th Legislature
State House
Augusta, Maine 04333

Dear Speaker Martin:

As Chairman of the Joint Select Committee on Forest Resources during the 107th and 108th Legislatures, I am submitting the enclosed report in accordance with H.P. 837 which created the Select Committee to study Maine's forest resources and the potential of the forest industry in Maine.

Respectfully submitted,

Douglas M. Smith
Chairman

enclosure

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Study of Maine's Forest Resources

October, 1977

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I. SUMMARY

Maine's forest resources are the most important productive resources in the State. The manufacture and processing of timber play a leading role in Maine's economy by providing 30% of its manufacturing employment and 43% of the value of its manufactured products.

The Committee found that forest land acreage in Maine constitutes 90% of the total area of the State, which is the highest such percentage in any of the United States, and that this percentage has reached a practical maximum. Thus, when measured against a projected worldwide shortage of wood by the year 2,000, Maine's ability to help fill the projected need will require increased wood production on the existing land base.

Increased wood production from forest lands can be accomplished in several ways, principally by:

A. Protective programs to reduce growth losses due to fire, insect attack and ravages of disease;

B. Greater utilization of existing growth, including manufactures from tree roots and stumps, small limbs and tops, leaves and needles;

C. Development of new uses for species not being used or being underutilized, and

D. Increased growth per acre through intensive silvicultural management.

The total acreage of Maine forest land is generally stabilized, and cannot be expected to increase significantly in the future. The only possible way to increase the wood supply, therefore, is to increase the productivity of existing forests through improved management practices. Evidence presented to the Committee suggests that the future demand for wood will not be met unless the productivity of forest land in Maine is increased. The Committee found that there is only limited application of intensive forest management practices on all classes of land ownership in Maine. Economics and a lack of understanding on the part of the general public of the need for intensive forest management have retarded forest management in Maine.

The Committee recommends policy principles to serve as guidelines for specific improvement in forest land productivity. The guidelines recognize the need to encourage growth and improvement of all segments of the forest industry by both the private and public sectors and recognize the need for the State to regularly eval-

uate public programs to determine their effectiveness.

Four means were identified by which public policy can bring about improved forest management where it is most needed. These are education and information, protection, regulation and financial incentives. Specific recommendations are included in this report which, if implemented, should move the State forward in this regard. These are:

A. Increased education and extension services;

B. Evaluation and funding of forest protection programs;

C. Review and evaluation of regulations affecting the forest industry; and

D. Evaluation of State-Federal management incentive programs.

In addition, recommendations to encourage economic development are made, including:

A. Analysis of the potential for future economic development; and

B. Study of problems affecting the wood harvesting industry; specifically, hiring practices and wages, woodsworker training, safety, impacts of alien labor, and workmen's compensation premium for woodsworkers.

II. INTRODUCTION

In March 1975, the 107th Maine Legislature by Joint Order created the Joint Select Committee on Forest Resources to undertake a comprehensive study of Maine's forest resources. Four legislators, four forest industry representatives, one woodsman, a University of Maine representative, and a State government official were appointed and commenced their proceedings in February 1976.

The Committee was ordered to study the forest resources of Maine, their protection, productivity, and use, including an analysis of present governmental services and regulations, consequences and control of natural disasters, private and public management, ownership structure, markets and utilization, regional, national, and international trends, taxation, and use. The Committee was ordered to report its findings "together with all necessary implementing legislation at the next regular session of the 108th Legislature".

In order to fulfill its task, the Select Committee defined forest resources as commercial forest land and the product manufactured therefrom. The Committee decided that time did not permit review of the other uses and values of forest resources including water, recreation, minerals and wildlife.

The Committee conducted 7 public hearings and 3 field trips throughout Maine's forest regions to obtain some of the basic information required. The public hearings were concerned with the inventory of commercial sawtimber and growing stock in the United States and Maine; the demand for timber at both the national and state levels; regulation and taxation of the forest industry; ownership and management of forest land in Maine; the condition and problems of woods labor in Maine; and forestry services and expertise provided by the Maine Forest Service, Maine colleges and universities, and vocational schools. On three field trips, the Committee examined the inventory of commercial timber and timberland management in the western, northern, and eastern regions of the State.

In addition the Committee staff conducted research pertaining to some effects of the forest industry on the Maine economy, the transportation of Maine forest products to regional markets, and the Maine Tree Growth Tax Law. In total, the Committee held 24 meetings and heard testimony from more than 100 people in the public and private sectors. Copies of all written statements and summaries of testimony offered during the series of public hearings conducted by the Committee have been assembled and will be deposited in the Maine State Library in Augusta where they are available for reference.

The Committee found that,second only to the State's labor force, Maine's forest land is its most valuable productive resource, and, therefore, warrants special public concern and attention. The forest resource-based industries directly employ more than 30% of the entire manufacturing labor force in the State of Maine. Forty-three percent of the value of products manufactured in Maine come from the forest resource-based industries of the State's economy. The Committee also found that, despite the importance of the forest resource, there exists little explicit public policy relating to the forest resources.

An explicit and consistent forest policy should result in a more efficient and directed public sector. It should also lead to a more dynamic, productive, and profitable private sector. Private enterprise and its innovative forces operate more effectively when decision-makers have a clear understanding of the thrust and direction of public policy. With an understanding of its bounds and constraints private enterprise can adapt and operate more efficiently and do its job more effectively of generating private and public wealth.

As technology has advanced, private investments have become more concentrated and their amortization periods longer. This is especially true in the forest industry where processing plants are efficient at ever-larger scales, and where forest land investments yield a significant return only after 30 years or more. It is therefore, especially important that a consistent and explicit forest policy be developed to facilitate long-term private planning in the forest industry.

One of the objectives of this Select Committee was to take a first step in formulating a public policy that would best guide the economically efficient and environmentally sound use of the State's vast and valuable forest resource base. Although limited resources for this study precluded the formulation of a comprehensive forest policy for Maine, the report does move significantly toward such a policy through the explicit presentation of a set of policy principles and a broad group of specific recommendations based upon those principles.

III. GENERAL PRINCIPLES

At the outset, the following statements are recommended as basic policy principles for future legislation and agency implementation pertaining to Maine's forest resources. These principles also serve as the guidelines for the more specific recommendations following in this report.

For the long-term, the Committee finds it is highly desirable that:

A. The competitive market forces of free enterprise be encouraged and supported in every aspect of the ownership, management, and development of the forest resources of Maine.

B. Public sector involvement in the ownership, management, protection and development of the resource be limited to that necessary to assure the wise use and continuing improvement of it, and to meet the legitimate needs and abiding concerns of the people of Maine.

C. The long-term management of the forest resources of Maine be recognized as a continuing effort among all persons with an interest in its use, protection, and improvement.

D. The State assert its role as trustee for future generations by encouraging forest management practices that ensure sustained yields of merchantable wood from trees grown to optimum size, quality, and value.

E. Taxation of the forest resource continue to be based upon the productivity of the resource for its timber value rather than for its "highest and best use" value.

F. The State implement programs directed toward encouraging secondary processing of forest resource-based products.

G. Continuing efforts be made to assure that employment opportunities generated by the forest resource of Maine accrue first and foremost to the people of Maine.

H. All programs of State government affecting the use, protection, and management of the forest resource be evaluated regularly in terms of their efficiency and effectiveness in achieving their express goals including the aforementioned principles as guidelines.

In the light of economic forecasts which suggest increased demand in the market place for raw wood and for wood products, the State should create a climate conducive to expansion of wood products industries within the State, as well as fostering programs and offering incentives to assure more and higher quality raw materials for added industrial capacity.

Maine can increase its production of wood, and so make way for expansion in the forest economics, through improved forest management. The next section of this report addresses the issues related to increased forest growth and resource management.

It is mainly through processing and adding value to the resource that Maine residents derive income and all of the benefits that income entails. The second following section of this report reviews the policy issues in the area of forest resource-based economic development, and makes recommendations for public action.

IV. RESOURCE MANAGEMENT

The total acreage of Maine forest land is generally stabilized, and cannot be expected to increase significantly in the future. The only possible way to increase the wood supply, therefore, is to increase the productivity of existing forests through improved management practices. Evidence presented to the Committee suggests that the future demand for wood will not be met unless the productivity of forest land in Maine is increased. The Committee found that there is only limited application of intensive forest management practices on all classes of land ownership in Maine. Economics and a lack of understanding on the part of the general public of the need for intensive forest management have retarded forest management in Maine.

Nevertheless, as mentioned previously, the State can expect to see expanding markets for wood in a world of diminishing wood supplies. Therefore, the Committee has identified four public policy instruments through which management for increased forest growth can be effected. These are information and education, protection, regulation and financial incentives.

INFORMATION AND EDUCATION

Extension Services

Forestry information and education efforts in Maine consist of extension services and structured education and research programs. Forestry extension services are provided by the Maine Forest Service, the University of Maine, the Cooperative Extension Service and various other private organizations and firms.

The Cooperative Extension Service has only one extension forester in Maine and does not provide the full range of services needed by the tens of thousands of forest land owners who could benefit from local extension programs. The Committee realizes that there are many demands on extension funds. However, the importance of the forest resource to the State demands increased emphasis on the extension services.

It is the responsibility of the Maine Forest Service to increase public awareness and offer assistance which encourages good practices in the management and use of the forest resource. The 20 service foresters of the Maine Forest Service have traditionally provided a broad range of services to land owners, loggers, and primary processors with emphasis on individual contact and direct assistance and supervision in management work including tree planting, harvesting, and marking of trees for timber stand improvement and commercial harvest. Foresters also have conducted radio programs, workshops, and other forestry education efforts. The importance of improving forest management through increased owner knowledge dictates that the State expand its efforts to increase public awareness of the need for forest management.

Recommendations for Extension Services

A. That the Cooperative Extension Service increase by a minimum of four the number of extension foresters on its staff. These foresters should be given responsibility for increasing general awareness of the forest resource and the opportunities for improved management techniques.

B. That the Maine Forest Service be directed to expand its role in educating smaller landowners, loggers and processors through increased individual contacts. At the same time, the Maine Forest Service should actively encourage the private sector to offer additional technical services at reasonable prices.

Education and Research

There are 8 secondary schools offering harvesting programs and and four offering general programs in forestry. Operating chainsaws to thin, prune and harvest trees is emphasized in field work. Classroom instruction includes tree physiology, diseases, insects, forest management and harvesting, fire control, record keeping, and other business skills. Two post-secondary schools offer a wood harvesting course.

Acquisition of costly heavy equipment for field work is a major problem in setting up such a program. In addition, competition for education funds is a problem for vocational program. These programs may not be supported by a majority of the respective school boards or other funding agencies.

Two post-secondary institutions, the University of Maine at Orono and Unity College, offer courses or programs in forestry. The School of Forest Resources in the University of Maine at Orono has 2-year, 4-year, and graduate programs in forestry, with a total enrollment in 1976 of 866 students. The programs of the schools are popular, and applications far exceed the number of students that can be accomodated by the school programs. However, the Director of the School stated that the School is educating the number of students who can reasonably expect to find employment in forestry.

It is the consensus of the Committee that a proliferation of forestry programs similar in content to those found at the University of Maine at Orono and Unity College should not be encouraged at other locations by the expenditure of public funds.

Recommendations for Education and Research

A. That the Director of the Bureau of Vocational Education in cooperation with the forest products industry, develop

additional wood harvesting training programs to include on-the-job training similar to those already in place at Calais and Presque Isle. In addition, the State should increase its share of the cost of vocational education programs for woodsworkers to provide capital costs of equipment.

B. That a center for forest policy development, located at the University of Maine at Orono, be created to concentrate on major issues and policies pertaining to Maine's forest resources and the forest industry. Some of the major policies would include taxation, protection of these resources, management and regulation.

C. That the University of Maine at Orono be encouraged to assume the leadership for the development of a forestry research policy and a long range plan for its implementation.

D. That the Maine Forest Service review the format and content of the U.S. Forest Service's Survey of the Timber Resources of Maine, and make explicit recommendations to the U.S. Forest Service to improve the report to reflect most accurately the needs of Maine's forest managers and policy makers. The Timber Resources reports now make data available only on a county basis, and once each decade. Future surveys should take advantage of remote sensing techniques, which will produce a more detailed view of the distribution of Maine's forest types.

PROTECTION

The State's forest protection activities consist primarily of fire, insect and disease control and suppression programs. Current fire control policy emphasizes the preventive approach. Insect and disease control activities place a high value on preventive approaches, although substantial resources are allocated to suppression activities during periods of epidemic proportions. These programs which result from established policy, nonetheless are modified to meet the constraints imposed by technology, economic feasibility and the nature of the insects and diseases that affict Maine forests.

The Select Committee heard conflicting testimony in regard to the State's fire prevention and control capability. According to some spokesmen in the forest industry, the State's fire control capability is impeded by its antiquated equipment. There is also some concern that funding constraints may prohibit timely replacement of equipment when the Maine Forest Service feels that such replacement is necessary for the efficiency and effectiveness of its operations.

The Committee found that the State's fire control equipment is supplemented by other sources. The private sector has sufficient equipment to combat most forest fires, and has been quick

to respond to outbreaks regardless of ownership involved. The State is a member of the Northeast Forest Fire Compact, through which firefighting equipment and manpower of several northeastern states and Canadian provinces can be called upon to combat major conflagrations.

As as result of its review of Maine's fire control capability, the Select Committee finds that, except for a lack of airborne equipment which does not exist in the private sector and is not immediately available through the Compact, the State is adequately equipped.

Under normal circumstances, forest insect and disease control is the responsibility of the forest owner with assistance from the State. Tree diseases such as the birch die back, and beech scale, to name a few, and insects such as the white pine weevil, balsam wooly aphid, saddle prominent and larch sawfly, as examples, are problems which the landowners combat with technical assistance provided by the State on request.

When damaging insect infestations or devastating tree diseases reach epidemic proportions so as to threaten the forest resource in a magnitude that would be damaging to the general welfare of the State, the State assumes primary responsibility for control activities. In cases such as the current spruce budworm infestation,the expense of the control activities is met with federal funds, State general funds, and a surtax on landowners.

Two alternatives to the present system of forest protection have been suggested to the Committee. One alternative is to create a regional compact in which the several states and provinces in a geographical region cooperate financially and with manpower to protect forests from fire, disease and insect damage. The Northeast Forest Fire Compact is an example of the regional approach to the protection problem, which could be expanded to deal with major insect and disease problems in addition to fire problems.

A second alternative is for landowners and wood products manufacturers to contribute to a forest protection fund for protection purposes. By way of an industrial tax levied on output and by specifying a proportion of forest land taxes to be used for protection, a fund would be gradually developed sufficient to combat major disease and insect problems.

Recommendations for Protection

A. That a Forest Resource Protection Fund be created within the Bureau of Forestry in the Department of Conservation to protect Maine forests from disease and insects. The Fund would be financed by means of a tax based on the principle that the State of Maine and private landowners share protection costs commensurate with the benefits accruing respectively to the general public and to the private landowners directly. This fund would be used solely to finance major resource protection programs.

B. That the Division of Entomology within the Bureau of Forestry in cooperation with forest owners evaluate the present ability of the State to combat tree disease and insect problems. The Division should report its findings and recommendations to the Legislature.

C. That the Bureau of Forestry in the Department of Conservation be encouraged to conduct an intensive review of its present priorities for forest insects and diseases threatening Maine forests (e.g., White Pine Blister Rust).

REGULATION

The Land Use Regulation Commission, the Department of Environmental Protection, the Department of Inland Fisheries and Wildlife, and other State agencies administer State laws and regulations governing activities on forest land in Maine. The Select Committee heard testimony from forest industry representatives that some State and Federal regulation of forests in Maine produces an adverse effect upon the forest industry and, thereby, the Maine economy.

While this testimony contained some general criticism of State regulations and administration of these regulations, there were few, if any, specific provisions cited for reform, with the exception of the deer yard provisions and their potential conflict with the silvicultural provisions of the Spruce Budworm Control Act, Maine's only comprehensive insect control program. The Committee supports recently enacted legislation which will review state agency programs and state agency rules; P.L. 1977, c. 566 and P.L. 1977, c. 554.

Although it is inevitable that some costs, in terms of productivity and growth, result from regulations, it is also true that social and economic benefits result from these regulations. The important question, of course, is whether the costs exceed the benefits. The Committee did not have the resource to answer this question.

Recommendation for Regulation

A. That the Maine Legislature undertake a comprehensive study of the impact of regulation upon forest land owners and forest products manufacturers.

FINANCIAL INCENTIVES

Maine Tree Growth Tax Law

The State makes available financial incentives for improved forest management through the Maine Tree Growth Tax Law and by means of direct federal subsidy programs.

The Tree Growth Tax Law (TGTL) is designed to give incentives to forest land owners to maintain their holdings as forest land and to increase the volume of wood grown. These goals are encouraged by preferential tax treatment. The TGTL is applied to all parcels of forest land of 500 acres or more. Those parcels of 10-500 acres which qualify may be included voluntarily.

The TGTL values land classified as forest land for tax assessment. These lands are valued according to their productivity. The value of forest lands under the TGTL is determined by a formula applied to the particular valuation of mixed growth, hardwood, or softwood. The valuations are determined by applying current market stumpage prices to forest growth for three forest types by county, i.e., softwood, hardwood and mixed timber types.

The State levies a tax on lands in the Unorganized Territory directly, whereas lands in organized towns are taxed locally according to the municipal tax formula.

The TGTL should act as an incentive to improve forest management since the most productive land enjoys the assessment applied to the value of the average level of productivity in a county for the particular forest type. Therefore, intensive management is not penalized on quality stands as it was under market value property taxation. Furthermore, the tax paid is generally less than the owner would pay if his land were assessed on an ad valorem basis at its market value, as is most other real estate in the State. This should encourage landowners to maintain their land as forest land.

This law is widely appreciated and supported in the Unorganized Territory, where the vast holdings of individuals and corporations are consolidated, a greater degree of management is economically feasible, and development pressures do not exist to the same degree as in other areas of Maine. Among owners of smaller parcels in the southern and western part of the State the law is more controversial. The tax savings may be an insufficient incentive to encourage management, especially on immature stands where no income from the land is available to finance improvement costs. Pressures for other uses may force economic decisions regardless of State tax policy.

A recent study and report on the current valuation of forest land under the TGTL suggests that there may be a better method of calculating current use value, and that the basic elements of the taxation formula need periodic review.* Factors to be considered are the 30% reduction factor, stumpage prices, and the capitalization rate.

* John Joseph, Tree Growth Tax, Implications for Forest Policy and Tax Equity. Maine Department of Conservation, November, 1976.

The substance of the report's findings and recommendations may be summarized in the following points:

A. The Maine Tree Growth Tax Law as a productivity tax encourages good forest management.

B. The Maine TGTL results in differential assessments for forest land from all other forms of real property; and this produces a tax shift from forest land owners classified under the Tree Growth Tax to other property owners and the State's General Fund.

C. This shift is not completely the result of a difference between fair market value and current use value, but is largely the result of the present method of calculating "current use value" for forest land.

D. If the correct productivity value of forest land is to be assessed, the discount factor and the capitalization rate must be reviewed periodically.

While the TGTL is designed to preserve Maine's forest resources by providing preferential tax treatment of forest land, the objective of the law, in some cases, is not being achieved. One of the major reasons for the limitations of the TGTL is ignorance of the provisions of the law on the part of many small land owners. Many small land owners are simply unaware of the benefits and penalties of the law.

Another difficulty contributing to the limitations of the TGTL is that which confronts a number of small land owners in their attempt to classify their forest land under the law. Some local tax assessors have not cooperated with small land owners and have refused to classify parcels of forest land of less than 500 acres under the tax law. In addition, land owners often do not understand the procedure by which decisions of local tax assors can be appealed to the Forestry Appeals Board.

While some of the provisions of the TGTL discourage a number of small land owners from utilizing the law, the law also produces some adverse effects. For example, municipalities which experience a loss of revenues as the result of forest land classified under the TGTL are reimbursed for the loss. The level of reimbursement, however, is based upon the revenues and land valuation of municipalities in 1972, prior to the upgrading of assessment and valuation practices that have occurred throughout the State subsequent to 1972. As a result, the level of reimbursement has been very limited.

In addition to a few disincentives and adverse results of the law, there are some inconsistencies in the law. For example, the Maine TGTL does not require the land owner with less than 500 acres to file a survey of the land that will be classified under the law, but it does require the land owner to submit a sur-

vey to remove land from the TGTL.

Another inconsistency concerns the penalties of the Maine TGTL, which are significantly greater than the penalties of the Farm Productivity and Open Space Land Law, a law which is designed with the same objective for agriculture as the objective of the TGTL for forestry. Another problem with the law is the phrase "fair market value" in § 583, paragraphs (a) and (b) which is interpreted differently by different people.

P.L. 1977, c.549, "AN ACT to Improve the Administration of the Maine Tree Growth Tax Law" authorized the State Tax Assessor to review the reduction factor in 1978 and every fourth year thereafter. In addition, he shall biennally review the capitalization rate. The Act provided for establishment of a Land Classification Appeals Board and procedures for appeal from its decision to Superior Court. The Committee supports these changes in Maine law and refrains from making further recommendations at this time since the law responds to several problems discussed above.

Recommendations for the Maine Tree Growth Tax Law

The Select Committee supports the concept of taxation of taxation of forest land on the basis of productivity and the retention of the Maine Tree Growth Tax Law. The Committee recommends the following changes:

A. That the Maine Forest Service in conjunction with the Bureau of Taxation prepare a booklet on the Maine Tree Growth Tax Law to be made available to all landowners to provide information on this law.

B. That the phrase "fair market value" in 36 MRSA § 581, 3rd paragraph, (a) and (b) be substituted with the phrase "100% full tax value as determined by the tax assessor".

Direct Financial Incentives

Two programs that provide monetary incentives for intensive forest management are the Agricultural Conservation Program (A.C.P.) and the Forest Incentive Program (F.I.P.). Under A.C.P.,the Maine Forest Service provides technical assistance to woodland owners for site preparation, planting, thinning and pruning. Incentive payments, to share in the cost of the practices, are provided by the Agricultural Stabilization and Conservation Service, a Federal agency. The maximum payment for one recipient is $2,500. Most individual A.C.P. projects range between 5 and 10 acres, and the maximum ranges between 20 and 30 acres. Inspection and tree marking are necessary for approval of a program by the Service Forester and he must certify that the work is done for payment to be made. The payment is 75% of costs, or according to a schedule provided by the Agriculture Stabilization and Conservation Service. In

1975, 167 acres were certified for payments of $5,563 for tree plantings and 1959 acres were certified for payments of $46,706 for timber stand improvement and construction of fire ponds.

The Forest Incentive Program operates much the same way, except that a plan must be submitted with the application for both tree planting and timber stand improvement. The payment schedule for this program is as follows: up to $36 per acre for pruning soft wood, $36 per acre for tree planting, and $30 per acre (75% cost) for timber stand improvement which can include pruning, thinning, spraying, etc.. In 1975, $37,586 was paid to owners for planting 982 acres and $18,734 was paid for timber stand improvement on 800 acres, for a total of 1782 acres and $56,320. Possible maximum payment to an individual is $10,000.

The United States Forest Service compensates the Maine Forest Service for administrative costs up to 1% of funds distributed under A.C.P. and 9.3% of funds distributed under F.I.P..

Both the A.C.P. and the F.I.P. programs are presently underutilized. In 1975, $1,728,513 was available to Maine under the A.S.C.S. program. Of this, only $52,269 or 3.02% was used for forest resource management. Agricultural activities unrelated to forestry receive the vast majority of federal funds that are appropriated for all agricultural activities including forestry. In the same year, $111,200 of F.I.P. funds were available for Maine, and $55,790 or approximately 50% was used. These figures speak for themselves. If more applications had been made, more federal funds would have gone directly into forest management of small land holdings in Maine.

Recommendations for Direct Financial Incentives

A. Regional goals should be established for the implementation of cooperative forest management programs. In addition, a comprehensive review of the Maine Forest Service's role in the administration of those programs should be undertaken. This review should identify and evaluate the costs of the State's role in the programs, the effects of the programs on resource management, and means of improving the efficiency of the State's involvement. If the programs are found to be effective, they should be pursued aggressively, to the limit of available federal funds for management in Maine.

B. That the U.S. Forest Service and the Maine Forest Service review their agreement to cooperate in these programs so that the compensation to the Maine Forest Service for administering these programs is equal to expenditures.

V. ECONOMIC DEVELOPMENT AND LABOR

Economic development and more efficient marketing will result in higher incomes for the people of Maine and they also will significantly affect the intensity of resource management in Maine. Economic development will result in a greater demand for wood which in turn, will, produce an increase in stumpage prices and thereby make investment in land management more attractive. The Committee believes that increased stumpage values will be the single most important variable affecting forest management in Maine in the future, and that increasing values must be coupled with wise resource management.

This section of the report identifies issues in the areas of economic development and labor, and makes recommendations for State action.

ECONOMIC DEVELOPMENT

Primary Processing and Export Markets

It has been estimated, in research done by the Maine Forest Service that 37.4% of all sawlogs cut in Maine are exported in their unmanufactured state. Canada and New Hampshire were the principal markets for these logs and, therefore, the beneficiaries of the value added in the processing of this raw material.

It was also brought to the attention of the Committee that northern Europe is experiencing a shortage of wood. The wood processing industry in Sweden apparently has created a demand for quality softwood that cannot be supplied on a sustained yield basis by European forests. They are, therefore, searching for sources of wood. This situation may be a new opportunity for an export market in Maine.

There is a need for an explicit public policy with regard to the export of wood. On the one hand, the export of wood could to some extent preclude the development of processing facilities in Maine. However, if a study of the situation revealed that expansion of processing capacity is not expected in the foreseeable future, then there may be considerable merit in exporting wood. These exports could result in more dynamic and competitive stumpage markets and also increased activities in the areas of harvesting, transportation, and port development.

State policy, therefore, must be based upon a careful and thorough analysis of the potential for increased processing capacity in Maine. If this potential can be identified, then a strategy for bringing these possibilities to fruition should be developed and pursued aggressively and exports should be discouraged.

Recommendation for Primary Processing and Export Markets

A. That a comprehensive analysis of the potential for expanded primary processing of wood in Maine should be undertaken. This analysis should include suggestions for public policy options with regard to wood exports.

Secondary Processing

Further development of secondary wood processing in Maine has been a public concern for many years. It is especially important because secondary wood processing provides more value added and increases employment opportunities. However, no concerted public strategy to further this goal has emerged.

A review of the forest products sector of the State's economy suggests that a significant amount of semi-finished products are exported from Maine. But there is no detailed information on the flow of wood into and out of Maine at its various stages of processing. A review of this product flow needs to be undertaken to identify stages where further processing might be feasible.

Recommendations for Secondary Processing

A. That the Department of Conservation undertake a review of the wood product flow in Maine with the objective of identifying possible points for further secondary processing in Maine.

B. That the Bureau of Forestry within the Department of Conservation, with the assistance of the State Planning Office and the State Development Office, examine long-range marketing strategies for processed Maine wood products based upon a realistic assessment of tools available in the public and private sectors; and that the Maine Forest Service report its progress and recommendations in this regard to the second session of the 108th Legislature.

LABOR

The issue of Canadian citizens working in the Maine forests has received considerable attention. The Bureau of Labor Education at the University of Maine at Orono conducted a study of Canadian woods labor in Maine and reported their findings to the Joint Select Committee. Their reports, Canadian Labor in the Maine Woods and a follow-up report, formed the basis of the Select Committee's findings and recommendations regarding Canadian labor.

Another report on the subject is Bonded Canadian Labor in New England's Logging Industry by Professor Robert S. Bond of the

University of Massachusetts, prepared under a cooperative agreement between the Massachusetts Agricultural Experiment Station and the U.S. Forest Service.

Canadian labor in the Maine woods has created strife between Canadian and Maine woodsmen. The United Paperworkers International Union has been organizing wood harvesting laborers and contractors, including Canadians. The Maine Woodsmen's Association, on the other hand, is composed exclusively of Maine and U.S. citizens. A serious dispute has developed not only between the two unions, but also between Canadian and Maine woods workers. Many Maine woodsmen contend that the existing supply of woods labor exceeds the number of available jobs, and that Canadian labor serves to depress wages. Furthermore, some Maine woodsmen complain that they are victims of discrimination, that Canadian labor is preferred to Maine labor, and that there are Canadians working illegally in the Maine woods.

In response to the latter allegation, the Maine Legislature recently enacted (Chapter 116, Public Laws of 1977) a statutory provision to prohibit the hiring of illegal aliens and establish penalties for employers who knowingly hire illegal aliens.

Although the absolute number of aliens working in the Maine woods is relatively small compared to other states, their impact is dramatic. In December, 1976 they comprised about 35% of the State's 5,290 woods workers. Temporary visas (H-2) or "bonded workers" during the month of June 1977 was 258. This is not a representative figure as many employers were not certified to employ bonded workers this past June. A more accurate figure would be for August or September. The numbers for those months in 1976 were 656 and 674 respectively. These aliens are certified only when it is determined that domestic woods labor is not available. The total number of "commuting visas" during the month of June, 1977 was 1,117. This represents woods workers only. Visas convey all the rights of a U.S. citizen in the labor market.

Bonds and viasas affect labor market conditions in the same way. However, because of the distinct nature of both programs, policies must be different for each.

The public sector has a direct impact on the number of bonds working in the Maine woods. Each bond is certified when it is found that domestic labor is not available. This determination, however, is not a simple task, and there is some concern among knowledgeable persons that the procedures used are not adequate. In determining whether bonds are needed, no consideration is given to the fact that earnings and, therefore, the supply of domestic labor are directly affected by the number of bonds that are certified. The present certification process for bonds does not account for this basic economic principle.

There is no mechanism available with which State government can directly affect the number of visas working in the Maine woods. However, there are mechanisms to encourage American workers to enter the harvesting labor force and thereby displace aliens in an indirect way. These indirect mechanisms would also affect the number of bonds.

While the wood harvesting industry in Maine is beset with labor problems, it is also affected by the high incidence of work-related injuries. "The lumber and wood products industry has the highest incidence or work injuries of any industry in the nation.** Despite the high risk classification accorded the lumber and wood industry by the Occupational Safety and Health Administration (O.S.H.A.), the regional O.S.H.A. office did not conduct a single inspection of a logging camp last year in Maine. It was reported to the Committee that numerous operations do not comply with wood safety and insurance requirements.

Recommendations for Labor

A. That a Select Legislative Committee should be created to study the conditions of employment and the problems of Maine woodsmen. This committee might consist of representatives of industry and management, organized woods workers, the Department of Manpower Affairs, contractors and jobbers, and neutral parties with no special interest in the situation.

It is strongly suggested that this recommendation be given priority attention before conflicts and threats escalate.

B. A review of the certification process for bonds should be undertaken in order to introduce into the process some sensitivity to actual market conditions. If the bonded labor program is to accomplish its stated objective, then some prior attempt must be made to estimate the likely supply of domestic labor at different wage levels.

Although this question has not been directly addressed in any analysis that we are aware of, a significant amount of research has been done on bonded labor in Maine. This research has resulted in a fairly comprehensive set of data on the program that could service as a basis for further and more complete analysis.

C. The essential task of determining comprehensive safety and health regulations protecting all workers in this unusually hazardous occupation should be accelerated. O.S.H.A. must be encouraged to devote more attention to safety in the wood harvesting industry in Maine.

** Bureau of Labor Education Report to the Joint Select Committee on Forestry, Canadian Labor in the Maine Woods, p. 22.

D. For the duration of the bonded labor program, the bond certification process and the complaint enforcement process need to be streamlined. Authority to manage the program must be centralized locally, within the Maine Department of Manpower Affairs and through the U.S. Immigration Office in Portland, where the work takes place, rather than distributed to every level of government where conflicting decisions are made by government officials far removed from the scene. The Governor, via a legislative resolution, should be authorized to take whatever measures are necessary to "streamline" the complaint enforcement procedure.

E. An official investigation should be made, probably by the Department of Labor or the National Labor Relations Board, of the charges that native Maine woods workers have been subjected to discrimination in hiring, blacklisting, and other unfair labor practices. Our research suggests that this particular grievance should not be treated as a immigration problem, but as a labor problem.

F. As proposed in the Bureau of Labor Education report, the Legislature has enacted provisions who prohibit the hiring of illegal aliens and established penalties for employers who knowingly hire illegal aliens; P.L. 1977, c. 116.

G. Programs subsidized by government/industry should be established to assist the Maine woodsmen in improving his skills and competitive capabilities in the labor market. Examples of such programs are: manpower retraining programs at Maine vocational schools (such as W.C.V.T.I.) for older, experienced woodsmen to develop specialized skills that will enhance their abilities to improve and advance; and small business programs that will help Maine woodsmen wisely invest in the machinery that will improve their position in the labor force and in the business.

H. Workmen's compensation insurance premiums should be based on an individual's wages, exclusive of "saw rentral fees"; and the premium rate and classification of the individual should be based on the actual degree of risk involved in the performance of work. Presently, insurance companies are charging premiums on chain saw rental payments. In addition, many individuals in low risk jobs, such as secretaries, are charged high risk rates because they are employed by a business that is engaged in wood harvesting.

I. Woods harvesting equipment purchased new should be exempted from the sales tax and considered as manufacturing equipment and machinery.

VI. CONCLUSION

Over the past year the Select Committee has addressed a large and important subject. As a result of the deliberations the Committee has set forth a number of principles to guide the formulation of a comprehensive and explicit forest policy for the State. Also, a set of specific recommendations are made for both administrative and legislative action.

Certainly, we have come to appreciate the importance of the forest resource industry to the well-being of present and future generations of the State of Maine, and the importance of an explicit State policy to protect and enhance the forest resource. We have also recognized that because forests, technology, and social values are changing, there is probably no single forest policy that will be good for all times and all places, even in Maine. Many of the issues addressed by the Committee require careful analysis before effective policy can be formulated. The Committee did not have the analytical resources to resolve many important matters.

We strongly recommend, therefore, that this Committee's effort be continued to develop a forest policy for Maine. This effort must, however, be supported with analytical capabilities. It is vital to the interests of all Maine citizens that adequate funds be provided for this effort on a continuing basis.

ADDENDA

The following Addenda are provided to give examples of the testimony and information considered by the Joint Select Committee during the course of its study. Some of the information has been updated since the study - and this has been indicated when known. All the testimony and research reports received and considered by the Committee are available in the Office of Legislative Assistants, Room 421, State House until, September, 1979. The Addenda are grouped as followed:

I. Introduction, A

II. Management, B-H

III. Marketing and Manufacturing, I-N

IV. Taxation, O-R

V. Stumpage prices, S-T

VI. Department of Conservation, U

VII. Education, V

ADDENDA

"A" Portion of Staff Report by Ted Potter, Office of Legislative Assistants on U.S. and Maine Forest Resources and Forest Products Manufacturing.

"B" Presentation by Large Private Landowner on Management of Maine's Forest Resources, Seven Islands Land Company, January 1977.

"C" Definitions of Various Timber Survey Terms as appears in U.S. Forest Service "Northeastern Forest Survey Field Manual", for Survey Crews -- "Forest Land"; "Net Annual Growth"; "Sawtimber Trees", etc.

"D" Maine Forestry Incentives Program - Agricultural Stabilization and Conservation Services, 1976.

"E" Copy of Correspondence to Chairman Douglas M. Smith from L. DeCoster, American Forest Institute concerning dissemination of information to persons interested in forest management dated September 28, 1976.

"F" Presentation by Robert L. Gammons, Regional Forester, Maine Forest Service concerning problems in carrying out forest management programs on indicidual woodlots, September 29, 1976.

"G" G-1. Annual Statistical Reports of Maine Timber Co. prepared by Bureau of Forestry for 1974.
G-2. Annual Statistical Reports of Maine Timber Co. prepared by Bureau of Forestry for 1975.
G-3. Annual Statistical Reports of Maine Timber Co. prepared by Bureau of Forestry for 1976.

"H" Forest Management Policy, St. Regis Paper Company, Maine Woodlands, Mr. Richard Griffith, 1977.

"I" Statistics on Maine Wood Turnery and Flatware Industry 1972 & 1975 - Timber Volume Consumed by Species by Turnery & Flatware Industry, 1975, Saunders Bros., Westbrook, Maine, 1977.

"J" Statement of Arthur F. Stedman, Wood Procurement and Sales Manager, Scott Paper Co., Winslow, Subject: Present and Future Demand for Pulp and the Availability of the Resource in Maine, 1976.

"K" Map showing Distribution of Primary Processing Mills by County and Distribution of Maine Primary Mills by Production Size Classes, Maine Forestry Service, 1976.

"L" Utilization and Marketing Program of The Bureau of Forestry (Maine Forest Service) George Bourassa, Director, Utilization and Marketing, October, 1976.

"M" Correspondence between Mr. E. W. Potter and Mr. Dwight Hair re: costs of pulp and sawlogs for what uses does forest products have the highest value. Dwight Hair, Director, Division of Forest Economics and Marketing Research, U.S. Forest SErvice, November, 1976.

"N" Production and Marketing of Forest Products in the United States and the Northeast, 1972. Edward W. Potter, Office of Legislative Assistants, 1976.

"O" Summary of Important Federal Tax Issues (Letter from Bradford S. Wellman, Esq. to Committee Chairman Douglas M. Smith, Esq.) September, 1976.

"P" Paper - Comparison of Withdrawal Penalties Under Tree Growth Tax Law - Submitted to Committee by P.H. Chadbourne Co., Nethel, M aine, 1976.

"Q" Influences of Property Tax and Land Price Levels on Timber Management Decisions in the Northeast by Professor David B. Field, University of Maine, Orono

"R" State Bureau of Taxation Table of Average Net Wood Production, Stumpage Values and 100% Valuation for Forest Type for Each Maine County, 1975-76.

"S" Stumpage Income Per Acre of Commercial Forest Lane Per County, Maine Forest Products Council, 1977.

"T" Sample of Maine Forest Service Stumpage Price Summary from Service Forester Reports, Maine Department of Conservation, 1976, Fall, 1977 and Spring,1978 available from Department of Conservation.

"U" Statement of Objectives and Policies of Bureau of Forestry, Maine Department of Conservation, dated October 21, 1976, Maine Forest Service Policy Plan, Strategies, July, 1977, and Maine Forest Service Plan Goals and Objectives, June, 1977.

"V" Maine Forest Ownership Survey, Sample of Six Organized Towns, 1971-1976 Comparison, Maine Forest Service, November, 1976.

INTRODUCTION

On March 14, 1975, the Maine Legislature created the Select Committee on Forest Resources to undertake a comprehensive study of Maine's forest resources. The Committee, composed of four legislators, four forest industry representatives, one woodsman, a University of Maine representative, and a public official, commenced its study in February, 1976.

According to Study Order HP 837, the Select Committee on Forest Resources was charged "...to study the total forest resources of Maine and their protection, productivity and use. Such study shall include an analysis of present governmental services and regulations, consequences and control of natural disasters, private and public management activities, ownership structure, markets and utilization, regional, national, and international trends, taxation and use." The committee was ordered to report its results "together with all necessary implementing legislation at the next regular session of the 108th Legislature."

In order to fulfill its task and produce the most meaningful results, the select committee defined forest resources as commercial forestland and the products manufactured therefrom. There are many other forest resources including water (lakes, rivers, etc.), recreation (hunting, fishing, camping), and minerals that are very significant, but time did not permit a thorough analysis of these resources.

Following the definition of its task, the Select Committee on Forest Resources conducted 7 public hearings and 3 field trips throughout Maine's forest regions to obtain the information that it required. The public hearings were concerned with

the inventory of commercial sawtimber and growing stock in the United States and Maine, the demand for timber on both the national and state levels, regulation and taxation of the forest industry, ownership and management of forest land in Maine, the condition and problems of woods labor in Maine, and forestry services and expertise provided by the Bureau of Forestry, Maine colleges and universities, and Maine vocational schools. The Select Committee also examined the inventory of commercial timber and timberland management in the western, northern, and eastern regions of the State.

In addition to public hearings and field trips, the Committee staff conducted in-depth research pertaining to direct effects of the forest industry on the Maine economy, the transportation of Maine forest products to northern markets, the Maine Tree Growth Tax Law, Regulation of the industry and other topics. In total, the Committee (including the Steering Committee) held 24 meetings, and heard testimony from more than 100 people from all areas of the public and private sectors to obtain and analyze information for its report.

CHAPTER I

FOREST RESOURCES AND THE ECONOMY

The forest products industry which is a very significant component of the United States and Maine economies, may be reaching its peak in terms of growth. In addition, the industry may experience a decline in future years as a result of insufficient resources. As the national demand for wood increases to produce economic growth, and as the nation depends more and more upon wood from foreign nations, the United States could face a wood crisis in the early 21st century that is reminiscent of the oil crisis of 1972-73. This prediction assumes that forestland management in the United States is incapable of increasing the annual rate of sawtimber removal by 50 percent by the year 2,000 and maintain that production on a sustained yield basis. In addition, the USFS estimates that the rate of demand for wood will increase 100 percent by the year 2,000.

As wood production in the West declines and as the nation relies more and more upon the timber of other regions, Maine will experience a strong increase in national demand for its timber. If present forestland management practices continue in Maine, however, the State will be unable to experience the economic growth afforded by the increase in demand for its forest resources. Growth in the forest industry will be limited primarily to the northern region of the State composed of Aroostook, Penobscot, Piscataquis, and Somerset Counties, and the raw product will be used primarily in the production of paper and allied paper products. The evolution of the State's forest industry

from a diversified product industry to a single product (paper products) industry which utilizes machinery and automation to a much larger degree than any other type of forest products manufacturer in the industry, could produce serious dislocation in the Maine economy.

Forest products Manufacturing In The United States

The forest products industry, defined as commercial timberland and manufactured wood products is a very significant component in the United States and Maine economies. In 1972, manufactured forest products (paper, furniture, and lumber) alone, were valued at 63 billion dollars or 8.4 percent of the total value of all manufactured products and 8.3 percent of the total value added by manufacturing. Manufacturers of forest products employed 9.4 percent of the total manufacturing labor force and provided 8.1 percent of the total manufacturing payroll in the nation in 1972.

If the housing and toy industries are included in the forest products industry and if the spin-off and multiplier effects are considered, the impact of this industry on the nation is much greater than the figures indicate.

The forest products industry has also been the second leading industry in the nation in terms of increases in value added by manufacturing and increases in the value of total output. Between 1958 and 1970, the value added by manufacturing of forest products increased 185 percent. Between 1967 and 1972, the total value of manufactured forest products rose 58 percent. No other industry, except the metals industry, exhibited such growth.

While the forest products industry has been an important part of the national economy, statistical data cannot measure the "real" significance of a resource for which there are few substitutes. A shortage of wood therefore, would have a much greater impact on the nation than the statistical data suggests. The United States may face a serious wood shortage in the 21st century which will force the nation to rely more and more upon lesser developed and undeveloped countries of the world for a wood supply.

Forest Products Manufacturing In Maine

In Maine, the forest products industry has a greater direct impact on the State economy than it has on the national economy. In 1974, manufactured forest products comprised 42.6 percent of the total value of output of all manufactured products in the State. The industry employed 30 percent of the manufacturing labor force, and provided 34.2 percent of the manufacturing payroll in Maine.

If the logging, housing, and toy industries are included in the forest products industry, and if the spin-off and multiplier effects are considered, the impact of this industry on the State is even greater than the figures above indicate.

The greatest direct effect of forest products manufacturing in Maine in 1974 was in the area north of a line drawn from Danforth (Washington County) to Freyburg (Oxford County). In this area, forest products manufacturing constituted 65 percent or more of the total value of all manufactured products in the region, employed 50 percent or more of the total manufacturing labor force, and provided 54 percent of the manufacturing pay-

roll in each county of the region. Manufacturing facilities of forest products therefore, are located, for the most part, near the source of supply and not in the major population areas with a wide range of industrial facilities and services.

While the forest resources industry has a significant impact upon the national and Maine economies, the future of the industry will depend upon the resource. In both the United States and Maine, the raw resource may not be sufficient to produce manufactured forest products at the same level as demand, and the industry's growth may be very limited as the 21st century approaches.

Sawtimber Growth And Removal In The United States

Statistics compiled by the United States Forest Service indicate that in 1970, privately owned forest land in the United States was being dangerously overcut while public forest land was producing more wood than was being removed. According to U.S.F.S. data, the rate of removal on private forestland exceeded the volume of sawtimber by 33.8 percent and the volume of growing stock by 20 percent. The percentage of growing stock volume on private land in 1970 was 21 percent less than the percentage of privately owned commercial forestland.

On the other hand, the rate of removal on publically owned forestland was 47.2 percent less than the volume of sawtimber and 33.6 percent less than the volume of growing stock on these lands. The percentage of growing stock on public forestlands exceeded the percentage of public forestlands by 133 percent.

Since private forestland comprises 72.8 percent of the commercial timberland acreage in the United States and contains 57.6 percent of the growing stock volume in the nation, the danger of overcutting on these lands is apparent. Furthermore, privately owned forestlands provided 71.3 percent of the total volume of sawtimber removed in the nation in 1970.

The problem of overcutting exists on all privately owned forestland in the nation, but it appears to be more serious on forest industry lands. With 13.4 percent of the nations commercial timberland acreage, and roughly 15.5 percent of the growing stock and sawtimber volume of the nation, forest industry lands provided 29 percent of all the sawtimber removed in 1970. Farm and other private forestlands, with 59.4 percent of the acreage and with 31 percent of the sawtimber volume and 42.2 percent of the growing stock volume provided 42 percent of the sawtimber removed in the nation in 1970.

Overcutting has occurred in both hardwood and softwood species. The percentage rate of softwood sawtimber removal exceeded the percentage volume of softwood sawtimber on private forestland by 43 percent. The percentage rate of hardwood sawtimber removed exceeded the percentage volume of hardwood sawtimber on these lands by 10 percent.

Overcutting of softwood species occurred on forest industry lands and overcutting of hardwood species occurred on farm and other private forest lands. The percentage rate of softwood sawtimber removal exceeded the percentage volume of softwood sawtimber on forest industry lands by more than 100 percent in 1970. The percentage rate of hardwood sawtimber removal exceeded the percentage volume of hardwood sawtimber on farm and

other private forestlands by 11.2 percent.

As a result of the data collected by the United States Forest Service concerning forest growth and wood removal, the need for silviculture practices, particularly on farm and other private forestland, is becoming acute. A forest must be managed and operated as a garden, and this approach must be instituted as expeditiously as possible on small forestland holdings. Mr. John McGuire, Chief of the U.S. Forest Service points out that the largest percentage of increased wood removal will have to be derived from small, private, non-industry lands which are presentl the most mismanaged of all types of forestland.

The immediate need for forestland management on a large scale is also demonstrated by the future decrease in sawtimber removal from forestland in the Pacific Coast region of the nation. Presently the Pacific Coast provides roughly 40 percent of the sawtimber harvested annually in the United States. Pacific Coast forestland has reached peak production, however, and future removal is expected to be significantly less. With the decline of the largest sawtimber producing region in the United States and accelerated demand for sawtimber in the future, forestland management has become crucial to the industry.

Sawtimber Growth and Removal In Maine

Privately owned forestland comprises 98 percent of the total commercial forest land in Maine. Of this amount, forest industry lands comprise 49 percent, and farm (7%) and other private lands (42%) comprise 49 percent of the total commercial forestland acreage in Maine.

Softwood sawtimber comprised the largest percentage of sawtimber removed from Maine forests in 1970. Of the total sawtimber volume removed, 67.5 percent was softwood compared to 78.4 percent of the growing stock which was softwood in 1970. While 32.5 percent of the sawtimber removed in Maine in 1970 was hardwood, 21.6 percent of the State's growing stock was hardwood. These statistics indicate that hardwood is being overcut in the State.

Unlike the United States, the only type of forestland in Maine that experienced overcutting in 1970 was farm and other private forestland. With 43 percent of the sawtimber volume and growing stock volume, these lands provided 52.6 percent of the sawtimber removed in Maine. Forest industry lands, on the other hand, with 55 percent of the growing stock and sawtimber volumes in Maine, provided 45.9 percent of the sawtimber removed in 1970.

Overcutting on farm and other private forestland occurred in both the hardwood and softwood species. The rate of softwood sawtimber removal exceeded the percentage volume of softwood sawtimber on farm and other private forestlands by 16.7 percent, and the rate of hardwood removal exceeded the percentage volume of hardwood sawtimber on these lands by 18.5 percent.

The region which experienced the least cutting and in which the growing stock and sawtimber volumes exceeded the rate of removal in Maine was the northern region. Composed of Aroostook, Penobscot, Piscataquis, and Somerset Counties, the northern region contained 59.2 percent of the state's commercial forestland, roughly 65 percent of the growing stock and sawtimber volumes, and provided 45.5 percent of the sawtimber removed in

Maine in 1970.

The 12 remaining counties of Maine, with 40.8 percent of the State's commercial forestland, contained roughly 35 percent of the growing stock sawtimber volumes. This area experienced very intensive cutting in contrast to the northern region between 1958 and 1970, and provided 54.5 percent of the total volume of sawtimber removed. According to U.S. Forest Service data 79 percent of the sawtimber removed from the 12 county region between 1958 and 1970 was softwood when 69 percent of the sawtimber volume on these lands was softwood.

In addition to overcutting of hardwood and softwood sawtimber primarily on farm and other private forestland in Maine, there has been a significant decrease in the quality and diameter of trees, particularly hardwoods. According to manufacturers, including the Sherman Lumber Company (hardwood lumber) and the Saunders Bros. (hardwood turning), the quality and diameter of hardwood species has declined substantially in the past 20 years. Both firms have had to obtain their supply from more and more distant sources. If the White Mountain National Forest in New Hampshire and Maine prohibited timber removal, the Saunders Manufacturing Company could not obtain a source of supply. In addition, paper companies as Mr. Saunders points out, have not been prepared to negotiate long term contracts to supply high quality hardwood to wood manufacturers in the State.

The problem that exists for hardwoods also applies to a certain extent for softwood. The quality and diameter of softwood sawtimber has decreased in the past 20 years. Manufacturers using softwood indicate that they are using smaller trees compared to 20 years ago and they expect to utilize smaller trees in the future.

As the demand for forest products in the nation increases and as competition among various types of manufacturers increases for sawtimber, manufacturing enterprises in which raw wood comprises a small percentage of total cost will be able to outbid enterprises in which raw wood comprises a larger percentage of total cost for the raw material. Paper manufacturing, for example, in which raw wood constitutes 15 percent of the total cost of paper production will be able to outbid lumber producers for raw wood whose raw wood costs may be as much as 50 or 60 percent of total manufacturing costs.

According to the U.S. Forest Service publication "The Outlook For Timber In The United States," manufactured forest products including lumber, plywood, furniture, and veneer will become exceedingly costly as the various types of manufacturers compete for raw wood. Paper, hardboard, particleboard, low grade plywood and other wood products which comprise a smaller percentage of total production cost will be better able to compete for the resource. In some cases, manufacturing enterprises will produce a number of wood products, some of which will utilize the waste of other products or low quality wood.

If the U.S. Forest Service prediction is accurate, the paper companies of Maine will be able to outbid lumber, woodturning, and furniture manufacturers for the raw wood during a wood shortage (see Section "T"). In addition, the waste from the paper production and low quality sawtimber could be used to produce other products such as particleboard and fibreboard in conjunction with paper.

PRIVATE TIMBERLANDS IN MAINE: A UNIQUE RESOURCE

Maine is the most heavily forested state in the nation - 90% or 18 million acres are covered with productive forest. Consequently, the State economy and well-being are closely tied with the future of the resource. In order that new policies, priorities and programs fit the resource they affect, the history and structure of the forest must first be understood. Realistic management policies, based on sound, long-range planning and long-term experience, will ensure a wide array of benefits to people and wildlife.

Maine also has the highest percentage of privately-owned forest in the nation. The history of this ownership is well-documented in the State archives; however, the management record, developed over the past two centuries, is mainly in private files. Land ownership has been a private business - to the farmer, settler, lot owner, investor and wood-using industries. State government is just now becoming more active on public ownerships.

Today, about 95% of Maine timberlands are in private ownership. This ownership can be divided into two categories:

- Fifty percent by large, integrated forest products companies, possessing both lands and mills - primarily pulp and paper companies, many of which also own lumber mills or other wood processing facilities; and

- Fifty percent by private individuals, including farm lots, shore lots, town and city properties - about half of which is professionally managed, in comparatively large tracts.

This paper primarily describes the private ownerships under professional management which account for approximately 25% of the forested area of Maine. These lands and the management policies on them have been particularly significant in the development of the State's history.

This group has maintained high standards of stewardship and responsibility, contributing greatly to a resource structure and quality uniqu to Maine.

Maintaining the diversity of and cooperation between all ownership types is a key to the greater future of the renewable forest resource.

ORGANIZING A LAND STRUCTURE

The township is the basic civil division. Each township is approximately six miles square, containing 23,000 acres, more or less, an serves as the basic ownership and management unit. Many of these townships were originally laid out early in the 1800's, at the time Maine began separation from Massachusetts. The State intended that these towns would be further divided into sections to be organized, settled and developed so that the private sector would foster agriculture and industry to expand the State's tax base and thus, repay debts from the Revolutionary War and War of 1812.

Many of the townships, in what is today the Organized Territory, were thus settled; however, the westward movement of homesteaders, climate, and numerous other factors, caused a decline in interest by both citizens and government in the lands north and west of Central Maine. The area was generally looked upon as a risky investment for timberlands; there was little prospect of a reasonable return because of low demand for wood products from that area.

However, some investors, with long-range objectives, did invest in the area specifically for commercial forest purposes. They established a system of undivided ownership - and were immediately faced with a common set of problems. Protection from fire, insects and disease was the first challenge - to keep the forest resource intact and growing.

From the protective system developed by the owners later evolved the Maine Forestry District in 1906, which became the Maine Forest Service in 1968 and is today part of the Department of Conservation (for more details, see references at end of paper).

Other situations soon followed. Timber trespass and squatters were extremely serious until the era of easy access made better supervision possible. "Trespass" - the illegal harvest and theft of wood - was difficult to prevent, especially near settled areas where cutters could easily cross boundary lines unobserved. Noticeable increases in trespass occurred with each downturn of the State's economy. Squatters posed direct threats to ownership rights - an unauthorized squatter could gain title after twenty years. In addtion, fires used by settlers to clear lands often caused major forest destruction. Many fires originated in Canada and the scars are clearly visible today. One such fire, started in June, 1934, burned 75,000 acres of St. John and Allagash Valley woodlands.

As timberland values increased over time, the policies of non-division, protection and close supervision proved to be of tremendous benefit to the State. This ownership has been stable - considered a source of wood products; a growing forest rather than real estate. The unbroken blanket of Maine woodlands contrasts sharply with rocky fields just across the boundary in Quebec and New Brunswick where active clearing and settlement was encouraged by provincial governments.

IN-COMMON AND UNDIVIDED OWNERSHIPS

Today, most townships are owned by different combinations of individuals and companies. Each owner has a fractional interest with fee title to a specific amount of acreage on which he must individually meet

legal and taxation responsibilities. Each is completely free to independently enjoy the benefits of private ownership, yet in this case, has placed the lands under common and cooperative management for the greater benefit for all. These acreages are not marked off on the ground with survey lines. Rather, the ownership interests are held jointly and cooperatively so that each party has a fractional interest in every square foot of the whole township. This arrangement divides the risk and allows the unit to be more efficiently managed as one large parcel.

This approach originated in the early days of commercial sailing when ship owners joined together to purchase ships and cargoes - for example, each of ten owners could have one-tenth interest in each of ten ships, rather than total ownership of one vessel. Thus, the risk of loss was spread out and greatly reduced.

Land ownership under this system has been greatly divided through inheritance so that fractional interests in single towns are now small. The ownership portions in one northern township, for example, are: 31/72, 155/1728, 31/1728, 31/288, 7/192 and 61/192. To further complicate the pattern, each of these fractions represents different groups of owners, each party of which in turn has a different interest. For instance, the 31/72 fraction represents the combined ownership of 31 separate individuals.

Each owner retains his individual rights on every tract he owns. Management interests may vary from township to township - just as in organized towns. By banding together for cooperative management, it is possible for the owners to share the costs and benefits of joint marketing efforts, professional foresters and staff, plus other planning and multi-use efforts. The arrangement is voluntary and may be dissolved at

any time.

Occasionally, for the sake of management, consolidation is beneficial. Upon mutual agreement or legal proceedings, the parties have opportunity to divide a tract into wholly-owned segments laid out on the ground.

Because of the complex pattern, as well as increasing legal and financial pressures, this type of ownership is fragile. Historically, the undivided ownership structure has survived due to an unusual degree of cooperation between all parties and with government, with each meeting its responsibilities. However, if the costs and risks of owning and managing the lands become too great to justify, the owner might be forced to liquidate the resource or break down the ownership and sell off parcels. In either case, he can recoup his financial investment, but it is the land resource, and ultimately the public benefits derived from integrated management, that will suffer the damages.

This is not only a problem in Maine - it is the major problem of landowners throughout the nation. Fifty-nine percent of the commercial forest in the U. S. is owned by private owners, averaging approximately 67 acres each, many of whom are unable to manage their parcels economically or make the wood available to meet the growing needs of the public. Professional management is one way to deal with the problem. Owner associations are another way to take advantage of sharing costs and risks.

LAND MANAGEMENT

Land management means resource protection, conservation, planning and administration of uses. It involves caring for the property so that it will provide a wide range of resource-related benefits to private

owners and to the public. This is achieved through the application of scientific principles and private and public responsibilities to cause improvement, productivity and protection of the total resources of the forest - land, soil, minerals, water, wood, wildlife, aesthetics, recreation and others.

Sound management involves planning for long-range benefits, based upon mutually agreeable policies and needs of the resource. The land manager is charged with blending professional experience with people management, resource planning, economics, protection of rights and interest in long-term public and private benefits.

In Maine, we have a heritage of private owners who want their property and rights protected and professionally managed. Woodland owners, owning few or many acres, are encouraged to take advantage of associations or other management structures. Such management is necessary not only to benefit forest and wildlife potential, but also to provide stable, long-term employment and other benefits to people - the citizens and taxpayers of this state.

* Further references: Maine Land Office Records brochure, State Archives, Augusta, Maine

"History of the Maine Forestry District" - Austin Wilkins, (unpub. ms.)

Seven Islands Land Company
2nd Rev., Jan., 1977

"C"

NORTHEASTERN

FOREST SURVEY FIELD MANUAL

Northeastern Forest Experiment Station

Upper Darby, Pa.

Forest Service

U. S. Department of Agriculture

001 - INTRODUCTION

This field manual provides Forest Survey field instructions for the Northeastern Forest Experiment Station and other cooperating agencies to be used in establishing and measuring field plots in the reinventories of the Northeastern States. It contains procedures as given in the Forest Service Handbook FSH 4810, March 1967, with supplements covering local procedures designed to utilize and recover information from initial surveys.

Two different types of field plots will be established in the field. They will hereafter be referred to as new ground and as remeasured plots.

The new ground plots will be an observation based on a pattern of 10 prism points using a calibrated prism, BAF 37-1/2. The remeasured plots will be a measurement of the 1/5-acre plot from the initial survey.

Detailed instructions for the completion of the new ground plots are contained in this section of the manual. Remeasured plot instructions are contained in the blue section of the manual.

01 - DEFINITION OF TERMS. Terms used in this handbook are defined below.

1. Acceptable Trees. Growing-stock trees of commercial species that meet specified standards of size and quality, but not qualifying as desirable trees.

2. Afforested Areas. Lands formerly not in tree cover, but converted to forests by planting.

3. Allowable Cut. The volume of timber that would be cut on commercial forest land during a given period under specified management plans aimed at sustained production of timber products.

4. Area Condition Class. A classification of commercial forest land based upon stocking of desirable trees and other conditions affecting current and prospective timber growth.

5. Available Cut. The volume of timber that would be available for cutting on commercial forest land during a given period under specified assumptions concerning growth, cut, mortality, and forest management practices.

6. Bureau of Land Management Lands. Federal land administered by the Bureau of Land Management.

7. Clear Panel. A section of the tree surface one-fourth the circumference of the tree and at least 2 feet long free of limbs, knots, bumps, and other indications of defect which preclude clear cuttings.

8. Commercial Forest Land. Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land have the capability of producing in excess of 20 cubic feet per acre per year of industrial wood under management. Currently inaccessible and inoperable areas are included, except when the areas involved are small and unlikely to become suitable for production of industrial wood in the foreseeable future.)

9. Commercial Species. Tree species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality, such as hawthorn and sumac.)

10. Cull. Portions of a tree that are unusable for industrial wood products, because of rot, form, or other defect.

11. Crown Class. A classification of trees based on dominance in relation to adjacent trees in the stand as indicated by crown development and amount of light received from above and the sides. Crown classes recognized by the Forest Survey include.

a. Open Grown. Trees with crowns which have received full light from above and from all sides throughout all or most of the life of the trees, particularly during early development.

b. Dominant Trees. Trees with well-developed crowns extending above the general level of the crown cover and receiving full light from above and part light from the sides.

c. Codominant Trees. Trees with crowns forming the general level of the crown cover and receiving full light from above, but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides.

d. Intermediate Trees. Trees with crowns either below or extending into the crown cover formed by codominant and dominant trees, receiving little direct light from above, and none from the sides; usually with small crowns considerably crowded on the sides.

e. Overtopped Trees. Trees with crowns entirely below the general level of the crown cover, receiving no direct light either from above or from the sides.

12. Desirable Trees. Growing-stock trees of commercial species (a) having no serious defects in quality limiting present or prospective use for timber products, (b) of relatively high vigor, and (c) containing no pathogens that may result in death or serious deterioration before rotation age. (Note: These are the types of trees forest managers try to grow; that is, the trees favored in cultural operations. In over-rotation age stands, desirable trees are low-risk trees.)

13. Diameter Classes. A classification of trees based on diameter outside bark, measured at breast height (4-1/2 feet above the ground). (Note: D.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h., inclusive.)

14. Face. A section of the tree surface one-fourth the circumference of the tree extending the full length of the log.

15. Farm. Either a place operated as a unit of 10 or more acres from which the sale of agricultural products totals $50 or more annually or a place operated as a unit of less than 10 acres from which the sale of agricultural products for a year amounts to at least $250. Places having less than the $50 to $250 minimum estimated sales in a given year are also counted as farms if they can normally be expected to produce products in sufficient quantity to meet the requirement of the definition.

16. Farm Operator. A person who operates a farm, either doing the work himself or directly supervising the work.

17. Farmer-Owned Lands. Lands owned by farm operators. (Note: These exclude land leased by farm operators from nonfarm owners, such as railroad companies and states.)

18. Farmer-Owned Leased. Lands owned by farm operators, but leased to forest industry.

19. Forest Industry Lands. Lands owned by companies or individuals operating wood-using plants.

20. Forest Land. Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparison of basal area and/or number of trees, by age or size and spacing with specified standards. The minimum area for classification of forest land is one acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet in width.) Also see definitions for land area, commercial forest land, noncommercial forest land, productive-reserved forest land, stocking, unproductive forest land, and water.

21. Forest Trees. Woody plants having a well-developed stem and usually more than 12 feet in height at maturity.

22. Forest Types. A classification of forest land based upon the species forming a plurality of live-tree stocking. (Note: Types shall be determined on the basis of species plurality of all live trees that contribute to stocking; that is, up to a maximum of 16 percent at each plot point.)

23. Gross Growth. Annual increase in net volume of trees in the absence of cutting and mortality.

24. Growing-Stock Trees. Live trees of commercial species qualifying as desirable or acceptable trees. (Note: Excludes rough, rotten, and dead trees.)

25. Growing-Stock Volume. Net volume in cubic feet of growing stock trees 5.0 inches d.b.h. and over from a 1-foot stump to a minimum 4.0 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs.

26. Growth. (See definitions for net growth, gross growth, and ingrowth.)

27. Hardwoods. Dicotyledonous trees, usually broad-leaved and deciduous.

28. Idle Farmland. Includes former croplands, orchards, improved pastures and farm sites not tended within the past 2 years and presently less than *-16.7-* percent stocked with trees.

29. Improved Pasture. Land currently improved for grazing by cultivation, seeding, irrigation, or clearing of trees or brush.

30. Indian Lands. Tribal lands held in fee by the Federal Government, but administered for Indian tribal groups, and Indian trust allotments

31. Industrial Wood. All roundwood products, except fuelwood.

32. Ingrowth. The number or net volume of trees that grow large enough during a specified year to qualify as saplings, poletimber, or sawtimber.

33. Land Area

a. Bureau of the Census. The area of dry land and land temporarily or partly covered by water, such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than 1/8 of a statute mile in width; and lakes, reservoirs, and ponds less than 40 acres in area.

b. Forest Survey. The same as the Bureau of the Census, except minimum width of streams, etc. is 120 feet and minimum size of lakes, etc. is one acre.

34. Limb. That part of the tree above the stump which does not meet the requirement for sawlogs and upper-stem portions, including all live, sound branches to a minimum of 4 inches d.o.b.

35. Log Grades. A classification of logs based on external characteristics as indicators of quality or value.

36. Logging Residues. The unused portions of trees cut or killed by logging.

37. Miscellaneous Federal Lands. Federal lands other than National Forests, lands administered by the Bureau of Land Management, and Indian lands.

38. Miscellaneous Private Lands. Privately owned lands other than forest-industry and farmer-owned lands.

39. Mortality. Number or sound-wood volume of live trees dying from natural causes during a specified period.

40. National Forest Land. Federal lands which have been legally designated as National Forests or purchase units, and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III lands.

41. Net Annual Growth. The increase in volume of a specified size class for a specific year. (Note: Components of net annual growth include the increment in net volume of trees at the beginning of the specific year surviving to its end plus volume of trees reaching the size class during the year minus the volume of trees that died during the year minus the net volume of trees that became rough or rotten trees during the year.)

42. Net Volume. Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

43. Noncommercial Forest Land. (1) Unproductive forest land incapable of yielding crops of industrial wood, because of adverse site conditions and (2) productive-reserved forest land.

44. Noncommercial Species. Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees suitable for industrial wood products.

45. Nonforest Land. Land that has never supported forests and lands formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1-to-40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide, and clearings, etc., more than one acre in size, to qualify as nonforest land.)

46. Nonstockable. Areas of forest land not capable of supporting seedlings of commercial species, because of the presence of rock, water, etc.

47. Nonstocked Land. Commercial forest land less than 16.7 percent stocked with growing-stock trees.

48. Old-Growth Sawtimber Stands. Sawtimber stands in which 50 percent or more of the area is occupied by old-growth sawtimber trees.

49. Old-Growth Sawtimber Trees. Trees that are at least 100 years old.

50. Other Federal Lands. Federal lands other than National Forests, including lands administered by the Bureau of Land Management, Bureau of Indian Affairs, and other Federal agencies.

51. Other Removals. The net volume of growing-stock trees removed from the inventory by cultural operations, such as timber-stand improvements, land clearing, and changes in land use.

52. Overgrown Knot. The scar left in the bark by a limb completely overgrown, but still outlined by the circular configuration in the bark.

53. Overstocked Areas. Areas where growth of trees is significantly reduced by excessive numbers of trees. (Note: Stands will be considered overstocked if stocking is 133 percent or more, when 100 percent represents the minimum level of stocking required to make full use of the site.)

54. Ownership. Property owned by one owner, regardless of the number of parcels in a specified area.

55. Plant By-products. Wood products, such as pulp chips, obtained incidental to production of other manufactured products.

56. Plant Residues. Wood materials from manufacturing plants not utilized for some product. (Note: Includes slabs, edgings, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and pulp screenings.)

57. Poletimber Stands. (See stand-size class.)

58. Poletimber Trees. Growing-stock trees of commercial species at least 5.0 inches in d.b.h., but smaller than sawtimber size.

59. Productive-Reserved Forest Land. Forest land sufficiently productive to qualify as commercial forest land, but withdrawn from timber utilization through statute, administrative designation, or exclusive use for Christmas-tree production as indicated by annual shearing.

60. Quality Classes. A classification of sawtimber volumes by log or tree grades.

61. Rangeland. Land on which the natural plant cover is composed principally of native grasses, forbs, or shrubs valuable for forage.

62. Rotation. The period of years between establishment of a stand of timber and the time when it is considered ready for cutting and regeneration.

63. Rotten Trees. Live trees of commercial species that do not contain at least one 12-foot sawlog -or two noncontiguous sawlogs, each 8 feet or longer, - now or prospectively, and/or do not meet Regional specifications for freedom from defect primarily because of rot, that is when more than 50 percent of the cull volume in a tree is rotten.

64. Rough Trees (1) Live trees of commercial species that do not contain at least one 12-foot sawlog--or two noncontiguous sawlogs, each 8 feet or longer, now or prospectively, and/or do not meet Regional specifications for freedom from defect primarily because of roughness or poor form, and (2) all live trees of noncommercial species.

65 Roundwood Products. Logs, bolts, or other round sections cut from trees for industrial or consumer uses. (Note: Include sawlogs, veneer logs and bolts; cooperage logs and bolts; pulpwood; fuelwood; piling; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

66 Salvable Dead Trees Standing or down dead trees that are considered merchantable by Regional standards.

67. Saplings. Live trees 1.0 inch to 5.0 inches in diameter at breast height.

68. Sapling-Seedling Stands (See stand-size class)

69. Sawlog A log meeting minimum standards of diameter length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter inside bark for softwoods of 6 inches (8 inches for hardwoods) or other combinations of size and defect specified by Regional standards

70. Sawlog Portion. That part of the bole of sawtimber trees between the stump and the sawlog top

71 Sawlog Top. The point on the bole of sawtimber trees above which a sawlog cannot be produced. The minimum sawlog top is 7 0 inches d.o b. for softwoods and 9.0 inches d.o b. for hardwoods

72 Sawtimber Stands (See stand-size class.)

73 Sawtimber Trees. Live trees of commercial species containing at least a 12-foot sawlog or two noncontiguous sawlogs, each 8 feet or longer, and meeting Regional specifications for freedom from defect. Softwoods must be at least 9.0 inches in diameter breast height and hardwoods at least 11.0 inches in diameter.

74 Sawtimber Volume. Net volume of the sawlog portion of live sawtimber in board feet International 1/4-inch rule.

75 Seedlings. Live trees less than 1.0 inch in diameter at

76. Site Classes. A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

77. Softwoods. Coniferous trees, usually evergreen having needles or scalelike leaves.

78. Sound Knot or Limb. Knots or limbs intergrown or encased with the surrounding wood and with no indication of decay. Bark may or may not be present on the limbs.

79. Stand-size Class. A classification of forest land based on the size class of growing stock trees on the area; that is, sawtimber, poletimber, or seedlings and saplings. (Note: Only those trees that contribute to no more than 16 percent stocking at a plot point will be considered in determining stand-size class.)

a. Sawtimber Stands. Stands at least -16.7- percent stocked with growing stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

b. Poletimber Stands. Stands at least -16.7- percent stocked with growing stock trees of which half or more of this stocking is in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

c. Sapling-Seedling Stands. Stands at least -16.7- percent stocked with growing stock trees of which more than half of the stocking is saplings and/or seedlings.

80. State, County, and Municipal Lands. Lands owned by states, counties, and local public agencies or municipalities, or lands leased to these governmental units for 50 years or more.

81. Stocking. The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard.

82. Timber Removals. The net volume of growing stock trees removed from the inventory by harvesting; cultural operations, such as timber-stand improvement; land clearing; or changes in land use.

83. Timber Products. Roundwood products and plant by-products. (Note. Timber products output includes roundwood products cut from growing stock on commercial forest land; from other sources, such as cull trees, salvable dead trees, limbs, and saplings; from trees on noncommercial and nonforest lands, and from plant by-products.)

84. Tree Size Class. A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings and seedlings.

85. Unproductive Forest Land. Forest land incapable of producing 20 cubic feet per acre of industrial wood under natural conditions, because of adverse site conditions. (Note: Adverse conditions include sterile soils, dry climate, poor drainage, high elevation, steepness, and rockiness.)

86. Upper Stem Portion. That part of the bole of sawtimber trees above the sawlog top to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

87. Urban and Other Areas. Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards; cemeteries; roads; railroads; airports; beaches; powerlines and other rights-of-way; or other nonforest land not included in any other specified land use class.

88. Water

a. Bureau of the Census. Streams, sloughs, estuaries, and canals more than 1/8 of a statute mile in width; and lakes, reservoirs, and ponds more than 40 acres in area.

b. Forest Survey. The same as the Bureau of the Census, except minimum width of streams, etc. is 120 feet and minimum size of lakes, etc. is one acre.

89. Young-Growth Sawtimber Stands. Sawtimber stands in which 50 percent or more of the stand is occupied by young-growth sawtimber trees.

90. Young-Growth Sawtimber Trees. Sawtimber trees less than 100 years old.

"D"

STATE
PROGRAM
HANDBOOK

FORESTRY INCENTIVES PROGRAM

FOR Maine ASCS Offices

SHORT REFERENCE

1-ME (FIP)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL STABILIZATION AND CONSERVATION SERVICE
Maine State ASCS Office
Orono, Maine

7 FP 1 PLANTING TREES

A Purpose. To establish a stand of forest trees for timber production purposes, and to preserve and improve the environment.

B Applicability. To land suitable for the establishment of a stand of trees for forestry purposes in designated FIP counties.

C Policies.

1 A Forest Management Plan is required in all cases to be eligible for cost-sharing. Cost-sharing is limited to the planting of trees for the production of forest produce where the potential productivity of the site meets or exceeds established minimum standards.

2 Cost-sharing is authorized for clearing land occupied largely by scrubby brush only where essential to permit planting desirable tree species. Technical assistance must be utilized to determine suitability of the land for clearing and the measures necessary to prevent erosion.

3 Cost-sharing for fencing is limited to permanent fences (excluding boundary and road fences) needed to protect the plantings from grazing.

4 Cost-sharing is not authorized for:

a This practice on land from which a stand of trees has been harvested by the current owner during any one of the past five years.

b Repeating this practice with the same person on the same acreage.

c Planting orchard trees or planting for ornamental purposes. Plantings for Christmas tree production are not eligible.

-- d Requests for planting trees on less than five acres. --

5 Plantings must be protected from destructive fire and destructive grazing.

6 Chemicals used in performing this practice must be federally and locally registered and must be applied in accordance with authorized registered uses, directions on the label, and other Federal or State policies and requirements.

7 Consideration must be given to preserving and improving the environment.

D Specifications. Trees of a species recommended by the Maine *--Bureau of Forestry, Forest Management Division may be established--* by the planting of seedlings or by direct seeding of viable seeds.

E Technical Responsibility. Assigned to FS.

F Maximum Federal Cost-Shares.

1 Regular rates:

a $20.00 per acre for necessary clearing of site.

b $15.00 per acre where use of herbicides is necessary to control herbaceous weeds and/or brush by hand application.

c 75 percent of the cost of aerial application of herbicides (cost to be based on the State's contract price for aerial application of herbicides).

--d $44.00 per 1,000 trees planted, not to exceed 1,000 trees per acre.--

e Direct seeding:

(1) $13.00 per acre for seeding white pine or white spruce on sod, pasture or burned land.

(2) $10.50 per acre for seeding red pine on sod, pasture or burned land

(3) $12.00 per acre for seeding white pine or white spruce on cultivated land.

(4) $9.00 per acre for seeding red pine on cultivated land.

8 FP 2 IMPROVING A STAND OF FOREST TREES

A Purpose. To increase timber growth and quality on sites suitable for the production of saw timber and veneer logs.

B Applicability. To stands of forest trees needing improvement for the primary purpose of producing saw timber and veneer logs where the potential productivity of the stand or the site meets or exceeds minimum forestry standards in counties designated for FIP.

C Policies.

1 Cost-sharing is authorized for:

a Thinning, pruning crop trees, or releasing desirable seedlings and young trees.

b Firebreaks and fire suppression lanes for forest protection and erosion control measures on fire lanes, logging roads and trails.

c Site preparation for natural reseeding if:

(1) Sufficient desirable seed trees are present to permit natural reseeding.

(2) Brush, dense litter, and other material is broken up or removed to expose the forest soil to permit reseeding and

(3) Seed trees will be left until the area is restocked.

d Permanent fencing (excluding boundary and road fences) needed to protect the area from domestic livestock. Cost-sharing may be authorized for fencing as a single eligible component where it is the only measure needed for successful timber stand improvement.

2 Cost-sharing is not authorized for timber stand improvement measures with the same person on the same acreage for which cost-sharing has been paid for the planting of trees, except where it is necessary to release a planted area from sprouts of undesirable vegetation that have heavily overtopped the planted trees.

3 Chemicals used in performing this practice must be Federally and locally registered and must be applied strictly in accordance with authorized registered uses, directions on the label, and other Federal or State policies and requirements.

4 The area must be protected from destructive fire and destructive grazing.

5 Improvement measures should be carried out in such a manner as to preserve or improve the quality for the environment, especially wildlife habitat and the appearance of the area.

6 A Forest Management Plan on the acreage to be improved is required to be eligible for cost-sharing.

--7 Requests for TSI on less than five areas will not be approved. --

D Specifications.

1 For timberstand improvement (TSI), measures such as thinning, seeding, weeding, and pruning are authorized, with the trees to be treated marked prior to commencement of operation.

2 For fire protection, measures such as firebreaks and access roads are authorized.

3 For protection from grazing, permanent fencing is authorized.

4 For erosion control, measures to prevent erosion on logging roads and skid trails are authorized.

5 Site preparation to permit natural reseeding as authorized.

E Technical Responsibility. Assigned to FS.

F Maximum Federal Cost-Shares.

1 Regular rates:

a Non-commercial improvement cutting in older stands on a marked basis where non-merchantable or inferior quality trees must be girdled, cut and/or removed from competition *-- is $30.00 per acre. --*

b Weeding young stands:

--(1) $30.00 per acre.--

(2) 75 percent of the cost of aerial application of herbicides (cost to be based on the State of Maine's contract price for aerial application of herbicides.)

c Pruning:

(1) For white and red pine: $36.00 maximum cost per acre depending on height pruned.

(2) For Hardwoods: $18.00 maximum cost per acre depending on height pruned.

d Fire Protection:

(1) Constructing firebreaks: 75 percent of the cost of performing the required measures, not to exceed an amount determined by the COC.

(2) Constructing access roads to ponds for woodland protection in managed woodlots: 75 percent of the cost of performing the required measures, not to exceed an amount determined by the COC.

e Establishing erosion control measures on logging roads and skid trails in managed woodlots: 75 percent of the cost of performing the required measures not to exceed an amount determined by the COC.

f Site preparation to permit natural reseeding: 75 percent of the cost of performing the required measures not to exceed $20.00 per acre.

g Permanent fencing needed to protect the area from grazing: 75 percent of the cost, not to exceed an amount determined by the COC.

9 SF SPECIAL FORESTRY PRACTICES

A Authority. The Director, ELD, ASCS after consultation with the Forest Service approve special forestry practices needed to take care of a significant and unique local condition for which national FIP practices are not adequate.

B Policies. Such practices shall:

1 Be subject to the same policies and standards as other practices in the program.

2 Specify the eligible measures on which Federal cost-sharing may be approved.

C Approval. SF practices may be approved by Director, ELD, for inclusion in county programs, upon recommendations of the county development group with concurrence of the State group.

D Practice Identification. SF practices shall be identified as SF1, SF2, SF3, etc.

E Guidelines For "SF" Practices. In development of practices under the "SF" authority, the following conditions must be met. The practice must:

1 Be consistent with the overall objectives of FIP.

2 Be of the "permanent" type which provides enduring benefits.

3 Result in significant benefits to the public.

4 Conform to the applicable standards of any State or local regulatory agencies.

10-20 (RESERVED)

"E"

American Forest Institute

Lester A. DeCoster
New England Regional Manager

September 28, 1976

Representative Douglas Smith
Chairman, Joint Select Committee
on Forest Resources
State House
Augusta, Me. 04330

Dear Doug:

I'll be unable to attend your meeting on September 29, but would like to pass along a few comments on forest ownership and forest management.

There are about 100,000 individuals who own forest land in Maine, and their acreage totals almost half of the resource. About half of our annual cut also comes from these ownerships.

The private ownerships are doubly important because they are generally clustered near where the people are. The lots are small - generally 100 acres or less - but they are extremely accessible - close to markets and public highways.

Unfortunately, forest management is not high in the consciousness of most private individuals who own forest land; so we have a problem.

Dissemination of Forest Management Knowledge:

To affect private land management, we have to raise the level of consciousness concerning forestry. I believe, this is supposed to be one of the roles of Extension Service, but we have only one Extension Forester in the state of Maine. He cannot possible produce the necessary materials, hold the necessary workshops, and do what needs to be done to reach these private forest owners scattered all over the state of Maine.

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We have a service forestry staff in the Maine Bureau of forestry, but their role, as I understand it (having been a Service Forester, myself, at one time), is to get forest management applied on the ground. If the Service Forester spends time at workshops and at promotional work, this has to be taken away from practical application on the ground.

So we have a gap.

Survey work also shows that the forest base is being owned by more and more people for shorter lengths of time. This makes forest owners harder to reach and a strong extension effort becomes even more important.

This problem is nothing new - it's existed for years; however, I think it is getting worse as the Department of Conservation seems to have dropped most of its information and education activities and the Service Forester workload is expanding. I've written to Dr. Howard Neville, President of the University of Maine, and the Director of Extension to express my concern on this, and there will be some discussions on examining Extension Service priorities in Maine as they relate to forest

It's my impression that government regulations do little to help any of these problems; basically, they add another discouraging factor and another expense to people who are trying to manage their land and do nothing to educate those who have no interest in management. I don't believe that regulation is the solution to forest management problems on private ownerships in Maine. I believe the approach should be one of advice and services and the dissemination of knowledge.

Getting the Work Done:

One of the most common problems our tree farmers report to us is that of getting forestry work done on their lands. A high percentage of forest owners do not have time or equipment to do their own forestry work. There are few reliable contractors to do this work on private lands. This brings us to the Forest Improvement Program, a program which, as you know, pays cost sharing to encourage farmers and forest owner to do a variety of conservation measures.

The incentive funds are a fine and necessary program, but if trained labor isn't available to do the work, we have a problem. I would encourage that the forest improvement program look at more effort in the development of contractors to do forestry work.

I'm enclosing a speech by Hugh Putnam, of the New England Forestry Foundation, raising some of the points I'm going to talk about in detail.

Government programs seem to breed forms that boggle the mind and this program is no exception. If we are going to encourage landowners and contractors to work with it, we need simplified procedures.

We also have a problem in that the forest improvement projects are broken up into very specific forest practices. Generally, only one practice is approved at a time and a small acreage at that. This spreads the money and paper work around, but unfortunately, that does not fit the requirements of a good forestry program. Many forestry practices should be done over a large area all together to have their best effect; for example, when doing pruning - thinning and weeding should be done at the same time. Some harvesting and timber-stand improvement practices should see

cont'd

proper road and boundary work done at the same time. A "block-grant" approach rather than a specific one-practice approach would better fit forestry needs. It would also allow a large enough job to encourage the build-up of competent forestry labor.

I'm enclosing two other presentations of interest; one by David Smith on Northeastern Sulviculture (Forest Management); the other - a speech on property tax and its effect on timber management decisions by David B. Field. I think the speeches make excellent points.

To summarize my lengthy letter which I hate to write - and would hate even more to receive - we have a potential, highly-productive, forest land base in our private ownerships in Maine. We have forestry experts and forestry programs in place, but I feel we have significant gaps in programs that disseminate this knowledge to the large body of forest landowners gathered over the state, and significant gaps in our systems for effectively getting the needed forestry work done.

To further confound your reading file, I enclose Maine Forest Facts which gives statistics on land ownership and management in Maine, and Forest Facts and Figures giving the national statistics.

Thanks for the opportunity to comment.

Regards,

Lester A. DeCoster
New England Regional Manager

LAD:pl
Enclosures

cc Bradford Wellman
Clifford Swenson
Dave Clement
Joe Lupsha

"F" OCT. 21, 1976

JOINT SELECT COMMITTEE ON FOREST
RESOURCES - PUBLIC MEETING
SPETEMBER 29, 1976

My name is Robert L. Gammons - I am a Regional Forester, for the Maine Forest Service CFM Program in the Eastern Region of the State. This Region encompasses all of Hancock and Washington and most of Penobscot County, except for the northern tier of towns adjacent to Aroostook County. (Patten-Shin Pond area)

I am a graduate of the University of Maine, School of Forestry, wi a B.S. Degree in Forestry, awarded in 1956 - Prior to my employment with the Maine Forest Service, I have had positions with the U.S. Forest Service in W. Va. in National Forest Management and in the Engineering Sections of the U.S. Army, Corps of Engineers and the Boeing Airplane Co. With the Maine Forest Service, I have had 12 years experience as a District Service Forester in Washington County; 3 years experience as the Regional Forester, which also includes providing District Forester assistance to landowners in vacated and unfilled Districts within this Region, and also serving as the State Forest Nursery Supervisor, when the incumbent supervisior retired and the position was abolished as a cost savings measure. This type of function seems to be becoming my main endeavor in this most drecent austerity period.

To address some of the questions posed by the committee, at least, as how they apply to the Eastern REgion, some of the problems in establishing forestry that we find in our day to day contact with landowners. Problem of identification of woodlot owners, is an

inventory or other information on the number of owners exisiting in a District or Region and the acreage they own. True, this would be a changeable quantity, but it would give us a better idea of the resource we have to work with and could be updated as conditions and trends change.

2) Overcoming the ideas of some owners that harvesting forest crops is detrimental to the environment - these people use and demand products that come from wood fiber and we've got to impress upon these people that scientific forest management and harvesting are viable practices and necessary in the management of a resource - few people shudder when a potato harvester lumbers across a field or a sdage chopper harvests a corn field. What's the uproar over cutting trees---

3) In some areas there is a problem of overcoming the traditional harvesting practices used - this may be and probably is one of the main reasons for the previous stated problem. We still have many landowners and oeprators who are"gonna cut off the growth" or "clear my ground". Maybe this reverts back to the"settler instinct" when the forest was considered a nuisance to be disposed of; an obstacle to developement. Clearcutting is an acceptalbe forest management praftice and has its place in the prescriptions that a forester <u>may</u> recommend for a stand or certain timber conditions, but certainly all woodlots shouldn't arbitraily be relegated into a clear-cut symdrome - and it does become a succession syndrome with the developing stand.

4) We have problems in reaching or motivating landowners <u>soon</u> enough <u>too</u> many owners do not realize that forest stands are <u>not</u> "static" systems, that they do not stand still, waiting in the wings to be called at the owners whim. We get many calls on woodlots that have been left alone, - unmanaged, with overmature trees; with heavy cull; with an

undesirable under story and the owner wants to do "what's good for my trees". These owners are about 20 years too late.

5) The staffing of foresters has been a perenniel problem in the Eastern Region - when I became Regional Forester, almost 3 years ago, 3 of the 4 Districts were vacant - this includes the Washington District that I vacated, plus the South Penobscot District and the Lee Districts. These Dsitricts are one man shows, with no assistant foresters or techinicians, to carry on; to provide continuity. What happens is the remaining foresters attempt to carry on -- providing "grease to the squeaky wheels". This not only provides token service to the vacant Districts but the incumbent District's program also suffers. Perhaps these vacated Districts should remain unserviced but our ideas have been that these landowners are entitled to service and if we keep a little life in these areas, the start-up lag, when they are again manned won't be so severe. Eventually, over the last 2½ years, we were able, weathering personnel freezes, budget cuts, reassignments austerity programs, low pay scales etc. to fill all our Districts and for a short period of time we were at full strength and attempting to building up a long delayed regional management program. However, due to back to back transfers, the South Penobscot Dsitrict is <u>again</u> vacant; with requests for service being handled by myself and the two adjacent District Foresters. Recent decisions at the Bureau level, due to budget problems, have been made, indicating that this District will not be reactiviated, atleast in the near future, <u>if ever</u>. So here we go again. Maybe our philosophy is wrong on manning these vacated Dsitricts in the manner we are doing - maybe we should say to a landowner, sory, the Dsitrict your land is in has been deactivated and we won't be able to help you -- but we feel the landowner and taxpayer deserves a better shake than that method. Some landowners have had as many as five different foresters

advising them on their lots within a years time - a common greeting we get from a landowner is "Who's my forester for this week". One fellow suggested we put our name and number on the back of our uniform, so they can tell whose playing the position this time.
6) The Cooperative Forest Management Program as it was set up by the CFM Act is an assistance program for small woodlot owners but it is also under some constraints of the organization of any particular state. When state forestry management activities are closely associated with the small woodlot programs, the CFM Program becomes diluted. We are finding this to be true in Maine, with Dsitrict Foresters getting involved with L.U.R.C. management of State Lands, the Spruce Budworm Suppression Act, Resource Conservation of Developemnt Programs, Urban Forestry and Shade Tree Problems, various meetings, symposumes I and E Projects etc.

In the Eastern REgion, we haven't found this to be a servious dilutic as yet but new programs and duties seem to suddenly become priority obligations and the factors for serious dilution of CFM efforts are present and growing.

The problems of forest management on individual holdings are many; some I have touched on; some have or will have been mentioned by the other speakers, small landowners in the audience and panel members; some are difficult to solve. The problems are varied, a lack of continued forest management on small ownerships is a serious problem. A long period of time elapses before forestry investments can be repaid from the harvest of products Cultural expenses are high and other shorter-term investments of a non-forestry nature will possibly be looked upon with more appeal by the small owner. But the small ownerships are worth the effort - they supply industry with wood fiber; support the growing stock for the future, and according to the USFS and other resource authorities, small holdings will be playing an increasingly more

important role in the future, both in name and nationwide, not only in timber and fiber benefits but also the other non-timber benefits.

We'd like to see this committee recommend an increase in the funding for more Service Foresters, so that the Districts are smaller; so that the forester will have less of a potential workload; so that each individual woodlot can be given sufficient time; so that more owners can be developed in an area, rather than management by crisis and "oiling the squeaky wheel". In the Eastern Region Forester's Districts contain from 36-64 organized and unorganized towns and plantations - true, the unorganized townships do not have the small ownership workload but still there are some unorganized towns and plantations that do have many individual owners.

We'd like to see an increase in funding, so that Forestry Districts have assistant foresters or technician to assist the Service Forester and provide contunuity when vacancies occur. Too many mundane techincian type functions are performed by the Service Forester - assistants or technicians could do these jobs. Field time is more productive than office time - a District Forester tied up typing reports and correspondence in the office is not the most productive method of utilizing a four year professional forester.

The state classification for District Service Foresters should be up graded - a career ladder environment should be created, so that a Forester can progress in his field without having to transfer to other agencies to get a better position or leave state service altogether this has been a pereenniel problem with the Service Forestry Program in Maine, it is more apparent now.

We appreciate the committees interest in the small woodlot ownership problem - no appraisal of the Forest Resource situation of the State of Maine would be complete without it being seriously considered. Thank you for time and interest.

"G-1"

DEPARTMENT OF CONSERVATION

BUREAU OF FORESTRY

Augusta, Maine

TO: Primary Wood Processors

FROM: Fred E. Holt, Director, Bureau of Forestry FEH

Attached is the Maine Timber Cut Summary for 1974.

In 1974 there were 385 primary processing mills in the State. Reports were received from 374 mills, or 97% return. Of the total number of reporting mills in the State, 367 operated and 18 did not operate.

Below are shown changes that have occurred in the 1974 Maine Timber Cut as compared to the average of the previous 10 years of reports (1964 - 1973 inclusive).

The cooperation extended by hundreds of reporting mills is gratefully appreciated.

Additional copies of this Timber Cut summary are available on request.

MAINE TIMBER CUT COMPARISONS
10 Year Average (1964 - 1973 incl.) vs. 1974

	HARDWOOD (except pulpwood)	SOFTWOOD (except pulpwood)	PULPWOOD (All Species)
TOTAL MAINE TIMBER CUT			
1974 Timber Cut	219,491,000 Bd. Ft.	638,016,000 Bd. Ft.	3,38[illegible],355 Cords
Ten Year Average	198,664,000 Bd. Ft.	510,566,000 Bd. Ft.	2,727,611 Cords
Change	Up 10.5%	Up 24.9%	Up 24.1%
MAINE MILL USE OF MAINE CUT TIMBER			
1974 Timber Cut	170,107,000 Bd. Ft.	362,909,000 Bd. Ft.	---
Ten Year Average	149,828,000 Bd. Ft.	271,165,000 Bd. Ft.	---
Change	Up 13.5%	Up 33.8%	---
EXPORTS TO OTHER STATES AND CANADA WITHOUT MAINE MILLING			
1974 Timber Cut	49,384,000 Bd. Ft.	275,107,000 Bd. Ft.	---
Ten Year Average	48,836,000 Bd. Ft.	239,401,000 Bd. Ft.	---
Change	Up 1.1%	Up 14.9%	---
PULP CHIPS FROM SLABS AND EDGINGS OF MAINE SAWMILLS			
1974	---	---	330,560 Cords
Ten Year Average	---	---	21[illegible],366 Cords
Change	---	---	Up 58.5%

(OVER)

MAINE MILL PRODUCTION

(Does not include pulpwood, export logs, or export boltwood)

HARDWOODS- (Millions of board feet of logs and bolts)

	White Birch	Hard Maple	Yellow Birch	Beech	Oak	Other Hdwds.	Total
1964	50	43	28	6	9	11	147
1965	45	45	26	8	9	12	145
1966	50	49	24	8	10	12	153
1967	50	52	25	9	11	13	160
1968	43	16	23	9	9	13	143
1969	45	48	25	10	9	13	151
1970	46	47	18	9	9	14	145
1971	41	42	20	9	8	13	133
1972	45	48	23	10	10	16	152
1973	49	56	23	10	11	21	170
1974	51	50	23	12	14	8	158

SOFTWOODS - (Millions of board feet of logs, bolts, poles, posts)

	White Pine	Hemlock	Spruce-Fir	Cedar	Other Softwoods	Total
1964	128	32	48	22	3	233
1965	125	26	56	22	3	232
1966	123	22	60	26	3	234
1967	122	22	59	26	3	232
1968	123	22	74	24	4	247
1969	137	24	100	26	3	290
1970	141	19	84	30	3	277
1971	131	20	108	29	5	293
1972	138	28	119	24	5	314
1973	158	30	129	25	9	351
1974	163	36	118	36	10	363

MAINE WHITE PINE MILL PRODUCTION (Millions of board feet of logs and bolts)

	8 Southern Counties 1/*	8 Northern Counties 2/*
1964	54	74
1965	56	69
1966	55	68
1967	52	70
1968	51	72
1969	55	82
1970	60	81
1971	45	86
1972	50	88
1973	70	88
1974	72	91

1/ Androscoggin, Cumberland, Kennebec, Knox, Lincoln, Sagadahoc, Waldo and York.

2/ Aroostook, Franklin, Hancock, Oxford, Penobscot, Piscataquis, Somerset and Washington.

* County group from which White Pine timber was severed from the stump.

ROM 4/7/75 (500) 4/23/75 (100)

TOTAL HARDWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1974

(Does not include pulpwood)

COUNTY	WHITE ASH	ASPEN (POPPLE)	BASSWOOD	BEECH	WHITE BIRCH	YELLOW BIRCH	HARD MAPLE	OAK	ALL OTHERS	TOTAL HARDWOODS	(Includes Exports)
Androscoggin	261,000	181,000	60,000	344,000	1,175,000	65,000	824,000	1,107,000	493,000	4,493,000	(Andros.)
Aroostook	1,897,000	2,202,000	157,000	2,711,000	8,615,000	5,077,000	21,131,000	5,000	350,000	41,545,000	(Aroos.)
Cumberland	12,000	13,000	2,000	192,000	1,227,000	29,000	131,000	1,525,000	178,000	3,309,000	(Cumb.)
Franklin	1,919,000	810,000	179,000	1,511,000	8,775,000	6,412,000	6,419,000	2,565,000	1,240,000	29,890,000	(Frank.)
Hancock	111,000	3,000	3,000	60,000	1,809,000	132,000	410,000	290,000	109,000	2,996,000	(Hanc.)
Kennebec	271,000	105,000	61,000	283,000	1,730,000	809,000	1,117,000	1,171,000	558,000	6,223,000	(Kenn.)
Knox	220,000	16,000	17,000	111,000	889,000	42,000	408,000	658,000	164,000	2,586,000	(Knox)
Lincoln	24,000	45,000	21,000	56,000	621,000	42,000	217,000	316,000	92,000	1,436,000	(Linc.)
Oxford	1,191,000	789,000	97,000	3,277,000	9,061,000	5,707,000	5,892,000	5,189,000	2,696,000	31,899,000	(Oxf.)
Penobscot	2,030,000	189,000	118,000	1,921,000	6,051,000	3,211,000	8,506,000	225,000	897,000	23,148,000	(Penob.)
Piscataquis	576,000	489,000	21,000	1,931,000	5,394,000	3,358,000	11,730,000	439,000	585,000	24,123,000	(Pisc.)
Sagadahoc	4,000	--	--	106,000	139,000	27,000	27,000	75,000	26,000	414,000	(Saga.)
Somerset	1,557,000	378,000	77,000	959,000	8,475,000	4,657,000	14,542,000	895,000	808,000	32,318,000	(Some.)
Waldo	128,000	59,000	17,000	63,000	1,531,000	88,000	469,000	812,000	147,000	3,334,000	(Waldo)
Washington	701,000	270,000	20,000	934,000	2,556,000	601,000	2,361,000	53,000	385,000	8,081,000	(Wash.)
York	5,000	2,000	2,000	73,000	114,000	2,000	104,000	368,000	50,000	1,021,000	(York)
TOTAL CUT	10,727,000	5,581,000	855,000	15,367,000	58,302,000	30,460,000	74,318,000	15,693,000	8,788,000	219,491,000	
PERCENT OF TOTAL	4.9%	2.5%	0.4%	6.6%	26.7%	13.9%	33.9%	7.1%	4.0%	100%	
					HARDWOOD EXPORTS*						
Androscoggin	--	--	--	--	--	--	--	55,000	--	55,000	(Andro.)
Aroostook	906,000	730,000	55,000	1,680,000	2,151,000	2,276,000	12,954,000	--	8,000	20,760,000	(Aroos.)
Cumberland	--	--	--	--	--	--	--	157,000	--	157,000	(Cumb.)
Franklin	1,109,000	146,000	29,000	401,000	709,000	1,467,000	1,493,000	815,000	204,000	6,373,000	(Frank.)
Hancock	--	--	--	--	--	--	--	--	--	--	(Hanc.)
Kennebec	--	--	--	--	--	12,000	--	5,000	--	17,000	(Kenn.)
Knox	--	--	--	--	--	--	--	--	--	--	(Knox)
Lincoln	--	--	--	--	--	--	--	--	--	--	(Linc.)
Oxford	406,000	125,000	4,000	262,000	1,525,000	1,259,000	1,156,000	112,000	281,000	5,130,000	(Oxf.)
Penobscot	175,000	--	--	--	--	116,000	76,000	22,000	--	389,000	(Penob.)
Piscataquis	79,000	--	--	67,000	358,000	575,000	1,772,000	--	--	2,851,000	(Pisc.)
Sagadahoc	--	--	--	--	--	--	--	--	--	--	(Saga.)
Somerset	376,000	93,000	24,000	228,000	2,098,000	2,020,000	6,715,000	325,000	57,000	11,936,000	(Some.)
Waldo	--	--	--	--	--	--	--	10,000	--	10,000	(Waldo)
Washington	410,000	230,000	--	37,000	250,000	--	577,000	--	74,000	1,598,000	(Wash.)
York	--	--	--	--	--	--	12,000	54,000	12,000	78,000	(York)
TOTAL EXPORTS	3,191,000	1,344,000	112,000	2,673,000	7,091,000	7,725,000	24,755,000	1,555,000	636,000	49,384,000	

*Export Volumes of Logs & Bolts

Bureau of Forestry, Augusta, Maine 4/7/75

TOTAL SOFTWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1971

(Does not include pulpwood)

COUNTY	BALSAM FIR	CEDAR	HEMLOCK	NORWAY PINE	PITCH PINE	WHITE PINE	SPRUCE	TAMARACK	TOTAL SOFTWOODS	(Include Exports)
Androscoggin	3,000	25,000	1,732,000	81,000	--	8,226,000	27,000	83,000	10,179,000	(Andro.)
Aroostook	82,302,000	30,706,000	7,015,000	1,020,000	--	16,524,000	131,007,000	3,006,000	271,870,000	(Aroos.)
Cumberland	--	--	2,135,000	174,000	--	18,342,000	51,000	--	21,102,000	(Cumb.)
Franklin	6,128,000	581,000	2,571,000	287,000	--	6,750,000	9,477,000	58,000	25,856,000	(Frank.)
Hancock	--	567,000	537,000	126,000	--	5,621,000	1,429,000	1,000	8,306,000	(Hanc.)
Kennebec	1,002,000	468,000	3,223,000	10,000	--	13,022,000	3,138,000	10,000	20,881,000	(Kenn.)
Knox	12,000	112,000	331,000	1,000	--	2,358,000	447,000	29,000	3,324,000	(Knox)
Lincoln	13,000	37,000	396,000	2,000	--	4,391,000	202,000	18,000	5,052,000	(Linc.)
Oxford	5,113,000	105,000	6,311,000	791,000	10,000	38,581,000	7,452,000	1,000	58,097,000	(Oxf.)
Penobscot	92,000	8,001,000	3,487,000	392,000	--	16,693,000	5,920,000	57,000	34,632,000	(Penob)
Piscataquis	16,152,000	2,810,000	581,000	1,000,000	--	6,586,000	28,270,000	10,000	55,118,000	(Pisc.)
Sagadahoc	10,000	8,000	367,000	3,000	2,000	787,000	33,000	--	1,210,000	(Saga.)
Somerset	20,181,000	4,355,000	4,024,000	1,696,000	--	11,415,000	24,920,000	41,000	66,632,000	(Some.)
Waldo	66,000	1,174,000	941,000	3,000	--	6,524,000	1,203,000	45,000	9,956,000	(Waldo)
Washington	25,000	4,111,000	1,432,000	1,058,000	--	11,008,000	4,986,000	6,000	22,626,000	(Wash.)
York	7,000	--	2,109,000	101,000	40,000	19,539,000	40,000	6,000	21,842,000	(York)
TOTAL CUT	131,623,000	53,436,000	37,522,000	6,747,000	52,000	186,627,000	218,611,000	3,372,000	638,016,000	
PERCENT OF TOTAL	20.6%	8.4%	5.9%	1.0%	--	29.3%	34.3%	0.5%	100%	
				SOFTWOOD EXPORTS*						
Androscoggin	--	--	--	--	--	44,000	--	--	44,000	(Andros)
Aroostook	64,373,000	11,069,000	705,000	--	--	10,479,000	79,473,000	18,000	166,114,000	(Aroos.)
Cumberland	--	--	100,000	--	--	1,110,000	--	--	1,210,000	(Cumb.)
Franklin	5,122,000	184,000	58,000	--	--	372,000	3,135,000	--	8,871,000	(Frank.)
Hancock	--	--	--	--	--	260,000	--	--	260,000	(Hanc.)
Kennebec	--	--	--	--	--	--	--	--	--	(Kenn.)
Knox	--	--	--	--	--	--	--	--	--	(Knox)
Lincoln	--	--	--	--	--	--	--	--	--	(Linc.)
Oxford	5,300,000	12,000	221,000	75,000	--	2,090,000	4,999,000	--	12,737,000	(Oxf.)
Penobscot	--	--	--	--	--	500,000	500,000	--	1,000,000	(Penob.)
Piscataquis	14,013,000	262,000	319,000	--	--	4,120,000	21,291,000	--	40,033,000	(Pisc.)
Sagadahoc	--	--	--	--	--	--	--	--	--	(Saga.)
Somerset	10,911,000	1,552,000	173,000	6,000	--	3,168,000	17,070,000	--	37,909,000	(Some.)
Waldo	--	--	--	--	--	--	--	--	--	(Waldo)
Washington	25,000	4,000,000	--	--	--	550,000	1,500,000	--	6,075,000	(Wash.)
York	--	--	28,000	--	--	834,000	--	--	862,000	(York)
TOTAL EXPORTS	101,500,000	17,079,000	1,631,000	81,000	--	23,527,000	127,968,000	18,000	373,197,000	

*Export Volumes of Logs, Bolts, Posts, and Poles

Bureau of Forestry, Augusta, Maine 1/7/75

PULPWOOD PRODUCTION IN MAINE INCLUDING EXPORTS - 1974
(In Standard Cords)

COUNTY	HARDWOOD	ASPEN	SPRUCE-FIR	HEMLOCK	PINE	TAMARACK	TOTALS	
Androscoggin	21,747	1,631	6,795	8,326	11,690	196	50,388	(Andro.)
Aroostook	93,757	40,131	509,278	29,049	2,855	3,528	678,598	(Aroos.)
Cumberland	19,200	884	3,530	2,873	18,134	23	44,644	(Cumb.)
Franklin	91,405	14,377	34,634	5,830	5,481	184	151,911	(Frank.)
Hancock	19,404	1,107	48,153	10,650	5,695	258	85,267	(Hanc.)
Kennebec	24,872	2,990	4,099	7,851	19,378	478	60,568	(Kenn.)
Knox	10,469	319	9,876	4,434	9,083	153	34,334	(Knox)
Lincoln	16,490	680	5,113	5,703	13,838	240	42,364	(Linc.)
Oxford	139,270	13,051	45,992	15,033	14,291	294	227,934	(Oxf.)
Penobscot	111,373	21,689	173,978	76,533	10,440	3,583	397,596	(Penob.)
Piscataquis	92,812	9,195	431,104	20,558	2,836	645	557,150	(Pisc.)
Sagadahoc	7,055	185	3,465	3,535	7,592	78	21,910	(Saga.)
Somerset	104,658	12,770	371,740	15,663	7,023	599	512,453	(Some.)
Waldo	20,565	3,125	17,148	5,798	12,176	465	59,267	(Waldo)
Washington	148,129	21,292	223,921	33,743	8,037	1,003	436,125	(Wash.)
York	11,923	119	467	470	10,867	--	23,846	(York)
TOTALS	933,119	143,551	1,890,193	246,019	159,416	11,727	3,384,355	

MILL RESIDUES - 336,560 cords (255,142 softwood; 81,418 hardwood) were obtained from Maine sawmills, bolter mills, and veneer plants for manufacture into pulp chips. - - This volume is NOT included in County figures above.

BUREAU OF FORESTRY
1/7/75

"G-2"

DEPARTMENT OF CONSERVATION

BUREAU OF FORESTRY

Augusta, Maine

MAINE TIMBER CUT REPORT FOR 1975

In accordance with Maine Revised Statutes Annotated, Title 12, Section 520 the following is a summary of the annual timber cut. Basic data was obtained from Confidential Report of Timber Processed reports submitted by 360 primary wood users in the State. Questions concerning this report and requests for additional copies should be directed to: George H. Bourassa, Utilization Forester, Maine Forest Service, State Office Building, Augusta, Maine 04333.

TIMBER CUT COMPARISON: 1975 vs 1974

	1975	1974	Volume Change	Perce Chang
TOTAL TIMBER CUT (cords)	4,023,820	5,099,369	(1,075,549)	- 2
Hardwood Timber (bd ft) Excluding Pulpwood	150,955,000	219,491,000	(68,536,000)	- 3
Softwood Timber (bd ft) Excluding Pulpwood	615,025,000	638,016,000	(22,991,000)	-
Pulpwood (cords)	2,491,860	3,384,355	(892,495)	- 2

Of the total 1975 volume decrease, 1,075,549 cords, the hardwood timber cut accounted for 137,072 cords (13%), the softwood timber cut accounted for 45,982 cords (4%) and the pulpwo cut accounted for 892,495 cords (83%).

	1975	1974	Volume Change	Perce Chang
DOMESTIC USE				
Hardwood Timber (bd ft)	109,912,000	170,107,000	(60,195,000)	- 3
Softwood Timber (bd ft)	344,536,000	362,909,000	(18,373,000)	-
Total	454,448,000	533,016,000	(78,568,000)	- 1
EXPORTS				
Hardwood Timber (bd ft)	41,043,000	49,384,000	(8,341,000)	- 1
Softwood Timber (bd ft)	270,489,000	275,107,000	(4,618,000)	-
Total	311,532,000	324,491,000	(12,959,000)	-
Sawmill Residues (cords)	374,905	336,560	38,345	+ 1

TIMBER CUT COMPARISON: 1975 vs 10 YEAR AVERAGE

	1975	10 Year Average	Volume Change	Perce Chang
TOTAL CUT (cords)	4,023,820	4,296,501	(272,681)	-
Hardwood Timber Cut (bd ft)	150,955,000	201,070,000	(50,115,000)	- 2
Softwood Timber Cut (bd ft)	615,025,000	526,384,000	88,641,000	+ 1
Pulpwood Cut (cords)	2,491,860	2,841,593	(349,733)	- 1
Domestic Use - Maine Timber (bd ft)				
Hardwood Timber	109,912,000	152,095,000	(42,183,000)	- 2
Softwood Timber	344,536,000	282,074,000	62,462,000	+ 2
Total Timber	454,448,000	434,169,000	20,279,000	+
Exports (bd ft)				
Hardwood Timber	41,043,000	48,975,000	(7,932,000)	- 1
Softwood Timber	270,489,000	244,310,000	26,179,000	+ 1
Total Timber	311,532,000	293,285,000	18,247,000	+
Sawmill Residues (cords)	374,905	235,240		

MAINE MILL PRODUCTION

(Does not include pulpwood, export logs, or export boltwood)

HARDWOODS - (Millions of board feet of logs and bolts)

	White Birch	Hard Maple	Yellow Birch	Beech	Oak	Other Hdwds.	Total
1963	45	43	26	8	9	12	145
1964	50	49	24	8	10	12	153
1967	50	52	25	9	11	13	160
1968	43	46	23	9	9	13	143
1969	45	48	25	10	9	14	151
1970	46	47	18	9	9	16	145
1971	41	42	20	9	8	13	133
1972	45	48	23	10	10	16	152
1973	49	56	23	10	11	21	170
1974	51	50	23	12	14	20	170
1975	35	32	10	9	11	13	110

SOFTWOODS - (Millions of board feet of logs, bolts, poles, posts)

	White Pine	Hemlock	Spruce-Fir	Cedar	Other Softwoods	Total
1965	125	26	56	22	3	232
1966	123	22	60	26	3	234
1967	122	22	59	26	3	232
1968	123	22	74	24	4	247
1969	137	24	100	26	3	290
1970	141	19	84	30	3	277
1971	131	20	108	29	5	293
1972	138	28	119	24	5	314
1973	158	30	129	25	9	351
1974	163	36	118	36	10	363
1975	134	41	138	25	7	345

MAINE WHITE PINE MILL PRODUCTION (Millions of board feet of logs and bolts)

	8 Southern Counties 1/*	8 Northern Counties 2/*
1965	56	69
1966	55	68
1967	52	70
1968	51	72
1969	55	82
1970	60	81
1971	45	86
1972	50	88
1973	70	88
1974	72	91
1975	54	81

1/ Androscoggin, Cumberland, Kennebec, Knox, Lincoln, Sagadahoc, Waldo and York.

2/ Aroostook, Franklin, Hancock, Oxford, Penobscot, Piscataquis, Somerset and Washington.

* County group from which White Pine timber was severed from the stump.

BOF 4/1/76 (500) 5/10/76 (100) (50 copies 9/14/76)

TOTAL TIMBER CUT BY COUNTY: 1975 vs 1974

COUNTY	1975 TIMBER CUT (Cords)	1975 PERCENT OF TOTAL CUT	1975 RANK	1974 TIMBER CUT (Cords)	1974 PERCENT OF TOTAL CUT	1974 RANK
Androscoggin	58,967	1.5	13	79,652	1.6	12
Aroostook	861,306	21.4	1	1,305,428	25.6	1
Cumberland	84,871	2.1	9	93,646	1.8	10
Franklin	207,697	5.2	7	263,403	5.2	7
Hancock	96,310	2.4	8	107,871	2.1	9
Kennebec	77,861	1.9	10	114,792	2.3	8
Knox	35,373	0.9	15	46,106	0.9	15
Lincoln	40,044	1.0	14	55,340	1.0	14
Oxford	371,273	9.2	6	413,926	8.1	6
Penobscot	439,106	10.9	4	513,156	10.1	4
Piscataquis	720,198	17.9	2	716,832	14.0	2
Sagadahoc	18,187	0.5	16	25,158	0.5	16
Somerset	456,162	11.3	3	710,413	13.9	3
Waldo	61,741	1.5	11	85,847	1.7	11
Washington	433,626	10.8	5	498,265	9.8	5
York	61,098	1.5	12	69,534	1.4	13
TOTAL	4,023,820	100%		5,099,369	100%	

TOTAL HARDWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1975

(Does not include pulpwood)

COUNTY	WHITE ASH	ASPEN (POPPLE)	BASSWOOD	BEECH	WHITE BIRCH	YELLOW BIRCH	HARD MAPLE	OAK	ALL OTHERS	TOTAL HARDWOODS	(Includes Exports)
Androscoggin	212,000	58,000	15,000	798,000	413,000	62,000	571,000	1,458,000	321,000	3,908,000	(Andros.)
Aroostook	653,000	659,000	18,000	2,756,000	4,876,000	1,825,000	10,927,000	750,000	1,705,000	24,169,000	(Aroos.)
Cumberland	8,000	137,000	5,000	353,000	516,000	48,000	369,000	1,437,000	118,000	2,991,000	(Cumb.)
Franklin	821,000	504,000	44,000	1,418,000	6,787,000	4,741,000	4,972,000	1,152,000	377,000	20,816,000	(Frank.)
Hancock	87,000	15,000	12,000	13,000	1,297,000	66,000	151,000	299,000	--	1,940,000	(Hanc.)
Kennebec	290,000	61,000	13,000	56,000	1,182,000	10,000	624,000	776,000	269,000	3,281,000	(Kenn.)
Knox	78,000	14,000	--	64,000	299,000	10,000	138,000	375,000	312,000	1,290,000	(Knox)
Lincoln	9,000	6,000	2,000	28,000	204,000	34,000	18,000	410,000	119,000	830,000	(Linc.)
Oxford	1,032,000	480,000	62,000	2,534,000	5,026,000	4,181,000	4,898,000	3,216,000	1,441,000	23,470,000	(Oxf.)
Penobscot	1,477,000	70,000	138,000	1,228,000	4,748,000	1,324,000	5,877,000	248,000	636,000	15,746,000	(Penob.)
Piscataquis	655,000	155,000	31,000	1,088,000	5,960,000	1,997,000	10,863,000	15,000	728,000	21,492,000	(Pisc.)
Sagadahoc	16,000	--	--	11,000	153,000	2,000	8,000	158,000	2,000	350,000	(Saga.)
Somerset	874,000	407,000	70,000	568,000	7,946,000	2,305,000	8,373,000	436,000	404,000	21,383,000	(Somer.)
Waldo	124,000	61,000	1,000	17,000	806,000	21,000	250,000	289,000	390,000	1,959,000	(Waldo)
Washington	631,000	200,000	--	862,000	1,000,000	414,000	1,354,000	38,000	210,000	4,709,000	(Wash.)
York	87,000	102,000	45,000	197,000	197,000	88,000	664,000	848,000	393,000	2,621,000	(York)
TOTAL CUT	7,054,000	2,929,000	456,000	11,991,000	42,010,000	17,128,000	50,057,000	11,905,000	7,425,000	150,955,000	
PERCENT OF TOTAL	4.7%	1.9%	0.3%	8.0%	27.8%	11.3%	33.2%	7.9%	4.9%	100%	
					HARDWOOD EXPORTS*						
Androscoggin	47,000	--	--	--	--	50,000	--	672,000	--	769,000	(Andros.)
Aroostook	2,000	322,000	--	1,518,000	1,197,000	881,000	6,223,000	--	1,308,000	11,451,000	(Aroos.)
Cumberland	--	--	--	--	--	--	--	92,000	--	92,000	(Cumb.)
Franklin	256,000	170,000	--	239,000	1,291,000	2,483,000	1,090,000	20,000	113,000	5,662,000	(Frank.)
Hancock	--	15,000	--	--	--	20,000	100,000	50,000	--	185,000	(Hanc.)
Kennebec	9,000	4,000	--	--	--	--	--	68,000	--	81,000	(Kenn.)
Knox	--	--	--	--	--	--	--	--	--	--	(Knox)
Lincoln	--	5,000	--	--	--	--	--	17,000	--	22,000	(Linc.)
Oxford	373,000	100,000	--	239,000	1,306,000	1,536,000	1,161,000	6,000	674,000	5,395,000	(Oxf.)
Penobscot	237,000	20,000	75,000	5,000	23,000	201,000	182,000	20,000	--	763,000	(Penob.)
Piscataquis	27,000	110,000	30,000	48,000	961,000	755,000	4,186,000	3,000	9,000	6,129,000	(Pisc.)
Sagadahoc	16,000	--	--	--	--	--	--	71,000	--	87,000	(Saga.)
Somerset	135,000	82,000	20,000	104,000	2,126,000	1,035,000	5,007,000	94,000	51,000	8,654,000	(Somer.)
Waldo	--	--	--	--	--	--	--	17,000	--	17,000	(Waldo)
Washington	329,000	200,000	--	501,000	200,000	9,000	493,000	--	--	1,732,000	(Wash.)
York	4,000	--	--	--	--	--	--	--	--	4,000	(York)
TOTAL EXPORTS	1,435,000	1,028,000	125,000	2,654,000	7,104,000	6,970,000	18,442,000	1,130,000	2,155,000	41,043,000	

*Export Volumes of Logs & Bolts

Bureau of Forestry, Augusta, Maine 4/1/76

TOTAL SOFTWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1975
(Does not include pulpwood)

COUNTY	BALSAM FIR	CEDAR	HEMLOCK	NORWAY PINE	PITCH PINE	WHITE PINE	SPRUCE	TAMARACK	TOTAL SOFTWOODS	(Includes Exports)
Androscoggin	5,000	11,000	1,216,000	31,000	--	7,430,000	729,000	--	9,422,000	(Andros.)
Aroostook	73,547,000	22,106,000	7,379,000	16,000	--	10,384,000	107,039,000	1,457,000	221,928,000	(Aroos.)
Cumberland	50,000	--	3,540,000	294,000	230,000	14,698,000	135,000	--	18,947,000	(Cumb.)
Franklin	6,969,000	619,000	1,851,000	16,000	--	3,738,000	4,831,000	16,000	18,040,000	(Frank.)
Hancock	1,710,000	310,000	6,798,000	79,000	--	4,167,000	5,295,000	4,000	18,363,000	(Hanc.)
Kennebec	12,000	185,000	3,131,000	7,000	--	6,957,000	140,000	4,000	10,436,000	(Kenn.)
Knox	24,000	91,000	352,000	--	--	2,771,000	640,000	9,000	3,887,000	(Knox)
Lincoln	--	11,000	169,000	2,000	--	2,759,000	88,000	4,000	3,033,000	(Linc.)
Oxford	7,702,000	114,000	4,799,000	381,000	--	33,654,000	9,370,000	17,000	56,037,000	(Oxf.)
Penobscot	1,066,000	6,687,000	4,491,000	2,242,000	--	22,478,000	10,079,000	25,000	47,068,000	(Penob.)
Piscataquis	36,036,000	2,269,000	323,000	47,000	--	11,084,000	62,966,000	2,000	112,727,000	(Pisca.)
Sagadahoc	--	14,000	205,000	1,000	--	470,000	32,000	--	722,000	(Saga.)
Somerset	10,879,000	2,486,000	1,106,000	57,000	--	9,875,000	16,778,000	21,000	41,202,000	(Some.)
Waldo	40,000	1,076,000	554,000	12,000	--	5,325,000	594,000	36,000	7,637,000	(Waldo)
Washington	3,334,000	819,000	5,172,000	142,000	--	10,041,000	9,672,000	10,000	29,190,000	(Wash.)
York	2,000	1,000	1,108,000	257,000	1,004,000	13,918,000	89,000	7,000	16,386,000	(York)
TOTAL CUT	141,376,000	36,799,000	42,194,000	3,584,000	1,234,000	159,749,000	228,477,000	1,612,000	615,025,000	
PERCENT OF TOTAL	23.0%	6.0%	6.8%	0.6%	0.2%	26.0%	37.1%	0.3%	100%	
				SOFTWOOD EXPORTS*						
Androscoggin	--	--	--	--	--	21,000	--	--	21,000	(Andros.)
Aroostook	47,218,000	9,357,000	634,000	--	--	6,714,000	64,814,000	67,000	128,804,000	(Aroos.)
Cumberland	--	--	--	--	--	66,000	--	--	66,000	(Cumb.)
Franklin	5,587,000	104,000	141,000	--	--	78,000	2,231,000	--	8,141,000	(Frank.)
Hancock	--	--	--	--	--	180,000	8,000	--	188,000	(Hanc.)
Kennebec	--	--	--	--	--	201,000	--	--	201,000	(Kenn.)
Knox	--	--	--	--	--	--	--	--	--	(Knox)
Lincoln	--	--	--	--	--	--	--	--	--	(Linc.)
Oxford	7,551,000	63,000	272,000	147,000	--	1,009,000	7,416,000	--	16,458,000	(Oxf.)
Penobscot	83,000	--	--	--	--	3,247,000	238,000	--	3,568,000	(Penob.)
Piscataquis	29,036,000	1,007,000	--	47,000	--	9,213,000	43,012,000	--	82,335,000	(Pisca.)
Sagadahoc	--	--	--	--	--	--	--	--	--	(Saga.)
Somerset	9,796,000	532,000	59,000	52,000	--	3,008,000	14,954,000	18,000	28,419,000	(Some.)
Waldo	--	--	--	--	--	--	--	--	--	(Waldo)
Washington	20,000	500,000	--	--	--	1,353,000	65,000	--	1,938,000	(Wash.)
York	--	--	--	--	--	350,000	--	--	350,000	(York)
TOTAL EXPORTS	99,311,000	11,563,000	1,106,000	248,000	--	25,440,000	132,738,000	85,000	270,489,000	

*Export Volumes of Logs & Bolts

Bureau of Forestry, Augusta, Maine 4/1/76

PULPWOOD PRODUCTION IN MAINE INCLUDING EXPORTS - 1975
(In Standard Cords)

COUNTY	HARDWOOD	ASPEN	SPRUCE-FIR	HEMLOCK	PINE	TAMARACK	TOTALS	
Androscoggin	12,051	909	3,247	3,643	12,312	145	32,307	(Andros.)
Aroostook	54,104	15,386	289,290	9,856	114	362	369,112	(Aroos.)
Cumberland	16,431	962	2,740	2,303	18,524	35	40,995	(Cumb.)
Franklin	72,913	7,339	39,810	5,746	4,002	175	129,985	(Frank.)
Hancock	19,827	476	29,288	2,742	3,269	102	55,704	(Hanc.)
Kennebec	20,559	2,237	5,235	7,126	14,971	299	50,427	(Kenn.)
Knox	7,130	37	7,407	2,769	7,544	132	25,019	(Knox)
Lincoln	11,235	97	4,485	4,335	11,959	207	32,318	(Linc.)
Oxford	126,591	6,420	45,595	14,226	18,853	574	212,259	(Oxf.)
Penobscot	90.084	7,592	152,366	53,257	8,703	1,476	313,478	(Penob.)
Piscataquis	78,938	2,278	360,486	7,292	2,359	407	451,760	(Pisca.)
Sagadahoc	4,322	51	2,944	1,487	7,176	63	16,043	(Saga.)
Somerset	47,509	4,017	266,110	7,431	5,644	281	330,992	(Some.)
Waldo	14,974	1,062	11,346	3,948	11,024	195	42,549	(Waldo)
Washington	105,706	17,322	196,474	34,539	10,928	859	365,828	(Wash.)
York	4,852	--	512	312	17,358	50	23,084	(York)
TOTALS	687,226	66,185	1,417,335	161,012	154,740	5,362	2,491,860	

MILL RESIDUES - 374,905 cords (292,360 softwood; 82,545 hardwood) were obtained from Maine sawmills, bolter mills, and veneer plants for manufacture into pulp chips. -- This volume is NOT included in County figures above.

BUREAU OF FORESTRY
4/1/76

"G-3"
DEPARTMENT OF CONSERVATION

BUREAU OF FORESTRY

Augusta, Maine

MAINE TIMBER CUT REPORT FOR 1976

In accordance with Maine Revised Statutes Annotated, Title 12, Section 520 the following is a summary of the annual timber cut. Basic data was obtained from Confidential Report of Timber Processed reports submitted by 357 primary wood users in the State. Questions concerning this report and requests for additional copies should be directed to: George H. Bourassa, Utilization Forester, Maine Forest Service, State Office Building, Augusta, Maine 04333.

TIMBER CUT COMPARISON: 1976 vs 1975

	1976	1975	Volume Change	Percent Change
TOTAL TIMBER CUT (cords)	4,763,156	4,023,820	739,336	+ 18
Hardwood Timber (bd ft) Excluding Pulpwood	164,028,000	150,955,000	13,073,000	+ 9
Softwood Timber (bd ft) Excluding Pulpwood	816,302,000	615,025,000	201,277,000	+ 33
Pulpwood (cords)	2,802,496	2,491,860	310,636	+ 12

Of the total 1976 volume increase, 739,336 cords, the hardwood timber cut accounted for 26,146 cords (4%), the softwood timber cut accounted for 402,554 cords (54%) and the pulpwood cut accounted for 310,636 cords (42%).

DOMESTIC USE	1976	1975	Volume Change	Percent Change
Hardwood Timber (bd ft)	121,163,000	109,912,000	11,251,000	+ 10
Softwood Timber (bd ft)	492,235,000	344,536,000	147,699,000	+ 43
Total	613,398,000	454,448,000	158,950,000	+ 35
EXPORTS				
Hardwood Timber (bd ft)	42,865,000	41,043,000	1,822,000	+ 4
Softwood Timber (bd ft)	324,067,000	270,489,000	53,578,000	+ 20
Total	366,932,000	311,532,000	55,400,000	+ 18
Sawmill Residues (cords)	484,108	374,905	109,203	+ 29

TIMBER CUT COMPARISON: 1976 vs 10 YEAR AVERAGE

	1976	10 Year Average	Volume Change	Percent Change
TOTAL CUT (cords)	4,763,156	4,334,416	428,740	+ 10
Hardwood Timber Cut (bd ft)	164,028,000	197,605,000	(33,577,000)	- 17
Softwood Timber Cut (bd ft)	816,302,000	541,850,000	274,452,000	+ 51
Pulpwood Cut (cords)	2,802,496	2,855,504	(53,008)	- 2
Domestic Use - Maine Timber (bd ft)				
Hardwood Timber	121,163,000	148,488,000	(27,325,000)	- 18
Softwood Timber	492,235,000	293,416,000	198,819,000	+ 68
Total Timber	613,398,000	441,904,000	171,494,000	+ 39
Exports (bd ft)				
Hardwood Timber	42,865,000	49,117,000	(6,252,000	- 13
Softwood Timber	324,067,000	248,434,000	75,633,000	+ 30
Total Timber	366,932,000	297,551,000	69,381,000	+ 23
Sawmill Residues (cords)	484,108	260,070	224,038	+ 86

MAINE MILL PRODUCTION

(Does not include pulpwood, export logs, or export boltwood)

HARDWOODS - (Millions of board feet of logs and bolts)

	White Birch	Hard Maple	Yellow Birch	Beech	Oak	Other Hdwds.	Total
1966	50	49	24	8	10	12	153
1967	50	52	25	9	11	13	160
1968	43	46	23	9	9	13	143
1969	45	48	25	10	9	14	151
1970	46	47	18	9	9	16	145
1971	41	42	20	9	8	13	133
1972	45	48	23	10	10	16	152
1973	49	56	23	10	11	21	170
1974	51	50	23	12	14	20	170
1975	35	32	10	9	11	13	110
1976	33	38	12	9	12	17	121

SOFTWOODS - (Millions of board feet of logs, bolts, poles, posts)

	White Pine	Hemlock	Spruce-Fir	Cedar	Other Softwoods	Total
1966	123	22	60	26	3	234
1967	122	22	59	26	3	232
1968	123	22	74	24	4	247
1969	137	24	100	26	3	290
1970	141	19	84	30	3	277
1971	131	20	108	29	5	293
1972	138	28	119	24	5	314
1973	158	30	129	25	9	351
1974	163	36	118	36	10	363
1975	134	41	138	25	7	345
1976	168	48	244	27	5	492

MAINE WHITE PINE MILL PRODUCTION (Millions of board feet of logs and bolts)

	8 Southern Counties 1/*	8 Northern Counties 2/*
1966	55	68
1967	52	70
1968	51	72
1969	55	82
1970	60	81
1971	45	86
1972	50	88
1973	70	88
1974	72	91
1975	54	81
1976	64	104

1/ Androscoggin, Cumberland, Kennebec, Knox, Lincoln, Sagadahoc, Waldo and York.

2/ Aroostook, Franklin, Hancock, Oxford, Penobscot, Piscataquis, Somerset and Washington.

* County group from which White Pine timber was severed from the stump.

TOTAL TIMBER CUT BY COUNTY: 1976 vs 1975

COUNTY	1976 TIMBER CUT (Cords)	1976 PERCENT OF TOTAL CUT	1976 RANK	1975 TIMBER CUT (Cords)	1975 PERCENT OF TOTAL CUT	1975 RANK
Androscoggin	76,874	1.6	12	58,967	1.5	13
Aroostook	1,189,355	25.0	1	861,306	21.4	1
Cumberland	96,698	2.0	8	84,871	2.1	9
Franklin	244,325	5.1	7	207,697	5.2	7
Hancock	87,435	1.9	10	96,310	2.4	8
Kennebec	96,450	2.0	9	77,861	1.9	10
Knox	46,982	1.0	15	35,373	0.9	15
Lincoln	52,829	1.1	14	40,044	1.0	14
Oxford	475,786	10.0	5	371,273	9.2	6
Penobscot	426,768	9.0	6	439,106	10.9	4
Piscataquis	748,694	15.7	2	720,198	17.9	2
Sagadahoc	25,992	0.6	16	18,187	0.5	16
Somerset	507,080	10.6	4	456,162	11.3	3
Waldo	77,537	1.6	11	61,741	1.5	11
Washington	546,504	11.5	3	433,626	10.8	5
York	63,847	1.3	13	61,098	1.5	12
TOTAL	4,763,156	100%		4,023,820	100%	

TOTAL HARDWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1976
(Does not include pulpwood)

COUNTY	WHITE ASH	ASPEN (POPPLE)	SOFT MAPLE	BEECH	WHITE BIRCH	YELLOW BIRCH	HARD MAPLE	OAK	ALL OTHERS	TOTAL HARDWOODS	(Includes Exports)
Androscoggin	258,000	77,000	625,000	288,000	645,000	237,000	438,000	1,332,000	3,000	3,903,000	(Andros.)
Aroostook	408,000	2,377,000	1,483,000	1,979,000	3,707,000	2,042,000	10,812,000	314,000	79,000	23,201,000	(Aroos.)
Cumberland	38,000	30,000	429,000	360,000	864,000	618,000	287,000	2,057,000	3,000	4,686,000	(Cumb.)
Franklin	867,000	885,000	476,000	1,246,000	7,749,000	5,355,000	8,233,000	1,240,000	177,000	26,228,000	(Frank.)
Hancock	143,000	103,000	38,000	127,000	1,487,000	103,000	236,000	170,000	-	2,407,000	(Hanc.)
Kennebec	221,000	47,000	256,000	46,000	1,725,000	57,000	475,000	1,089,000	17,000	3,933,000	(Kenn.)
Knox	140,000	81,000	235,000	159,000	315,000	25,000	313,000	500,000	36,000	1,804,000	(Knox)
Lincoln	20,000	40,000	189,000	66,000	593,000	44,000	73,000	442,000	9,000	1,476,000	(Linc.)
Oxford	860,000	370,000	2,153,000	2,791,000	7,626,000	3,730,000	6,239,000	4,109,000	432,000	28,310,000	(Oxf.)
Penobscot	1,329,000	192,000	415,000	1,099,000	4,750,000	1,024,000	4,742,000	452,000	159,000	14,162,000	(Penob.)
Piscataquis	661,000	107,000	1,258,000	1,392,000	4,489,000	2,484,000	10,330,000	26,000	118,000	20,865,000	(Pisc.)
Sagadahoc	-	-	2,000	-	147,000	-	-	156,000	-	305,000	(Saga.)
Somerset	1,060,000	305,000	1,943,000	945,000	7,492,000	3,927,000	6,819,000	258,000	248,000	22,997,000	(Somer.)
Waldo	157,000	75,000	109,000	35,000	1,617,000	23,000	113,000	562,000	31,000	2,722,000	(Waldo)
Washington	749,000	254,000	315,000	252,000	1,568,000	634,000	1,851,000	135,000	20,000	5,778,000	(Wash.)
York	32,000	34,000	127,000	84,000	171,000	141,000	48,000	613,000	1,000	1,251,000	(York)
TOTAL CUT	6,943,000	4,977,000	10,053,000	10,869,000	44,945,000	20,444,000	51,009,000	13,455,000	1,333,000	164,028,000	
PERCENT OF TOTAL	4.2%	3.1%	6.1%	6.6%	27.4%	12.5%	31.1%	8.2%	0.8%	100%	
					HARDWOOD EXPORTS*						
Androscoggin	-	-	-	-	72,000	50,000	-	568,000	-	690,000	(Andros.)
Aroostook	17,000	645,000	158,000	843,000	1,164,000	538,000	3,681,000	-	-	7,046,000	(Aroos.)
Cumberland	3,000	-	-	6,000	60,000	25,000	-	270,000	-	364,000	(Cumb.)
Franklin	79,000	513,000	76,000	151,000	945,000	1,952,000	933,000	44,000	-	4,693,000	(Frank.)
Hancock	-	-	-	21,000	367,000	6,000	26,000	-	-	420,000	(Hanc.)
Kennebec	7,000	-	-	4,000	553,000	1,000	5,000	42,000	-	612,000	(Kenn.)
Knox	-	-	-	-	80,000	-	-	10,000	10,000	100,000	(Knox)
Lincoln	-	-	-	4,000	250,000	1,000	6,000	-	-	261,000	(Linc.)
Oxford	117,000	22,000	370,000	334,000	2,553,000	1,522,000	1,460,000	55,000	405,000	6,838,000	(Oxf.)
Penobscot	223,000	48,000	-	326,000	1,230,000	312,000	576,000	135,000	-	2,850,000	(Penob.)
Piscataquis	143,000	38,000	56,000	287,000	1,429,000	888,000	2,508,000	-	100,000	5,449,000	(Pisc.)
Sagadahoc	-	-	-	-	57,000	-	-	-	-	57,000	(Saga.)
Somerset	159,000	167,000	1,664,000	258,000	2,218,000	2,370,000	3,435,000	63,000	109,000	10,443,000	(Somer.)
Waldo	19,000	23,000	-	-	677,000	-	-	195,000	23,000	937,000	(Waldo)
Washington	548,000	254,000	110,000	40,000	502,000	15,000	545,000	-	5,000	2,019,000	(Wash.)
York	1,000	-	2,000	1,000	4,000	-	2,000	76,000	-	86,000	(York)
TOTAL EXPORTS	1,316,000	1,710,000	2,436,000	2,275,000	12,161,000	7,680,000	13,177,000	1,458,000	652,000	42,865,000	

*Export Volumes of Logs & Bolts

Bureau of Forestry, Augusta, Maine 4/77

TOTAL SOFTWOOD TIMBER CUT IN MAINE INCLUDING EXPORTS IN BOARD FEET -- 1976

(Does not include pulpwood)

COUNTY	BALSAM FIR	CEDAR	HEMLOCK	NORWAY PINE	PITCH PINE	WHITE PINE	SPRUCE	TAMARACK	TOTAL SOFTWOODS	(Includes Exports)
Androscoggin	15,000	1,703,000	1,030,000	63,000	-	9,564,000	174,000	125,000	12,674,000	(Andros.)
Aroostook	91,203,000	25,588,000	8,776,000	-	2,000	14,688,000	145,651,000	2,020,000	287,928,000	(Aroos.)
Cumberland	19,000	-	4,002,000	333,000	6,000	13,419,000	137,000	6,000	17,922,000	(Cumb.)
Franklin	5,417,000	225,000	969,000	61,000	-	6,337,000	8,931,000	259,000	22,199,000	(Frank.)
Hancock	1,073,000	428,000	909,000	480,000	-	4,920,000	4,880,000	9,000	12,699,000	(Hanc.)
Kennebec	4,000	113,000	3,496,000	31,000	-	8,032,000	269,000	-	11,945,000	(Kenn.)
Knox	13,000	40,000	571,000	38,000	-	4,999,000	582,000	2,000	6,245,000	(Knox)
Lincoln	2,000	3,000	229,000	4,000	-	1,820,000	171,000	1,000	2,230,000	(Linc.)
Oxford	10,095,000	157,000	4,368,000	1,237,000	102,000	46,103,000	13,095,000	110,000	75,267,000	(Oxf.)
Penobscot	3,342,000	4,649,000	6,951,000	517,000	-	16,868,000	22,405,000	150,000	54,882,000	(Penob.)
Piscataquis	37,464,000	1,243,000	3,538,000	21,000	-	20,229,000	75,141,000	4,000	137,640,000	(Pisc.)
Sagadahoc	3,000	22,000	320,000	5,000	-	1,380,000	51,000	4,000	1,785,000	(Saga.)
Somerset	16,140,000	4,405,000	1,663,000	161,000	-	10,055,000	18,556,000	144,000	51,124,000	(Somer.)
Waldo	31,000	688,000	915,000	6,000	-	7,404,000	812,000	13,000	9,869,000	(Waldo)
Washington	5,090,000	1,276,000	10,835,000	92,000	-	12,832,000	60,766,000	13,000	90,904,000	(Wash.)
York	-	-	1,933,000	277,000	3,000	18,764,000	12,000	-	20,989,000	(York)
TOTAL CUT	169,911,000	40,540,000	50,505,000	3,326,000	113,000	197,414,000	351,633,000	2,860,000	816,302,000	
PERCENT OF TOTAL	20.8%	5.0%	6.2%	0.4%	0.0%	24.2%	43.1%	0.3%	100%	
				SOFTWOOD EXPORTS*						
Androscoggin	-	1,693,000	-	-	-	293,000	-	-	1,986,000	(Andros.)
Aroostook	59,699,000	9,926,000	350,000	-	-	5,275,000	76,125,000	10,000	151,385,000	(Aroos.)
Cumberland	-	-	-	-	-	598,000	-	-	598,000	(Cumb.)
Franklin	5,277,000	154,000	201,000	-	-	1,396,000	4,541,000	-	11,569,000	(Frank.)
Hancock	-	-	-	400,000	-	-	85,000	-	485,000	(Hanc.)
Kennebec	-	-	-	1,000	-	97,000	-	-	98,000	(Kenn.)
Knox	-	-	-	-	-	-	-	-	-	(Knox)
Lincoln	-	-	-	-	-	47,000	-	-	47,000	(Linc.)
Oxford	9,891,000	104,000	283,000	589,000	-	3,279,000	11,409,000	100,000	25,655,000	(Oxf.)
Penobscot	6,000	-	393,000	-	-	2,605,000	1,689,000	-	4,693,000	(Penob.)
Piscataquis	30,196,000	459,000	508,000	3,000	-	7,857,000	43,160,000	-	82,183,000	(Pisc.)
Sagadahoc	-	-	-	-	-	33,000	-	-	33,000	(Saga.)
Somerset	15,724,000	1,246,000	187,000	56,000	-	3,604,000	17,287,000	6,000	38,110,000	(Somer.)
Waldo	12,000	-	-	-	-	61,000	6,000	-	79,000	(Waldo)
Washington	200,000	500,000	250,000	-	-	3,766,000	1,762,000	-	6,478,000	(Wash.)
York	-	-	5,000	20,000	-	643,000	-	-	668,000	(York)
TOTAL EXPORTS	121,005,000	14,082,000	2,177,000	1,069,000	-	29,554,000	156,064,000	116,000	324,067,000	

*Export Volumes of Logs & Bolts

Bureau of Forestry, Augusta, Maine 4/77

PULPWOOD PRODUCTION IN MAINE INCLUDING EXPORTS - 1976
(In Standard Cords)

COUNTY	HARDWOOD	SPRUCE-FIR	HEMLOCK	PINE	TAMARACK	OTHER SOFTWOOD	TOTALS	
Androscoggin	18,024	3,570	5,896	16,026	204	-	43,720	(Andros.)
Aroostook	118,704	430,019	12,167	5,966	241	-	567,097	(Aroos.)
Cumberland	23,836	2,804	5,607	19,192	43	-	51,482	(Cumb.)
Franklin	100,511	32,888	7,844	6,007	221	-	147,471	(Frank.)
Hancock	18,593	27,386	5,717	5,459	68	-	57,223	(Hanc.)
Kennebec	25,799	7,008	10,644	20,540	409	294	64,694	(Kenn.)
Knox	9,482	7,251	4,595	9,370	186	-	30,884	(Knox)
Lincoln	15,997	5,980	6,946	16,219	275	-	45,417	(Linc.)
Oxford	162,162	60,344	20,009	25,556	561	-	268,632	(Oxf.)
Penobscot	90,761	147,100	38,639	10,093	1,394	693	288,680	(Penob.)
Piscataquis	92,746	324,446	9,927	3,087	364	1,114	431,684	(Pisc.)
Sagadahoc	5,163	3,461	2,478	10,628	82	-	21,812	(Saga.)
Somerset	66,133	263,849	12,951	14,774	331	800	358,838	(Somer.)
Waldo	16,003	17,933	5,067	12,355	294	703	52,355	(Waldo)
Washington	141,124	166,956	35,452	8,652	956	-	353,140	(Wash.)
York	8,029	556	2,304	8,469	9	-	19,367	(York)
TOTALS	913,067	1,501,551	186,243	192,393	5,638	3,604	2,802,496	

MILL RESIDUES - 484,108 cords (417,495 softwood; 66,613 hardwood) were obtained from Maine sawmills, bolter mills, and veneer plants for manufacture into pulp chips. -- This volume is NOT included in County figures above.

BUREAU OF FORESTRY 4/77

FOREST MANAGEMENT POLICY

ST. REGIS PAPER COMPANY
MAINE WOODLANDS

MAY 15, 1974

Prepared by Woodlands Staff

FOREST MANAGEMENT POLICY

ST. REGIS PAPER COMPANY
MAINE WOODLANDS

Outline and Index

I. HISTORY OF ST. REGIS IN THE STATE OF MAINE

St. Regis Paper Company entered Maine in 1946 when it began a technical assistance program at the Bucksport pulp and paper mill. This mill, completed in 1930 by the Maine Seaboard Paper Company had recently been purchased by Time, Inc. St. Regis bought out Time's interest in this mill in 1947.

Acquired by St. Regis along with the Bucksport mill were 340,000 acres of Maine woodlands scattered over a broad area of central and eastern Maine. Since 1948 a number of acquisitions and land exchanges have brought the area of the Maine Timberlands to about 764,000 acres. The largest blocks (about 73% of the total area) are in Hancock and Washington Counties--eastern Maine. The rest of the lands consist of well blocked-in tracts in Aroostook and Piscataquis Counties plus a number of smaller but reasonably accessible parcels in Penobscot County.

These managed lands are the primary source of spruce and fir used in the pulp mill at Bucksport (current usage about 108,000 cords per year) and the spruce, fir and hemlock used in the stud mill at Costigan (initial usage about 107,000 cords per year).

Other species, such as white and red pine, tamarack (eastern larch), white cedar, soft and hard maple, white and yellow birch, beech and poplar which also grow on the lands are harvested as logs or pulpwood for outside sale.

It is the policy of St. Regis to manage the Maine Timberlands on a sustained yield basis. This means that the harvest of timber is regulated in such a way that it does not exceed the rate of growth. The long-term objective is to increase the growth rate of desirable tree species by utilizing modern forest technology.

II. FOREST MANAGEMENT

A. FOREST MANAGEMENT POLICY

The principal objectives of our forest management are:

(1) To provide for the orderly harvesting of the forests to assure a sustained yield.

(2) To utilize as completely as economically possible the products therefrom.

(3) To secure prompt reforestation of non-producing lands with desirable species.

(4) To apply such silvicultural and cultural methods as are economically feasible to secure the greatest production of desirable raw material.

(5) To maintain good aesthetic qualities of the forest.

The basic and inherent philosophy of forest management is primarily concerned with the production of suitable raw materials on a sustained yield basis for the company manufacturing plants at the lowest possible cost. This should not preclude the production of some products for sale where reasonably good profits can be obtained. The returns from these items will reduce the invested capital and interest costs, thus providing lower unit costs for the principal products.

It is the official corporate position that while full utilization of our timber resources is desired, such utilization must be tempered with continuous and adequate consideration of scenic environmental and recreational values so that the interests of the public will not be unnecessarily abridged.

1. Inventory

The forest inventory completed in 1974 will be kept current by periodic revisions as necessitated by changes in land ownership, accretion,

depletion and additional inventory data.

(a) Cruises

Detailed tract cruises may be required for special projects such as harvesting units, stumpage purchases, timber and land purchases, land exchanges, timber damaged by natural causes, etc. The timber values may require cruise intensities up to 100% for special areas such as rights of way or other limited areas.

(b) Reproduction Surveys

Field examinations will be made of all areas where the stand density and species composition are questionable. This will include areas with five or more acres with a density of less than 500 trees per acre of desirable species. The field examinations will be based on the inventory of 1/250 acre circular plots at two chain intervals on strips ten chains apart. A report will be compiled for the areas examined, giving detailed information for each tract and recommendations for any future treatment needed.

(c) Allowable Cut

The annual allowable cut as projected from present inventory data will approximate 190,000 cords of major softwoods. This figure will be adjusted with the development of more exacting growth studies and more intensive silvicultural practices.

B. ACCESS

The continued expansion of the road system for harvesting and forest

protection is essential to orderly management. Road construction should be kept at least a year in advance of woods operations. It has been St. Regis' policy to permit private use of its woodlands roads; however, certain roads may be restricted to travel where it interferes with company activities or will jeopardize or damage company property.

C. PROTECTION

1. Fire

a. Fire Plans

A close liaison will be maintained with the Maine Bureau of Forestry through the exchange of fire plans and current contacts of personnel.

b. Fire Prevention and Suppression

It shall be the responsibility of all employees to exercise every precaution at all times to prevent forest fires from starting. Should a fire start, there will be no hesitation by St. Regis personnel in suppression action even though the supervision of fire suppression is under the jurisdiction of the Maine Bureau of Forestry.

2. Insects

Insect infestations are of major concern to all Maine woodlands personnel. The forestry staff and certain woods supervisory personnel will be alerted when epidemic infestations seem

imminent in the region. Periodic local checks will be made by the forestry staff for the presence, particularly of spruce budworm, balsam fir woolly aphid and Saratoga spittle bug. A close liaison will also be kept between St. Regis and the Maine Bureau of Forestry.

3. Disease

The practical methods of combating tree disease are economically limited. Sources of disease infections will be reduced by marking infected trees for removal in harvesting operations.

4. Animals

Areas that have noticeable forest damage caused by porcupines, bears, beavers, etc., will be reported to the proper authorities and appropriate action taken to minimize damage. A close liaison will be maintained with the Department of Inland Fisheries and Game.

5. Trespass

Exterior company property lines will be retraced and marked when trespass is likely to occur and parties cutting adjacent to company lands will be contacted and informed of the location of property lines. Every reasonable effort will be made to forestall trespasses.

D. SILVICULTURE

1. Intensity

Silvicultural practices will vary with the factors influencing the economic returns. The upward trend of taxation and other fixed costs will require the periodic review and intensification

of silvicultural plans in order to produce the maximum volume of suitable wood for the manufacturing plants at the lowest unit price. The present conditions justify:

(1) The prompt reforestation of non-forested lands. This will be done as rapidly as techniques and facilities can be made available.

(2) The thinning of the denser growth stands as they attain sufficient size to produce needed pulpwood or other salable products.

(3) Aerial spraying with selective herbicides where low value hardwoods or brush may be suppressing a potentially valuable softwood understory.

(4) The maintenance of a forest inventory as a working basis for silvicultural plans and the establishment of a continuous forest inventory.

2. Harvest

Harvesting of forest tree species is an integral part of forest management and a basic silvicultural tool. Good forest harvesting standards will be maintained to assure a continuous forest crop, maintain or improve the quality of forest stands and tree species, minimize soil and debris entering streams and prevent unnecessary damage to wildlife and fish habitat.

Because of the differences in forest types, stand and environmental conditions which exist throughout the forest lands in Maine, each area will be inspected prior to harvesting by the forestry staff to determine the best method to harvest each particular area to achieve our overall management goal.

3. Stand Composition

The practical control of stand composition should strive to limit hardwood species on all sites except those unsuited for coniferous growth. In general, mixed coniferous stands of major species are most desirable to achieve the greatest production of desirable raw materials for company mills.

4. Species Management

a. Major Species

The spruce, fir and hemlock stands are the predominating species. Occasionally they are intermlxed with hardwoods and to a lesser extent with minor coniferous species. Regeneration and cultural practices should favor spruce, fir and hemlock as well as encourage the intermixture of pine on sites where conditions are favorable for its growth. Pure stands of hardwood should be strictly limited to special site conditions wherever possible.

b. Minor Species

The pioneer hardwoods, tamarack and cedar, constitute the minor species and their present status is largely the result of repeated fires or uncontrolled natural regeneration. The application of all practical silvicultural methods should be considered to confine these species to sites unsuited for the major species. The harvesting or other means taken in treating these species should be directed toward reducing their distribution in the regeneration process.

5. Timber Stand Improvement

a. Brush and Herbage Control

The brush and barren problem is largely the result of repeated wild fires; therefore, fire protection is of paramount importance. The existing brush areas, particularly those occupying better sites, justify chemical treatment as rapidly as chemicals are developed that are effective for the particular species encountered. The fern and grass areas will be treated by scarifying or chemical treatment and reforested as promptly as possible. All chemicals must be approved for use by the State of Maine Bureau of Forestry and any other authorized state or federal agency to insure safe and proper use.

b. Intermediate Cuttings

(1) Thinnings or Selective Cutting

Light thinnings (removal of 40% or less of the net merchantable volume) in any ten-year period will be required along streams, lakes or roads. These thinnings should be made to improve the quality and maintain the vigor of the remaining trees and salvage materials otherwise lost through natural mortality.

(2) Marking

All trees to be removed will be designated by marking by trained forestry personnel.

c. Salvage

The salvage of windthrown, fire killed, diseased and insect infested timber will be undertaken as promptly as access can be provided in order to reduce further deterioration, fire hazards and spread of infestations of insects or diseases.

6. Reforestation

a. General

Reforestation will be kept as current as site conditions permit in order to avoid any non-productive time lag, the invasion by undesirable vegetation or site deterioration due to lack of adequate cover.

b. Natural Regeneration

Natural regeneration will be favored wherever a suitable seed source is available and site is in a condition receptive to this form of reforesting.

c. Planting

Hand planting, due to its greater capital expenditure, will be limited to small areas, to the interplanting of poorly stocked stands and to areas where site conditions prevent the reasonable assurance of restocking with desirable species by natural or artificial seeding.

(1) Density

In open area plantations, the planting density will be a minimum of 500 trees per acre. This minimum planting density will provide for a small percentage of early mortality which usually occurs before the crowns close and still leave sufficient stems to provide desirable stand characteristics and sufficient growing stock.

(2) Species

Spruce, fir and pine are the most important and adaptable species for planting.

d. Seeding

The best quality of seed obtainable will be used for seeding in direct and nursery applications. Whenever possible the seed will be selected from areas with corresponding climatic and soil conditions to assure its adaptability to the site being reforested.

(1) Aerial Seeding

Due to the more reasonable capital investment, aerial seeding will be given preference wherever artificial reforestation is required. Site conditions and size of the areas will be determining factors in the application of this method.

(2) Direct Seeding

Cyclone type hand seeders will be used for seeding small tracts, where site conditions are favorable and more extensive methods are not practical.

e. Site Preparation

Site preparation work is needed on areas where complete stand conversion is desired and on barrens or non-productive lands. The type of reforestation (seeding or planting) will dictate what site preparation technique will be needed. On portions of these areas, improved or new techniques are needed before it is economically feasible to complete the job.

Drainage work is also desirable in several areas to improve site conditions for conifers.

III. LAND ACQUISITION

The land acquisition program is to be continued and directed particularly toward the consolidation of existing units by either purchase or exchange. Emphasis will be placed on acquiring desirable intermingled and adjacent lands at values which will yield a reasonable return. Special values will be considered when they will reduce operating costs or hazards. Special effort will be made to acquire legal access to all existing woodlands.

A. APPRAISALS

An appraisal of forest lands will be made for each prospective acquisition to determine its value. Field examination will be intensified to provide a broader basis as apparent volumes or values increase.

B. PURCHASE PROCEDURE AND APPROVALS

Land purchases will be made at or below our appraised price with due consideration to special conditions which enhance their value to the company. A tentative negotiated offer will be made subject to local and New York office approvals. A detailed acquisition report will then be prepared for approval by proper officials. Upon favorable action by them and clearance from the local legal officer relative to title and method of conveyance, a check for the purchase price will be requisitioned. Upon its receipt, the purchase will be completed.

C. EXCHANGES

It is the policy of the company to refrain from selling any of its forest lands. Exchanges will be considered when they can be justified from the standpoint of gaining advantage to the company.

IV. AREA CONTROL

A. MAPPING

The total company ownership will be completely mapped using photogrammetric principles.

The basic planimetric map scale will be 1" = 20 chains to conform with the aerial photography used for mapping and photo interpretation. These can be used to develop the necessary specialty maps. Scale may be reduced or enlarged to fit the various requirements.

Consideration should be given to periodic reflights of areas where activity is high and change is rapid. This photography would be used to update timber stand type maps.

The drafting of maps should be done by a qualified forestry draftsman. This will result in a more uniform mapping system. All the originals should be maintained in the Bucksport office, the filing to be under the control of the Inventory Supervisor.

B. SURVEYING

Transit surveys will be conducted by licensed company surveyors in cases of corner replacement surveys, subdivision or in instances where controversy is likely to occur. All licensed survey work should be tied into the State of Maine survey grid.

C. CORNERS AND LINES

It will be the policy of the company to determine its boundary lines where cutting is contemplated and check lines established by others cutting on abutting lands. Surveys by others that are of doubtful accuracy will be checked by retracement surveys. Exterior ownership

lines should be renewed and painted every ten to fifteen years. Interior lines such as township or tract lines should be maintained whenever practical and painted.

IV. LAND ADMINISTRATION

A. RECORDS

1. Plat Book - The plat book record of company lands will be maintained on individual township plats. The record will be kept current and the purchase number for each tract will be entered, providing a cross reference to the deed files. The date of purchase and acreage will also be recorded.

2. Titles - When any land acquisitions are involved, a title search shall be made by St. Regis' legal counsel and any defects in title will be resolved before the transaction is closed.

3. Taxes - All timberland, development land and personal property taxes pertaining to the Maine woodlands must be reviewed before being presented for payment. The Tree Growth Tax Law is assessed on the annual listing of areas by forest timber types by towns as submitted by the landowner. This requires the maintenance of accurate inventories, up-to-date records and back-up evidence to justify the listing.

4. Depletion - Annual depletion records for inventory purposes will be handled by forestry personnel to the end that the forest inventory may be kept current.

B. CONTRACTS AND USE PERMITS

All contracts for logging, construction and special services will be standardized as to functions and approved as to legal text by company attorneys. Right of way permits, special use permits and other agreements will likewise be prepared.

The granting of contracts, permits and agreements will be made only upon the approval of the Regional Timberlands Manager or those to whom he specifically designates such authority in writing. All contracts and permits will be set up and indexed under the current system of numbered contracts. They will then be subject to review periodically or prior to expiration.

C. COOPERATION

1. Public

Cooperation with various public agencies and organizations, namely: State of Maine - Bureau of Forestry, Department of Inland Fisheries and Game, Department of Transportation, Department of Environmental Protection, Land Use Regulation Commission and Atlantic Sea Run Salmon Commission; University of Maine College of Forestry; United States Forest Service, Northeast Experiment Station; and sportsmen's groups, shall be undertaken to foster good public relations, promote proper civic functions and educational programs which contribute to the well being of our industry.

2. Private

The cooperation of neighboring owners will be continued for our mutual benefit in forest protection and other forest administration matters.

D. ACCESS

Applications for commercial use of existing company roads as well as those for public or private rights of way over company lands will be reviewed and considered on an individual case basis.

E. PUBLIC RECREATION

There are several public campgrounds on company land. These campgrounds are maintained and regulated by the Maine Bureau of Forestry. It is the policy of St. Regis Paper Company to permit recreational use of its timberlands consistent with its forestry goals.

F. EXTENSION FORESTRY

The company will cooperate with other private forest land owners as well as with officials of public educational institutions and conservation groups, both public and privately sponsored for the purpose of promoting forestry demonstrations and forest education programs.

VI. FOREST RESEARCH

It shall be the policy of the company to pursue from time to time such basic and applied research projects as the need may dictate. These may fall in the fields of insect damage research and control, fertilization, reforestation, intermediate harvesting, chemical brush control and related problems.

VII. ROAD USE POLICY

Since there will be an increasing number of vehicles transporting forest products to both the Bucksport and Costigan mills, in the interests of safety it has become necessary to close some of our roads to public use.

During the mud season, periods of forest fire danger or intensive logging operations, certain other roads may be closed temporarily and will be posted to indicate their closure. These will be opened as soon as it is advisable to do so.

VIII. ALL-TERRAIN VEHICLES

The increased use of all-terrain vehicles on St. Regis lands in Maine represents a potential fire hazard to our timberlands. Fire suppression in remote areas can be a real problem. For this reason the use of tracked vehicles, motorcycles, trail bikes, dune buggies, coots and similar vehicles on company lands will no longer be permitted.

This is not intended to curtail the use of our lands for recreational purposes by the general public. In fact, the more efficient the management of our timberland becomes, the more the visiting public can enjoy them.

IX. SNOWMOBILE POLICY

St. Regis Paper Company lands in the State of Maine are open for the use of snowmobiles subject to the following provisions:

1. Snowmobile use shall be at the user's own risk.
2. Snowmobile use shall be in accordance with all State and Federal laws.
3. Snowmobiles shall be used only on unplowed roads and trails outside of wood harvesting areas.
4. Snowmobile users must not damage any trees, large or small.
5. Snowmobile users must not damage any facilities, buildings or equipment owned by St. Regis Paper Company or by campsite lessees and others.
6. In order to insure their safety against traffic hazards, snowmobile users must not use active logging and truck roads.

7. Snowmobile users shall not operate their snowmobiles in posted areas.

8. Snowmobile users shall keep our lands free from litter and shall bring out all their trash with them and deposit it in their own trash disposal areas.

A. Issue Statement

More intensive forest management is needed on millions of acres of forest land in order to extend the supply of forest resources and improve income opportunities for Maine's citizens. The anticipated demand for forest related goods and services will increase 130% in the next four decades.

B. Perception of the Issue

Forests and forest products form the backbone of Maine's economy. Anticipated shortages in the quality and quantity of timber supply call for intensification of management practices.

According to the Timber Resources of Maine, almost 13 million acres, or 75% of Maine's commercial forest land are either understocked or overstocked. For trees of high quality and vigor, virtually all of Maine's commercial forest land is poorly stocked. These conditions exist on all ownership classes of land. Some of the complex and interrelated causes of these conditions are:

a. inadequate financial incentives to encourage management activities
b. development pressures, zoning, taxation, and land market
c. insufficient technical assistance and education, both by the Maine Forest Service and by other existing and potential providers
d. inadequate information concerning site productivity and potential markets

C. Recommendations

a. Aggressively, encourage and seek public support for a substantial increase in forestry extension efforts by the Cooperative Extension Service, which has primary responsibility for public extension activities in Maine. Provide leadership in coordinating the efforts of the Extension Service, the University, industry, and all goups which disseminate forestry information.

b. Continue a service forestry program which provides technical assistance to aid small woodland owners in achieving their management objectives. Strengthen the program by adding trained forest technicians to assist in executing many of the functions now performed by the service forester.

c. The task of intensifying forest management in Maine calls for the coordination of efforts among many public and private service providers. Therefore, the State should increase referrals of landowner to

C. Recommendations (Cont'd)

consulting foresters, landowner assistance programs, landowner associations, and the Extension Service and others.

d. Utilize cost-sharing programs as tools for helping landowners accomplish their objectives. Study the special problems of small woodland owners, including the importance of financial incentives. Evaluate the effectiveness of these programs in achieving Maine Forest Service objectives.

e. Maintain a forest nursery to provide landowners with growing stock to reforest understocked and poorly stocked forest land, develop genetically improved stock and develop a seed bank for genetically selected native species.

f. Actively encourage the formation of various private landowner associations which improve information flow, upgrade management practices, and result in greater landowner benefits in harvesting, marketing, and use of their resource.

g. Support taxation policies which are based on the productivity of timber values rather than "highest and best use."

h. Encourage new markets opportunities.

i. Encourage, provide technical support and additional funding to the Bureau of Public Lands during the preparation of multiple-use forest management plans for the state's public lots.

A. Issue Statement

A coordinated, applied research program is urgently needed to meet future resource requirements.

B. Perception of the Issue

Much of the forest resesearch done in the State of Maine has been uncoordinated and abstract. The spruce budworm and the white pine weevil have caused extensive damage and reduction of quality and quantity of Maine's forest resources. More research is needed to develop management techniques which optimize production, form site productivity, and protection of forest resources. The need for genetically superior trees, resistant to insects and diseases and with increased growth capabilities has been recognized but research is underfunded and uncoordinated.

There is poor utilization of many species due to lack of markets. Research is needed to coordinate a utilization program for low quality wood and fiber suitable for use in alternate energy systems.

C. Recommendations

1. The School of Forest Resources, University of Maine be established as coordinating agency for forest research in the State.

2. That results of research and progress on ongoing research projects be pooled and published in review form.

3. That the Maine Forest Service develop the capability for market research and analysis.

4. That the Maine Forest Service cooperate with the University to develop a viable tree improvement program.

5. That federal funding be used to implement the tree improvement program and to prepare a market analysis.

6. That the Maine Forest Service conduct applied research in coordination with industry, University and Federal agencies.

A. Issue Statement

The State forest fire control organization must be able to maintain an acceptable fire suppression capability, not only to protect renewable resources, watersheds, life and property, but to use fire as a management tool.

B. Perception of the Issue

Over the past several years, weather has been generally favorable and forest fire losses low. This led to some uncertainty regarding possible declines in the State fire control capabilities. The 1977 fire season tested these capabilities and revealed some shortcomings which must be addressed if fire losses are to be held to an acceptably low level.

C. Recommendations

1. Institute a comprehensive presuppression planning program.

2. Develop a fire management organization with written position descriptions; coordinated by a State Fire Supervisor.

3. Intensify training of state personel, local fire departments, and organized crews.

4. Provide a sufficient budget to operate, maintain and replace equipment on a scheduled basis and acquire equipment such as helicopters and/or amphibious aerial tanks.

5. Continue to provide local fire departments with assistance in obtaining equipment.

6. Analyze the state forest fuels situation and develop a fuels management program which includes such practices as prescribed burning.

A. Issue Statement

Watershed management related to the maintenance of water yields and protection of water quality is either needed or required on all forest lands of the State.

B. Perception of the Issue

For the past three centuries, Maine has been blessed with a sufficient quantity of high quality water. Little thought has been given to the maintenance of this quality until the passage of PL 92-500, the Federal Water Quality Control Act, which through court interpretation requires statewide water quality management planning. There are several factors involved:

a. Section 208, PL 92-500 requires that all states prepare statewide water quality management plans. A vital portion of this plan is the assessment of water quality problems arising from nonpoint sources. EPA is particularly concerned with those non point sources concerned with forestry activities.

b. Section 404, PL 92-500 outlines the scope of Corps of Engineers responsibilities for waters of the United States. This involves most of the rivers, streams, lakes or ponds in Maine.

c. At the present time, the State lacks sufficient base line data from which to determine or measure extent of any problems that exist, although a statewide survey of harvesting operations may give some insight into the extent of sedimentation problems.

d. A concern for water quality has been mandated by Federal Law and will be a part of forest resource planning and management for the foreseeable future.

C. Recommendations

1. That monitoring of selected watersheds for sedimentation and nutrient loss be established as soon as possible and continued on a permanent basis. That this be a cooperative effort between Bureau of Forestry, Department of Inland Fisheries and Wildlife, Department of Environmental Protection and U.S. Forest Service.

2. That erosion and sediment control measures be incorporated into timber sales agreements and fire suppression plans, and management practices.

3. That special educational efforts be made to upgrade siting and construction of haul roads, skid roads, and trails and yards.

4. Provide additional manpower.

A. Issue Statement

There is great inefficiency in the harvesting, use, sale, and manufacture of forest products in Maine.

B. Perception of the Issue

Approximately 323,000,000 bft. valued $32,300,000, which represents 37.4% of all sawlogs cut in Maine are exported from the State in an unmanufactured state, resulting in a substantial loss of economic benefit to Maine. Secondary processing provides jobs and increases the total value of the wood resource to Maine. In addition, there are widespread inefficiencies in the harvesting practices employed in Maine. A greater efficiency in these areas would not only increase the economic benefits accruing from each cord of wood, but would also increase the amount of wood and fiber available to meet the anticipated increases in demand for goods and services in the coming decades.

C. Recommendations

a. Provide marketing assistance to landowners, loggers, processing mills, trade associations, other State agencies and consumers.

b. Encourage maximum utilization of all forest products and wood residues.

c. Provide technical support to industrial development activities related to forest-based industries.

d. Identify market opportunities for forest products and make that information available to private processors and entrepreneurs.

e. Long-range marketing strategies for both primary and secondary processing of wood products in Maine should be developed.

f. Encourage maximum use of domestic woods labor.

A. Issue Statement

Ever increasing demands for goods and services provided by the total forest resource require careful and thorough long-range planning to insure not only that demands are met, but that the resource is carefully husbanded to assure long-term availability.

B. Perception of the Issue

For years man has assumed that forest resources were inexhaustable and he has felt little concern for the future. The U.S. Forest Service projections of the availability of the timber resource alone give cause for concern. Several species are presently being overcut in the State of Maine and fragmentary projections indicate that all species will be in that category by the year 2000. Urbanization, changes in ownership patterns, changes in silvicultural techniques, insect and disease predation and changes in man's own needs and desires impinge on all elements of the forest resource, timber availability, recreation, wildlife habitat, water quality and quantity, and even human development. The key to meeting this issue is systematic long-range planning.

C. Recommendations

1. That resource planning be assigned higher priority than it has in the past and that a State forest resource plan be developed by 1983.

2. That a State Forest Resource plan continue the development of a sound public policy by identifying and addressing the public interest and by maintaining a planning process which is open and receptive to the public.

3. That Federal funds available for forest resource planning be utilized as quickly as they become available to develop a viable planning program in the State.

4. That highest priority be given to the development of an inventory system which is the essential first step in resource planning. This must not be limited to timber, but to all elements effecting the forest resources.

A. Issue Statements

The development. storage and dissemination of forest inventory data, including classification of forest lands by productivity class and forest cover type maps, is needed for all forest lands in the State, together with soils inventory data including suitability for tree growth, engineering characteristics and susceptibility to erosion. Periodic updating of this data is a necessity.

B. Perception of the Issue

The basic building block for any resource plan is an adequate inventory. Several factors must be considered in approaching this issue.

a. Much data is presently available but is so dispersed that potential user agencies are either unaware of its existence or do not know how to obtain it.

b. Data on productivity classes and soils is either fragmentary or nonexistent and must be developed as expeditiously as possible.

c. The State of Maine has never had a statewide forest cover type map of sufficient detail to assist in resource planning.

d. Several site studies have been conducted by the University of Maine and the Northeastern Forest Experiment Station in Orono. Some research work is in progress but the information has never been pooled.

e. Soils surveys are in progress, but only about one third to one half of the State has been completed and target dates for completion are in the mid 1980's.

f. Agencies interested in inventory data are often left out in planning for collection of data.

C. Recommendations

a. That all available forest inventory data be pooled at one central location and access to this data be readily available to all users.

b. To pool the available information and to tentatively delineate and classify Maine forest land into potential productiv-

C. Recommendations (Cont'd)

ity classes.

c. That user priorities and needs be identified and that maximum use be made of the U. S. Forest Service computer system to develop a data base which reflects these priorities and needs.

d. That the data system be compatible with or part of a single statewide resource information system.

e. To fund SCS soil survey activities at such a level as to expedite completion of statewide soil surveys.

f. State University and Federal user agencies pool resources in developing and maintaining a cover type map of Maine.

A. Issue Statement

Increased development, federal projects and state regulations have resulted in the loss of commercial timberland available for harvesting. The proposed Dickey Lincoln project and Penobscot Wild and Scenic River, as well as, the Indian land claims may create more conflicts for forested land uses.

B. Perception of the Issue

Erosion of the forest land use base has been gradual but persistant. While the impact on the timber resource alone is becoming significant, all aspects of forest resource uses and management are being affected.

The Dickey-Lincoln Dam proposal will remove over 81,000 acres from timber production and recreation use. The Indian land claims have the potential to change forest practices and use on up to 12.5 million acres of land. Although the proposed Penobscot Wild and Scenic River will increase wilderness and recreation areas, timber removals on 176,000 acres will be limited.

C. Recommendations

1. That the Maine Forest Resource Plan address the cummulative effects of State and Federal projects on total forest resource use.

2. That the Maine Department of Conservation provide technical support to the administrators of any land granted to Indians.

A. Issue Statement

Insect and disease prediction poses a serious threat to the health and future productivity of the commercial forest lands of the State.

B. Perception of Issue

Although spruce budworm is the major insect problem to the forest resource in Maine, there are other potentially devastating threats. These include white pine weevil, birch case borer, gypsy moth, saddle prominent, spittle bug, scheroderis, needle gall midge and balsam twig aphid. The cost of pest control and the loss of productivity have been enormous, chemical controls are becoming increasingly controversial as a result of the Clean Water Act and concern for health hazards. Potential alternatives to present control measures appear to be new silvicultural approaches, biological controls, development of resistant trees and use of other species.

C. Recommendations

a. A phased spray program which shifts from heavy reliance on spraying as a long-term pest control measure, to an integrated control program which relies on a mix of procedures aimed at outbreak prevention, monitoring pest population and applications of direct control measures at optimum timing.

b. That carefully planned and funded research provide improved understanding of pest population dynamics, pest-host interactions, and alternative techniques for prevention monitoring and direct control.

c. That resistant trees be identified and used as seed sources.

d. That management practices be encouraged which provide stand conditions least favorable to pest infestations.

A. Issue Statement

There are insufficient facilities to meet the predicted need for some dispersed recreation activities in the next ten years.

B. Perception of the Issue

There is an increasing demand for additional recreational facilities to serve snowmobiling, cross-country skiing, snowshoeing, hiking, horseback riding, trail biking, and small group or primitive campsites. In some instances, the demand is to develop additional trails. In other situations, the demand is to upgrade the quality of existing trails. And there is a demand in selected cases for secondary facilities along existing trails. Some new trails could be developed on discontinued town and county roads, others on abandoned railroads, others on utility line rights-of-way.

C. Recommendations

1. That towns and communities be encouraged to develop dispersed recreational facilities on town owned land where demonstrated needs exist.

2. That the small woodland owner be informed of legal liability responsibilities for providing dispersed recreation facilities for public use.

3. That major land owners be encouraged to examine the need on their land for additional dispersed recreation opportunities for all seasons.

4. That the State inform all public entities of federal funds available for the development of dispersed recreational areas.

5. That the State role in the forest campsite program be examined to determine the best method of administering the program.

6. That the use of State and federally owned lands and proposed wild and scenic river acquisitions be examined as sources of land for additional dispersed recreation facilities.

A. Issue Statement

The maintenance of productive forest wildlife habitat is essential to the future welfare of the wildlife resources of the State of Maine.

B. Perception of the Issue

The wildlife populations of the State of Maine are an integral part of the total forest resource, and the future welfare of the State's wildlife resources will be dependent on the type and amount of forest habitat available for their use.

Because of the high economic, sociological, and biological value of wildlife to the citizens of the State, it is extremely important that wildlife management considerations be integrated into forest management activities. Several considerations affecting wildlife in the State include:

1. Creation of large stands of similar aged trees and species composition are decreasing the overall quality of the forest wildlife habitat.

2. Pests such as spruce budworm adversely affect the quality and quantity of wildlife habitat.

3. Increased posting of forest lands against trespass may be resulting in an unequal distribution of the annual harves of selected species of wildlife; thus adversely affecting the state's wildlife management efforts.

4. Human activities such as second home development, forest practices, road construction and concentrated recreation uses of waterways can affect threatened and endangered species such as the blue-backed trout and the bald eagle.

C. Recommendations

1. That there be greater coordination between the Department of Inland Fisheries and Wildlife and the Bureau of Forestry concerning forest management needs, potentials, and programs.

2. That federal funds be made available to support integrated wildlife-forest management plans and programs.

3. That a forest wildlife habitat evaluation scheme be developed in coordination with the Department of Inland Fisheries & Wildlife, and incorporated into the update of the Maine Timber Survey.

C. Recommendations (Cont'd)

4. That efforts be initiated to encourage the integration of silvicultural practices and management schemes which benefit wildlife into forest management activities.

5. That management strategies be developed by the Department of Inland Fisheries and Wildlife which provide for the protection of threatened and endangered species.

"I"

Supplemental data to presentation by Henry W. Saunders, Saunders Brothers, Westbrook, Maine, before the Joint Select Committee on Forest Resources Public Hearing of Tuesday, July 13, 1976, University of Maine, Orono, Maine, on "Present and Future Markets of Maine's Forest Resources and Products".

MAINE WOOD TURNERY AND FLATWARE INDUSTRY STATISTICS 1/

	Value of Product	Number of Workers			Gross Wages
		Male	Female	Total	
1972	$42,388,577	1,940	1,391	3,331	$16,298,748
1975	$50,777,490	1,676	1,144	2,820	$16,671,900

TIMBER VOLUME CONSUMED BY WOOD TURNING AND FLATWARE MILLS IN 1975 2/

TYPE OF WOOD	(BOARD FEET) VOLUME
Aspen	872,000
White Ash	3,208,000
Basswood	43,000
Beech	5,306,000
White Birch	39,364,000
Yellow Birch	2,605,000
Hard Maple	9,882,000
Oak	3,000
Soft Maple	472,000
Other	53,000
Total	61,808,000 or 123,616 Cords equivalent

1/ Based upon 41 establishments; data provided by Division of Research and Statistics, Bureau of Labor, Maine Department of Manpower Affairs.

2/ Based upon 44 establishments; data provided by Maine Bureau of Forestry.

NOTE: Difference in number of "establishments" between Bureau of Labor and Bureau of Forestry of no signficance. In two instances Forestry counted a firm with two mill sites, as two "establishments", while Labor counted as one "establishment". In one case, a firm using less than 20 cords of wood annually is included in the volume totals, while Labor does not have the firm listed as a manufacturer of wood products, and has no data on Products Value for the firm, nor employment and wage data. Classed by Bureau of Labor as a Retailer, since principle business is not manufacturing.

"J"

Re: Public Hearing
Joint Select Committee on Forest Resources

At: Nutting Hall, U. of Maine, Orono
July 13, 1976

By: Arthur F. Stedman
Wood Procurement and Sales Manager
Scott Paper Company, Winslow, Maine

Subject: Present and Future Demand for Pulp and The Availability of the Resource in Maine

---

Mr. Chairman, etc.

Real pleasure to be a part of this program, etc.

Encouraging to Forest Products Industries to have this attention placed on Legislative action on such an important segment of Maine's economy.

The subject assigned to me refers to "Demand for Pulp"; I assume that is used in the usual Maine generic phrasing of meaning "Pulpwood" and on that premise I will now proceed with my remarks.

The present consumption of the 12 major pulp mills in Maine is approximately 3,810,000 cords per year.

The near future annual consumption of those same 12 Maine pulp mills is 4,980,000 cords, an increase of 1,170,000 cords annually or 31%. I say this with assurance as the plant expansions for the increased volume have already been announced and, in fact, the majority of expansion construction is well under way. For the information and review of this Committee I have provided a schedule of data to support the cord volumes I have stated.

It may be of interest that the same 12 pulp mills have a timberlan ownership in Maine of about 6,800,000 acres.

As to the further future demand it would appear logical that there would continue to be interest by pulp manufacturers as all economic forecasts point to an increasing demand for paper products from now to the year 2000 and Maine has the forest resource to support further pulp mill consumption.

I base my statement of forest resource ability on the premise tha of pulpwood species, only about on -half of the annual timber growth in Maine is now harvested and that on so-called Paper Company lands th annual harvest is 30% less than the growth.

The present expansion programs now underway will reduce that excess to some extent but not to a substantial degree.

I'd like to amplify my remark that the harvest on Paper Company lands is 30% less than the growth by citing the experience of the firm I am employed by, Scott Paper Company.

Our ownership in Maine is 880,000 acres and our pulp mill at Winslow operates on a 75% softwoods - 25% hardwoods ratio. Scott is now constructing a mill at Skowhegan, to become operational this Fall which will consume an additional 175,000 cords per year more than the Winslow Plant. The species blend is to be 60% softwoods and 40% hardwoods. This will permit us to continue to cut only the annual softwood growth on our lands but will also allow us to cut an additiona 100,000 cords of hardwoods annually which have formerly not been harvested -- thereby resulting in better timberland utilization.

Further, on the concept of utilization, our new mill will be abl to accept as pulpwood "all species native to the State of Maine" and that includes Cedar. This is a far cry from the restrictive pulp mill requirements of only 10 years ago.

In addition to using all species, the mill will also be a market for wood waste as a hog fuel boiler has been installed to make the pla as energy-free as possible from fossil fuels. Again, this is good forest product utilization and negotiations are now underway with a number of sawmills and chip mills to purchase their bark and wood waste residues.

As to the availability of the resource it is of interest that the pulpwood cut in Maine in 1974 was 3,384,355 cords which is about 400,000 cords or 11% less than capacity demand and represents imports required from neighboring States and Canada.

Incidentally, 1974 was the peak pulpwood production year in Maine and to indicate the volume in terms of size it would be a pulpwood pile 4' high, 4' wide for a distance of 5,128 miles or stretching from Bangor, Maine to Honolulu, Hawaii -- and that's some stretch. ---- Tell joke about twins.

Here is where I start to stumble on the phrase "availability of the resource in Maine" and I believe this is the area that this Committee should address itself:

1. We have the forest resource but is it economic in relation to other parts of the country. The cost of a modern pulp mill is very, very capital intensive and all major pulp and paper companies have a "Venture Capital" department that only look at the "bottom line" of a Profit and Loss projection to determine where the next mill is to go.
2. Do the tax costs per acre of timberland warrant the holding of forest lands for the 40-50 year period required before the next harvest.
3. Will the small local land owner, upon whom mills depend for a significant volume of pulpwood deliveries, consider land tax costs deny a reasonable return on investment and decide to sell to "out-of-staters" who have no interest in forest products production.
4. Will Government acquisition of lands limit future availability of the resource to commercial use; for example: Dickey-Lincoln flowage, Bigelow Mt. preserve and increased State Park areas.
5. Will State regulations substantially restrict the ability of the land owner to harvest his forest products; an example today are the Protection Districts of the Land Use Regulation Committee. Will tomorrow be even more restrictive?
6. What about insect damage and destruction - right now it's Spruce Budworm. Will the State shoulder a sufficient share of the cost burden to suppress such damage to enable the forest products industries to look ahead to an economically healthy future.

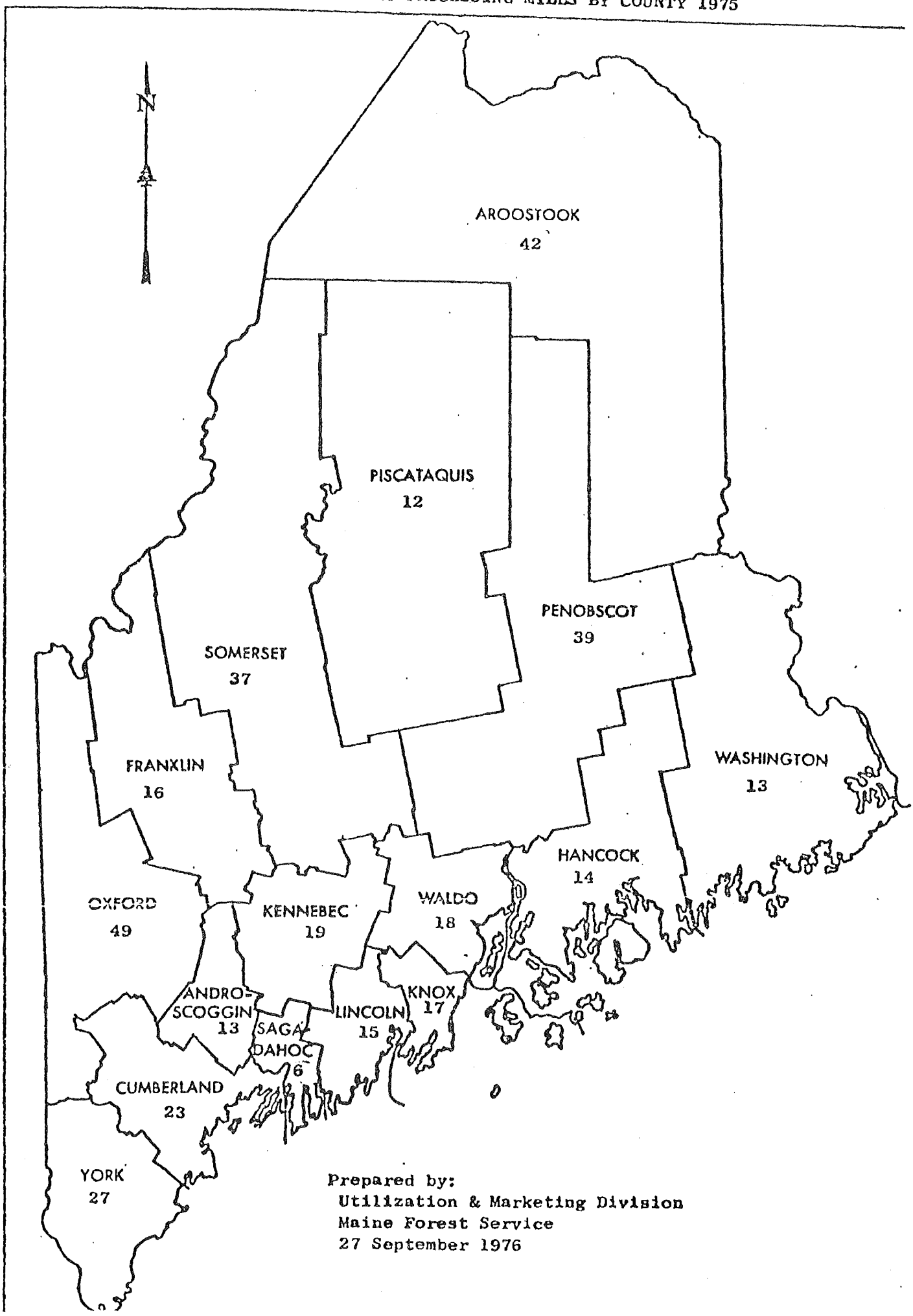
In summation, I believe I have properly addressed myself to the present and near future demand for pulpwood in Maine; as to the availability of the resource -- the trees are there and there is a demand for them as long as it is economically practical and there are no unreasonable regulatory constraints on the ability to harvest them.

Again, let me express my appreciation for the opportunity to participate in this Hearing.

AFS/joa
7/12/76

"K"

DISTRIBUTION OF PRIMARY PROCESSING MILLS BY COUNTY 1975



Prepared by:
Utilization & Marketing Division
Maine Forest Service
27 September 1976

DISTRIBUTION OF MAINE PRIMARY PROCESSING MILLS BY SIZE CLASS - 1975

MILL SIZE CLASS ANNUAL PRODUCTION	NO. MILLS	PERCENT OF TOTAL MILLS	CUMULATIVE TOTAL	CUMULATIVE PERCENT OF TOTAL
Less than - 10 MBF	31	9	31	9
10 - 99 MBF	103	29	134	38
100 - 249 MBF	59	16	193	54
250 - 499 MBF	26	7	219	61
500 - 999 MBF	35	10	254	71
1000 - 2499 MBF	43	12	297	83
2500 - 4999 MBF	27	7	324	90
5000 - 9999 MBF	14	4	338	94
10,000 - 19,999 MBF	6	2	344	96
20,000 - 39,999 MBF	6	2	350	98
40,000 - 59,999 MBF	2	1	352	99
60,000 - MBF & Over	8	1	360	100
Total	360	100%		-

Utilization & Marketing Di[illegible]ion
Maine Forest Service
27 September 76

"L"

STATEMENT TO JOINT SELECT COMMITTEE ON FOREST RESOURCES

ON OCTOBER 13, 1976

BY

GEORGE BOURASSA, DIRECTOR

UTILIZATION & MARKETING

UTILIZATION & MARKETING DIVISION

Until early this summer Utilization and Marketing operated as part of the Forest Management Division. The objective of the program as stated in the 1970 Policy Manual as amended in 1974 was to ". . . promote improved markets, utilization and manufacture of forest products to maintain a thriving forest industry." The policy as stated was to " . . . provide technical assistance on all phases of logging, manufacturing, utilization and marketing of wood products."

In addition to these written statements it was my understanding that the following unwritten policies were in effect:

1. The Utilization & Marketing personnel should function primarily as support for the service foresters.

2. Work in the area of secondary wood manufacture should be limited.

3. Industrial development activities related to wood industries was the primary responsibility of the State Development Office with our contribution being restricted to supplying resource data upon request.

4. Work in the housing field should be minimal.

5. Activities should be concentrated on small industries - the larger firms can take care of themselves.

Since becoming a separate division and in preparation for an upcoming review of the Bureau, I have prepared a new and broader set of guidelines.

The broad basic goal of the utilization and marketing program is to promote the efficient harvesting, manufacture and sale of forest products so as to maximize the economic benefits of Maine's forest resource for landowners, loggers, wood producers and ultimately Maine citizens.

Major areas of activity are as follows:

A. Develope market strategies and provide marketing assistance to landowners, loggers, processing mills, trade associations, other state agencies, and the general public.

1. Conduct seminars, workshops and training sessions relating to marketing.

2. Monitor and promote forest product standards for tree grade rules, log grade rules, and lumber grade rules in conjunction with national standards, U.S. Forest Service, and appropriate trade associations so as to enhance marketability of Maine products.

3. Investigate and recommend new products/markets to industry.

4. Gather, analyze and publish statistics on stumpage prices, mill delivered prices, lists of logging contractors, primary and secondary wood processing mills, and information relative to special forest products (xmas trees, maple syrup etc.)

5. Serve as a clearing house for loggers, landowners, mill owners, retail and wholesale lumber distributors and special product manufacturers in buying or selling forest products.

B. Encourage maximum utilization of all forest products and wood residues.

1. Conduct in-plant studies relating to conversion efficiency, material flow and lumber recovery.

2. Provide field assistance to loggers in all phases of logging activity to maximize yield in terms of volume and value recovery from timber harvested.

3. Develops guidelines for salvage of timber damaged by insects and disease, fire, flood, windthrow or other natural disasters.

4. Survey and provide data on availability of residues for potential users.

C. Assist in industrial development activities related to forest based industries.

1. Provide technical assistance to existing industries to maintain and expand operations.

2. Assist/cooperate with other governmental (state-local) agencies and various development organizations in supplying resource and marketing information to potential industries.

3. Provide contact with research facilities such as U. S. Forest Products Lab, Research Stations, and University of Maine for industry to aid in development and testing of new materials or processes.

4. Encourage secondary manufacturing in state by promoting opportunities to existing primary manufacturers.

D. Monitor and report on forest resources data.

1. Compile and publish for general use the annual state timber cut.

2. Cooperate with the U. S. Forest Service in the preparation of the state forest inventory.

3. Produce such resource data as may be requested by the Bureau Director for support of Bureau programs or activities.

E. Carry out provisions of applicable State laws for which the Utilization and Marketing Division has administrative responsibility.

1. Execute responsibilities under MRSA, Title 12, Chapter 520 - report of primary wood processors.

2. Execute responsibilities under MRSA, Title 32, Chapter 67 - registration of transporters of Christmas trees, boughs and wreaths.

3. Execute responsibilities under MRSA, Title 30, Chapter 226 - enforcement of Maine Commercial Standard for White Cedar Shingles.

F. Provide staff support to the Bureau Director on legislative and policy matters related to utilization and marketing activities.

G. Provide technical assistance to Office of Energy Resources on matters concerning energy production from wood and wood waste.

H. Cooperate with other organizations, public and private, which have compatible goals

Short Term Goals

There are two areas which we hope to address in the near term. The first deals with assistance to loggers in multiproduct harvesting. We have a program developed which will put a full time man in the field to work with loggers to insure that the highest value product is removed from the trees that are harvested. This should insure that the logger gets the highest return for his efforts and that the limited high quality resource reaches the market place.

The second program will put one man full time working with existing primary processors to explore and promote expansion in secondary manufacturing. This program was developed in the belief that a) there are expansions currently taking place in primary manufacturing capacity that might have been diverted to secondary manufacturing had someone worked with the firm b) that secondary manufacturing provides more employment and hence more money into Maine's rural economy than does primary manufacturing, c) secondary processing requires only 14 MBF of log input per year to keep one individual employed as opposed to 173 MBF of log input for primary manufacturing so any efforts can in fact be more saving on our timber resource.

Both of these programs have been submitted to the U. S. Forest Service for consideration and if funded will run for a two year period.

Long Term Goals

The following areas are some of those that we see as needing additional work in the future:

1. Each year the demand for more detailed information on the forest resource and markets is growing. The problem which must be resolved is how to respond to this increasing demand without foregoing field work with landowners, loggers and industry and dealing with the larger picture of the marketplace.

2. We need to strengthen or develop working relationship with the vocational technical schools, homebuilders association, retail and wholesale lumber dealers, and the various special product trade associations in order to promote the use of Maine forest products.

3. We need to continue working on the problem of a use for low grade hardwoods.

4. There continues to be opportunities for better uses of wood waste and we need to find these wastes and higher value uses. The current energy crunch has the potential for grinding up a lot of good fiber for burning that may have a better use.

5. We need to provide the small sawmill owner with better marketing assistance (54% of our mills produce less than a quarter of a million board feet per year).

6. We need to investigate the possibility of establishing custom or cooperative lumber processing facilities such as preservative treatment plant or custom dry kilns in various places in the State.

These are some of the areas that need to be considered as our program is developed. The final direction and priority will in large measure be determined by the current program review which the Bureau has underway.

"M"

STATE OF MAINE
OFFICE OF LEGISLATIVE ASSISTANTS
STATE HOUSE
AUGUSTA, MAINE 04333

November 22, 1976

Dr. Dwight Hair, Director
Division of Forest Economics and Marketing Research
United States Forest Service, 5845 So. Agriculture Bldg.
U. S. Department of Agriculture
Washington, D. C. 20250

Dear Dr. Hair,

The Joint Select Committee on Forest Resources has been discussing the information that you very ably presented to the Committee at its meeting on July 13, 1976. One issue that has interested the members pertains to the cost of sawlogs and the cost of pulpwood. The Committee would greatly appreciate your written response concerning this issue.

One group has interpreted your statements as a comparison between the wood costs of paper manufacturers and lumber manufacturers as these costs affect the end price. According to this interpretation, wood costs in the form of pulpwood are a much smaller percentage of total costs for paper manufacturers than the wood costs in the form of sawlogs for lumber producers. As a result, increases in raw material costs would produce smaller increases in retail paper prices than such increases would cause in retail lumber prices. It is assumed, in this theory, that there are other significant costs (e.g., chemicals, machinery, etc.) in paper manufacturing that are not present in lumber manufacturing.

Another interpretation of the issue concerns the prices paid for pulpwood and sawlogs. According to this theory, the highest value of wood is for the production of paper. Therefore, the price paid for pulpwood should be higher than the price paid for sawlogs.

The Committee would greatly appreciate your clarification of the subject. Since the Committee is planning to complete its report and deliberations within three weeks (by December 8, 1976), the Committee would appreciate your response at your earliest convenience.

Thank you once again for your help.

Sincerely yours,

Ted Potter

Ted Potter
Legislative Assistant

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE
P.O. Box 2417
Washington, D.C. 20013

4800

December 13, 1976

Mr. Ted Potter
Legislative Assistant
State of Maine
State House
Augusta, Maine 04333

Dear Mr. Potter:

This is in response to your letter of November 22 concerning my statement before the Joint Select Committee on Forest Resources on the competitive strength of the wood using industries in bidding for stumpage.

The idea in your second paragraph is the one I wanted to convey. At the present time, stumpage costs represent less than 5 percent of the selling price of a ton of wood pulp. In contrast, stumpage costs represent much higher proportions of the selling price of most other timber products--40 to 50 percent in the case of lumber. Given these proportions, any increase in stumpage prices will have a much smaller impact on the selling price of wood pulp than on other products.

In addition, the available data indicate that the demand for wood pulp is inelastic, i.e., not much affected by price changes, while that of lumber and most other timber products is sensitive and affected in a substantive way particularly over a period of time.

Thus, the information we have on raw materials costs and price elasticity suggests that as the competition for wood increases and prices rise, the pulp industry will be able to successfully compete with most other timber using industries for stumpage.

This is the idea I was trying to express. I am sorry it has been misinterpreted along the lines indicated in the third paragraph of your letter. I hope that what I have said here will clear up the misunderstanding.

Sincerely,

DWIGHT HAIR
Leader, Demand, Price,
and Trade Group

"N"

Report to the

Joint Select Committee

on Forest Resources

THE PRODUCTION AND MARKETING OF FOREST PRODUCTS IN THE UNITED STATES AND THE NORTHEAST, 1972

Edward W. Potter
Legislative Assistant

November 17, 1976

The Production and Marketing of Forest Products In The United States and the Northeast, 1972

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Introduction

Transportation is one variable that has an important impact upon the forest industry. Demand for sawtimber for all purposes exists in each of the 50 states. In 1970, only 12 widely dispursed states provided nearly 60 percent of the nation's harvested sawtimber. Transportation is vital to the national distribution and marketing of forest products.

A review of the United States and the Northeast which includes the New England, Middle Atlantic, and East North Central regions shows that New England and the nation depended upon railroad and truck transportation in roughly equal proportion for the distribution of forest product tonnage in 1972. Within the entire Northeast region however, roughly 75 percent of the forest product tonnage was distributed by truck.

Of shipments into the Northeast and New England from other regions of the nation, Bureau of the Census data shows that 75 percent of the forest product tonnage shipped into the Northeast and 88 percent of the forest products shipped into New England were transported by rail.

Nearly 60 percent of the forest product tonnage exported from New England in 1972 was shipped primarily by rail and 40 percent by truck.

Since Census Bureau data does not provide statistics for each state, it is impossible to determine from this source the movement of forest products within, into, or from Maine by mode of transportation. Estimates provided by individuals knowledgeable of the marketing of Maine forest products indicate that roughly 50 percent of Maine's hardwood long lumber, 80 percent of the state's softwood

long lumber, and 90 percent of Maine's paper product is marketed outside Maine. According to several marketing studies conducted in the mid 1960's, most of Maine's lumber products are shipped to northeastern markets by truck, and most of the state's paper products are shipped by railroad.

In 1972, the ratio of forest product tonnage carried by railroad to forest product tonnage carried by truck varied among the United States, the Northeast, and New England. In regard to truck shipments of forest products in all three areas, however, there was a high correlation between the use of private truck and commercial carrier for the distribution of forest products. For the most part, forest product tonnage transported by private truck (owned by the manufacturer or the customer) exceeded that of commercial carrier.

In order to evaluate the impact of transportation costs upon the forest products industry of Maine, it is necessary to compare and contrast the markets for forest products and the mode of transportation by which they are transported to markets in the United States and the Northeast (including New England). As a result, the following system was adopted:

1. A description and an analysis of the distribution and marketing of forest products by mode of transportation in:
   - A. The nation;
   - B. The Northeast;
   - C. New England.
2. An analysis of the costs of shipping forest products by various modes of transportation to the same markets from different points of origin throughout the nation and from Maine.

The data indicates that transportation costs create a cost disadvantage for forest products manufacturers in Maine compared to manufacturers of forest products in other sections of the nation which market their output in the Northeast. If all variables for the production, distribution, and marketing of manufactured forest products were equal for all firms throughout the nation with the exception of transportation costs, Maine forest products would be limited almost exclusively to the Boston market. As a result of the transportation rate advantages afforded forest products manufacturers in Canada and other regions of the nation, Maine manufacturers must depend upon other variables to gain a competing advantage.

CHART I

Transportation Costs For Shipments Of
Forest Products To New York City

Railroad

Type of Product	Point of Origin	Distance	*Cost Per Lb.
Newsprint	Woodland, Me.	656 miles	.0107¢
	Clermont,Quebec	656 miles	.0097¢
Kraft and Fine Papers	Erie, Pa.	496 miles	.0080¢
	Bucksport, Me.	496 miles	.0095¢
Lumber	Ashland, Me.	599 miles	.0095¢
	LaCrosse,Va.	630 miles	.0095¢

Truck

Type of Product	Point of Origin	Distance	*Cost Per Lb.
Kraft and Fine Papers	Madawaska, Me.	651 miles	.0208¢
	Kalamazoo, Mi.	800 miles	.0177¢

* Costs are computed for carload and truckload quantities.

It is unlikely that transportation rate structures will change substantively thrcughout the nation, and evidence indicates that transportation rates for Maine forest products producers will continue to place them at a serious disadvantage. The decline of western sawtimber production in the future will substantially increase competition from the South which has a larger volume of softwood sawtimber (55%) than the volume of softwoodawtimber (39.5 percent) in the forest of the Northeast. If already advantageous transportation rates for the shipments of forest products from the South

to the Northeast become increasingly more favorable to Southern manufacturers, Maine manufacturers will have to extract significantly greater savings from other factors of production to offset the serious disadvantages incurred by transportation rates. As business enterprise continues to move South which will serve to spread out increased railroad transportation costs and as the volume of forest shipments from the South increase which may enable the forest industry to obtain special rate considerations, transportation costs charged to northern forest products manufacturers may become more adverse than they are presently.

Maine's higher railroad rates, compared to other regions of the nation, are the results of a number of factors. One significant cost increase results from the number of railroad systems over which forest products must be transported to markets in the North. For example, lumber and paper products may be transported over 4 or 5 railroad systems to Boston or New York depending upon the point of origin in Maine. Forest products from the East North Central region or from the West Coast are transported over 1 to 2 railroad systems.

Another factor contributing to higher railroad transportation costs incurred by Maine firms is the dependence of the railroad systems and the forest industry upon each other. Forest products or products used in forest products manufacturing comprise most of the business of Maine railroads. As transportation costs increase, forest products manufacturers must absorb most of the cost alternatives available. In the South and West, on the other hand, many different types of industries use railroad services, and cost

increases can be spread out among many types of users. Furthermore, the forest industry in the South and West has been more successful in gaining special consideration by the railroads than many other industries which helps to limit railroad rate increases as they affect forest products. The forest industry is not only large in organizational structure, it also uses railroads more extensively than many other industries.

According to a former employee of the Interstate Commerce Commission, railroads in the South not only "bargain" with industry to formulate shipment rates, they negotiate with the Interstate Commerce Commission. By bargaining as a group, there is less duplication of effort and more continuity in rates. Therefore, the railroad industry in the South is able to more successfully obtain special consideration for its comprehensive rate plan than railroads in the Northeast which bargain individually with the I.C.C.

Since railroad rates are comparatively high in the Northeast, and truck rates are, in part, tied to railroad rates to prevent one from eliminating the other, truck rates are higher in New England than in the South. As a result, there is no substantial transportation alternatives available to Maine forest products producers to compete with South manufacturers.

In addition to comparatively less favorable transportation rates, Maine and New England forest products manufacturers will meet increased competition from southern forest products manufacturers. The United States Forest Service predicts that as softwood sawtimber harvesting declines in the West, southern softwood will be in much greater demand. Since northeastern forests are pri-

marily hardwood, southern softwood will be marketed in increasing quantities in the Northeast. As a result of the closer proximity of the South to the Northeast compared to the West, and the advantages freight rates southern sawtimber products may provide substantially greater competition on the northeastern market than presently exists.

"O"

AREA CODE 207
TELEPHONE 947-3307

BRADFORD S. WELLMAN
TRUSTEE
FIDUCIARY AND FAMILY FINANCIAL SERVICES
6 STATE STREET
BANGOR, MAINE 04401

September 24, 1976

Douglas M. Smith, Esq.
30 E. Main Street
Dover-Foxcroft, Maine 04426

Dear Doug:

At the hearing on September 15, 1976 you asked me to outline four major areas of federal tax policy which you as a committee might be interested in making a comment upon:

1. The first area (and one we discussed at length at the hearing) is the tax treatment of funds received under the Forest Improvement Program, commonly called F.I.P. After talking with our people in Washington I'm convinced that trying to change tax treatment of F.I.P. funds is impractical. It would, however, be very helpful to the approximately 100,000 small timberland owners who own nearly half of the forest land in Maine to improve the quality of the service available under F.I.P.; increase the priority given to forestry practices under F.I.P. by the state and county officials, and to obtain more funding for the program. It's my understanding that about 4 million acres can be considered to be a high potential target for effective use of F.I.P. funds. Historically these lands have had lower levels of management practices than industry lands and constitute a pool of potentially productive land if good management practices could be made available. A more active and effective program would encourage jobbers, landowners and small wood industries.

   Your investigation of F.I.P. should look at federal, state and county levels of administration and include comments from private consultants, landowners with experience with the F.I.P. program and others working with the system.

2. The matter of allocating funds spent for certain management practices between an annual expense item or capital item is as you learned very complex. While each item is a matter of fact and IRS regulation (rather than statute) it would in my opinion be useful to urge the Congress to do all it can to encourage the expensing of these management practices as opposed to their capitalization. This is especially important in the northeast for small landowners because of the short work season, limited capital, and high cost of these practices.

3. Since, as I indicated, the capital gains treatment of stumpage is of prime importance to timberland owners, in encouraging them to retain their timberland ownership and to undertake sound forest management practices, I would urge you to support the treatment of proceeds from the sale of standing timber either as a lump one-time sale or periodic sales as capital gains under Section 1221, 1231 and 631 (a) and (b). I would further urge you to seek the repeal of the minimum tax treatment of such proceeds in the hands of an individual in order to put them on equal footing with the corporation.

4. While the new estate tax law gives considerable relief to the small Maine timberland owner, the new special valuation treatment of farms should be extended to timberlands under management by an agent or professional forest manager. I have enclosed a memorandum prepared toward this point by the F.I.C.T.V.T. people in Washington.

Doug, I recognize I have raised a number of complex and very technical issues and I would be willing to appear before you in executive session to discuss in greater detail my comments (2), (3) and (4). I feel the questions that I've raised in (1) should properly be undertaken by your committee in a session similar to the one that I attended on the 15th.

Sincerely,

Bradford S. Wellman

cc: F. Hutchinson

"P"

COMPARISON OF WITHDRAWAL PENALTIES UNDER THE TREE GROWTH TAX LAW

(Prepared: September 15, 1976)
P.H. Chadbourne Company
Bethel, Maine

The purpose of this memorandum is to illustrate the effect of "withdrawal" under §581 (A & B) of the present Tree Growth Tax Law. For the sake of simplicity, the example is limited to one (1) hypothetical acre although as a practical matter, that acre would have had to have been a part of a much larger parcel.

Assume that the current market value as determined by the Assessors of the town within which the same is located is: $100.00

The town in which the acre is located uses a 100% valuation and a tax rate of .017.

Assume that the State Tax Assessor has, under the Tree Growth Tax Law (§576) determined the 100% valuation of this acre at: $35.00

Assume that this acre was classified under the Tree Growth Tax Law in 1976.

Assume that the fair market value of the acre, if not so classified, would remain at $100.00 until May 1, 1983, and that its 100% valuation under the Maine Tree Growth Tax remained at $35.00 until May 1, 1983.

Two (2) separate examples of withrawal date valuations will be illustrated:

(a) The acre in question is sold to a developer on May 1, 1983 for $350.00.

(b) The acre in question has been prepared for development by the owner himself and thereafter sold as a house site on May 1, 1983 for $3,000.00.

The penalty imposed upon the owner under §581 (A & B), as applied to the foregoing examples, is calculated in this memorandum by applying four (4) different recapture formulas which could be applicable as additional property taxes upon withdrawal.

1. The so-called "(a) formula" contained in 36 M.R.S.A. §581.

2. The so-called "(b) formula" contained in 36 M.R.S.A. §581.

3. The formula which was devised by the most recent Special Session for application to the Farm Productivity and Open Space Land Law in Chapter 726, Sec. 1112, assuming that the same is applied to the Tree Growth Tax Law.

4. The formula which previously existed as 36 M.R.S.A. §591, Farm and Open Space Land Law, prior to the most recent amendment by the Special Session. Again, it is assumed that this formula was used in the Tree Growth Tax Law.

Effect of Application of Tree Growth Tax Law

Were it not for this special tax law as applied to forest lands, the tax rate for the hypothetical acre would be .017 times $100.00, or an assessed tax of: $1.70

Under the Tree Growth Tax Law, the tax is .017 times $35.00, or a tax for the year of: $.60

The annual difference in tax resulting from assessment under the Tree Growth Tax Law is, therefore: $1.10

Over a period of seven (7) years, the net "tax savings" resulting from the imposition of tax under the Tree Growth Tax Law is, before application of the various withdrawal penalty formulas...$7.70.

This "tax savings" of $7.70 for the period of seven (7) years (to May 1, 1983) is constant throughout all of the following examples.

I. WITHDRAWAL UNDER RECAPTURE (a) OF THE TREE GROWTH TAX LAW.

Under this withdrawal formula, the first procedure is to calculate the tax which would have been assessed on April 1st of the year of withdrawal had it not been for the Tree Growth Tax Law.

First example: If one assumes that the fair market value on the date of withdrawal is $350.00, that the town is taxing on the basis of 100%, and the rate equals .017, then the tax would equal .017 times $350.00, or a tax of... $5.95

From that figure, one then subtracts the amount of tax actually paid under the Tree Growth Tax Law, which was $.60, leaving a difference of $5.35. That amount is then multiplied by five (5) (years) which results in the additional property tax penalty of... $26.75

THE WITHDRAWAL PENALTY IS THEREFORE $26.75 PLUS INTEREST IN EXCHANGE FOR A TAX SAVINGS OF $7.70!

NOTE: If one could assume that the fair market value on the date of withdrawal had to be calculated independently of the purchase price to the developer of $350.00 (which occurred subsequent to April 1st), then the fair market value on the date of withdrawal would be $100.00; the withdrawing penalty is then calculated as follows: $100.00 times .017 (being the tax rate), leaving a sub-total of $1.70, less $.60 tax actually paid, leaving a further sub-total of $1.10, times five (5) years, resulting in a total withdrawal penalty of $5.50 plus interest.

Second example: If one assumed that the owner prepared the land himself for development and subsequently sold the acre as a house lot for $3,000.00, then the recapture penalty becomes calculated as follows:

Multiply $3,000.00 (being the fair market value on the date of withdrawal), times .017 (being the tax rate), leaving a sub-total of $51.00, less $.60 tax actually paid, leaving a further sub-total of $50.40, times five (5) years, results in a withdrawal penalty of $252.00, plus interest in exchange of the tax savings of $7.70!

II. WITHDRAWAL UNDER RECAPTURE (b) OF THE TREE GROWTH TAX LAW.

Once again, the regular tax on this acre were it not for special legislation would be $1.70 per year. Under the Tree Growth Tax Law, the tax rate is $.60 per year, leaving an annual tax savings of $1.10 per year, or $7.70 for the seven (7) years.

First example: Using the recapture (b) provision of §581, the withdrawal penalty is calculated as follows. Consistent with the first example, we are assuming that the fair market value on the date of withdrawal is $350.00. $350.00 exceeds the 100% valuation under the Tree Growth Tax Law, which is $35.00, by $315.00. As this property is sold subsequent to March 31, 1983, $315.00 is multiplied by 30%, leaving a withdrawal penalty of $94.50 with no interest in exchange for a tax savings of $7.70.

Assuming that the fair market value on the date of withdrawal were calculated independently of the sales price so that it would continue to be $100.00, the withdrawal penalty would be calculated as follows: $100.00 (being the fair market value on the date of withdrawal), less $35.00 (being the 100% valuation under the Tree Growth Tax Law), leaves a sub-total of $65.00 which is multiplied by 30% for a withdrawal penalty of $19.50 with no interest.

Second example: Where the owner becomes the developer and sells the acre for $3,000.00 and $3,000.00 is determined to be the fair market value on the date of withdrawal, the withdrawal penalty is calculated as follows: $3,000.00 (being the fair market value on the date of withdrawal), less $35.00 (being the 100% valuation under the Tree Growth Tax Law), leaving a sub-total of $2,965.00, which is multiplied by 30%, leaving a withdrawal penalty of $889.50 with no interest in exchange for a tax savings of $7.70!

(NOTE: At this point, it is important to note that §581 requires the assessment of the penalty at the "greater of" the result reached by the two (2) recapture formulas described above. Accordingly, it would appear that a strong case could be made for the imposition of a penalty tax of $889.50 in exchange for a tax savings of $7.70 when the sales price of the acre lot was $3,000.00, regardless of the capital investment required of the owner during the withdrawal year in order to be able to obtain the sales price of $3,000.00.)

III. RECAPTURE PENALTY IF THE WITHDRAWAL FORMULA DEVISED BY THE MOST RECENT SPECIAL SESSION WERE APPLIED TO THE TREE GROWTH TAX LAW.

Under this formula, it is necessary for us to determine the fair market value on the date of withdrawal.

First example: In conformance with prior examples, we will assume first that the fair market value on the date of withdrawal is $350.00. That would exceed the 100% valuation under the Tree Growth Tax Law by $315.00. This figure, in turn, would be multiplied by 20% as it has been classified for more than five (5) years but less than ten (10) years. The net result is $315.00 times 20%, which equals a withdrawal penalty of $63.00 with no interest.

Assuming that the fair market value on the date of withdrawal is calculated independently of the developer's interest, then the withdrawal penalty is calculated as follows: $100.00 (being the fair market value on the date of withdrawal), less $35.00 (being the 100% valuation under the Tree Growth Tax Law), leaving a sub-total of $65.00, which is multiplied by 20%, leaving a withdrawal penalty of $13.00 with no interest.

Second example: Where the owner becomes the developer and sells the acre for $3,000.00, the withdrawal is calculated as follows: $3,000.00 (being the fair market value on the date of withdrawal), less $35.00 (being the 100% valuation under the Tree Growth Tax Law), leaving a sub-total of $2,965.00 which is multiplied by

20%, which leaves a withdrawal penalty of $593.00 with no interest.

It should be pointed out that the withdrawal formula devised by the most recent Special Session is virtually identical to recapture (b) of the Tree Growth Tax Law with the exception that the percentages by which the differences are multiplied are calculated somewhat differently. Under the Tree Growth Tax Law, the percentages are arbitrarily fixed by year. Under the formula devised by the Special Session, the formulas depend on the number of years during which the property was taxed under the protective legislation.

It is suggested that the formula devised by the Special Session is more equitable than that currently contained in §581(b) as it is possible that under the latter, property could be classified under the Tree Growth Tax Law in 1982 and be subject to a 30% withdrawal penalty in 1983 even though tax savings were only accumulated for one (1) year.

IV. WITHDRAWAL "PENALTY" USING THE FORMULA CONTAINED IN FORMER 36 M.R.S.A. §591.

Under this formula, it was necessary to determine the value of the property "at its highest and best use". But unlike the Tree Growth Tax Law which determines fair market value on the date of withdrawal, former §591 determined "highest and best use" "in each of the years

the land was classified". Therefore, prior to the sale to a developer or development and sale by the owner, it is assumed that the "highest and best use" resulted in the assessed actual fair market value of $100.00. Taxes, were it not for the protective legislation, would have been $100.00 times the tax rate of .017, or an annual tax of $1.70. During the years the land was classified under the Tree Growth Tax, the total taxes paid were it not for the protective legislation would have been $1.70 times seven (7) years, or a total of $11.90. From this amount is then subtracted the taxes actually paid under the Tree Growth Tax Law, i.e.: taxes of $.60 per annum for a period of seven (7) years, or $4.20 total. The total tax savings was, therefore, $7.70. That is the amount of the withdrawal penalty plus interest at 8%.

It is to be noted, that of the four (4) different formulas, only the latter formula, which was repealed by the Special Session, is a true recapture plus interest without any penalty.

Prepared for:
P. H. CHADBOURNE COMPANY
Bethel, Maine

INFLUENCES OF PROPERTY TAX AND LAND PRICE LEVELS ON TIMBER MANAGEMENT DECISIONS IN THE NORTHEAST

David B. Field

Yale School of Forestry & Environmental Studies

Introduction

How much does it cost to grow timber in the Northeast? This is something most landowners haven't really had to worry about over many years of low forest land values, relatively low property taxes, and harvests of natural forest stands. Most of us would agree that these days are gone, probably for good. What differences, if any, will the changed property value environment have on timber management decisions?

This paper addresses three issues relevant to this question: 1) How do forest land values and property taxes influence the cost of growing timber? 2) What is the current land value/tax situation in the Northeast? 3) What are the prospects for the future?

Influences of Land Prices and Taxes

Custodial Charges in the Forestry Equation

The profitability of a forestry enterprise, narrowly defined as growing trees for commercial use, depends upon: 1) the value remaining for stumpage prices after final consumer products sales returns have been reduced by the costs (including profit margins) of merchandising, manufacturing, transportation, and logging, and 2) the costs of holding and managing the forest property in question. Thus:

> (Consumer sales) less (merchandising costs and profits) less (transportation costs and profits) less (manufacturing costs and profits) less (logging costs and profits) = (the stumpage price negotiation limit)
>
> (Negotiated stumpage price) less (administration costs) less (carrying costs such as property taxes and interest on borrowed capital) less (management costs such as inventory, development, and cultural activities) less (timber sales costs such as marking, cruising, and scaling) = (the net return to the landowner)

Land prices and property taxes influence timber investment and management decisions in three ways: 1) A prospective landowner must be able to raise the cash price of the land and be financially able to commit that capital for a long period of time. 2) The owner must be able to meet the operating cash flow demands of annual tax levies. 3) The owner must be able to manage the property, if it is to be a profitable venture, in such a way as to generate time-adjusted earnings which will cover his property taxes (and any other custodial charges), cultural activities, sales expenses, and overhead costs and, in addition, return at least as much as could have been realized on an investment of the same capital in an alternative venture. This is a gross oversimplification of a complex matter which, in the case of lands owned by a primary wood processor, for example, should also consider the interactive effects of profitability concerns expressed by both mill and woodland management. It does, nevertheless, highlight the importance of land value and property tax impacts on forest land investment and management decisions. You must have the cash (or equivalent) to buy the land. You must pay your taxes. And you must earn at least enough to cover your carrying costs, even if you don't do anything else but cut the trees when they're mature, or you're foolish to be in the business in the first place.

The Rotation Decision

I believe that most of the theory associated with the influences in question is adequately summed up in the most fundamental timber management decision of all: the optimum rotation. When should you cut the trees? Basically, you maximize dollar returns in a forestry venture by harvesting trees in that year when one more year's maintenance costs would exceed one more year's earnings on growth and/or value appreciation. In reality, of course, estimation of these dollar values requires a combination of expert judgement and a gambler's instincts, but the theoretical impacts of land prices and taxes hold despite fluctuations in rotation determinants.

Pearse's (1967) familiar analysis shows that a typical ad valorem tax on land and timber will cause the marginal cost of holding a tree for one more year to equal the marginal value to be gained by an added year's growth at an earlier age than would be the case in the absence of the tax, thus shortening the optimum economic rotation age. The larger this tax burden, the greater will be the incentive for "premature" stand liquidation. A severance tax, on the other hand, or a tax levied on annual site value, would reduce net returns from the enterprise but have a neutral effect on management decisions. Of course, an annual tax greater than the annual equivalent of the site value would be confiscatory.

McKillop (1971) has criticized the approach taken by Pearse and earlier workers, which followed the basic pattern of Martin Faustmann's classical study, because of its assumption of an unending series of rotations with identical cash flows. He argued that a better procedure, as emphasized by Haley (1966), is to estimate the market value of the cut-over tract at the end of the rotation and use that value in the rotation decision. Under this approach, rising land prices will tend to encourage longer rotations so long as the percentage increase in land value exceeds the cost of capital (interest rate) being used in the analysis.

The importance of these theoretical arguments has been noted by many authors, from the time of the Fairchild report (1935) to the present day. An ad valorem tax tends to shorten the optimum economic rotation of a deferred yield property. The higher the land value, the higher the tax. The higher the tax, the shorter the rotation.

Authorities on forest land taxation have generally argued that the ad valorem tax is inherently biased against deferred-yield investments and weighs more heavily against sustained-yield timber management than against liquidation cutting. Many special relief measures have been proposed, and a number tried, to prevent the poor forest management supposed to result from this. Perhaps the only dissenting view is that of Richard Trestrial (1969), who argued that timber growth occurring between stand establishment and cutting is not deferred income at all but, rather, automatically reinvested annual income. Property taxes discourage all real investment, hence the general property tax does not impose an unfair burden on forest lands as such. Indeed, he suggested, the automatic reinvestment feature favors forest properties over those on which income must be received (and taxed) each year.

Current Market Prices for Forest Lands

I expect that most of you have your own favorite stories about current trends in forest land prices. We can take some heart in the knowledge that matters are generally even worse in the South and the Pacific Northwest.

To begin at one extreme, in southern Connecticut, a parcel of attractive woodland in a house lot development on the urban fringe may sell for as much as $10,000-$15,000/acre. Clearly, the "highest and best" use of such land, at least from the viewpoint of the seller, is not forestry. Moving north through New England you will find widely varying but generally decreasing land prices. In the exurban ski lodge developments of western Maine, camp lot prices of $1500-$2000/acre are not uncommon. In eastern Quebec, I am told, the absolute peak of forest land (for timber management) prices is around $300/acre for fully-stocked, high-quality hardwood stands.

My most complete recent knowledge is of going rates in Maine. During 1975, 28 parcels of woodland scattered over the southern half of the state, averaging 90 acres in size, were advertised in popular periodicals (The Maine Times, Downeast Magazine) at a weighted average price of $176/acre. The parcels totaled 2532 acres, with the largest (250 acres) advertised at $155/acre and the smallest (12 acres) at $325/acre. These were asking prices clearly aimed at persons seeking recreational and/or speculative acreage, and should not be taken as typical of commercial timberland values. Should not, that is. Local assessors often fail to make the distinction (see Cooper and Worrell, 1971).

Large parcels of forest land in Maine were exchanged during the latter half of the 1960's for as little as $30/acre, two or three times greater than the prices of many transactions in the previous decade, but nothing compared to values resulting from the sudden escalation of the 1970's. Prices for stocked timberland have ranged up past $100/acre to recent sales as high as $150.

Current Tax Levels

As noted earlier, absolute land values bear strongly on decisions to acquire or dispose of lands. Once timberland is acquired, the crop must not only return more than the opportunity cost of the property but must also cover the current cash demands and economic burden of annual property taxes.

Suppose a southern Connecticut entrepreneur decides not to build a house on his $10,000/acre lot but to raise red pine instead. At ($10,000/acre) X (a 65% valuation ratio) X (a .58 mill rate) his trees would not only have to cover the annual interest on his investment (say $600) but $377 in annual taxes as well. Being generous and ignoring compound interest, we see that a 30-year-old stand valued at $40/MBF would have to yield about 733 MBF/acre to cover taxes plus the assumed 6% cost of capital, or 283 MBF/acre just to pay the taxes! (In fact, bona fide Connecticut forest land classified under the Open-Space Law is assessed at around $25/acre which, in the suburban town where I live, would bear a tax burden this year of 94¢/acre.)

Lands in western Maine which carried a tax of 10¢-20¢/acre two decades ago are now taxed at an average of 50¢/acre. Taxes on forest land adjacent to housing and recreational developments in Vermont, a state with no forest property tax relief law, are reported to attain levels of $2.00-$10.00/acre/year (Foulds, 1973). Private land within a town located in New York's Adirondack Preserve is reported to have been taxed at $3.50/acre, and to have an annual timber yield value of only 50¢/acre (Stock, 1973). At a $2/acre annual tax (interest ignored), our Connecticut tree farmer would have to

realize a yield of only 1.5 MBF/acre at $40/MBF after 30 years in order to just cover his taxes. Of course, having cleared this hurdle, he might begin to worry about earning a modest return on his investment as well, in which case he would be subject to income taxes (but at capital gains rates, at least). Again, it may be of some comfort to know that under Oregon law, some owners of tracts larger than 1000 acres are paying annual taxes of $8-$12/acre (Foulds, 1973).

Current State Forest Tax Laws

New York and five of the six New England states have special laws relating to the taxation of forest properties. The laws were motivated by desires to promote good forest management and/or to preserve open space. They include yield taxes and modified assessment procedures, the latter including present use valuation and, in one case, a site value assessment. The following brief summaries are based mostly on recent (1974,1975) Timber Tax Journal reviews and include only the most significant laws in each state.

Connecticut

Connecticut's optional "Open Space Law" (P.L.490,1963, amended 1973,1974) calls for a modified assessment of classified forest land at the present true and actual value of the tract (land and timber), based upon its current use without regard to neighborhood land use of a more intensive nature. To qualify, tracts must aggregate 25 acres or more and be approved by the State Forester. If the property is sold within ten years of classification, the owner is subject to a conveyance tax on a sliding scale of 10% to 1% of the total sales price. Connecticut also has an optional yield tax applicable to forest lands of at least 25 acres with a land value not exceeding $100. The law limits the tax rate on forest land and taxes harvest yields on a sliding scale over a fifty-year period.

Assessors have repeatedly challenged the modified assessment law and have consistently lost in court. Some local variation continues nevertheless, including a tendency to assess forest lands under active management somewhat higher than those that exist largely by default (as in the case of wooded portions of a farm property). Despite the apparent advantages of the Open Space Law, as of 1973 only some 10% of the eligible owners had had their lands classified (Foulds, 1973).

Maine

Maine's "Tree Growth Tax Law" (1972, amended 1973) requires a modified assessment of forest lands according to the value of the land for growing timber. These site values

are established by the State Bureau of Property Taxation as capitalized (at 10%) net annual returns based on average growth rates for each county and average stumpage values for each of three broad forest types (hardwood, softwood, and mixed wood). Taxes are levied by local assessors at prevailing millage rates applied to these assessed values. Temporarily reduced valuations may be granted for forest lands with low stocking due to harvest or natural disaster.

The Tree Growth Tax Law is mandatory for all parcels of more than 500 forest land acres and optional for parcels of 10 to 500 acres. I have no separate statistics on registration of smaller parcels, but some 10 million acres of forest land in Maine's unorganized territory was said to be classified as of 1974 (Timber Tax Journal, 1974). Lands registered under this law must be used primarily for the growth and production of forest products. Declassification of lands subjects the owner to a penalty of net taxes foregone due to the classification, plus interest, or a one-time tax based on a percentage of the difference between the fair market value of the tract at the time of withdrawal and the taxable value under the Tree Growth Tax Law.

Massachusetts

Massachusetts' optional "Forest Tax Law" (1941, amended 1943,1955,1969) imposes an 8% yield tax on the stumpage value of all forest products cut from classified land. In addition, the owner is subject to an annual tax at current millage rates on a valuation of the land itself, said valuation not to exceed $10 per acre. Income from classified forest lands is exempt from the state's income tax. To qualify for this treatment, tracts must aggregate 10 or more acres, be valued at less than $400 per acre (inclusive of timber), not be used for purposes inconsistent with planned and managed forest production, and be certified by the State Forester. A tax on the payments avoided through classification, plus 8% interest (but not to exceed $200 per acre), is imposed upon the owner in the event of declassification.

Foulds (1973) has estimated that 20% of the two million acres of commercial forest lands in Massachusetts (owned by 29,000 people) are under the level of management that would qualify for classification. Of these, only 30,000 acres (about 240 owners) have been placed under the law.

New Hampshire

New Hampshire has both a mandatory yield tax law (195 amended 1959, 1961, 1963, 1975) and an optional modified assessment law (the "Current Use Assessment Law" of 1973, amended 1975). The yield tax, applicable to purchases of stumpage from public forests as well as to private lands,

imposes a levy of 10% of assessed stumpage value. Bare forest land remains subject to the general property tax, as does mature timber which, when withheld from the market, "unreasonably" deprives a town of tax revenue.

The Current Use Assessment Law, designed to preserve open space, uses an advisory board procedure for recommending assessment schedules. The current schedule suggests a range of $20 to $35 per acre for forest land, with a 20% reduction for such land which is involved partially in recreational or other public uses. Valuation within the range is based on forest types. To qualify under this law, a tract must contain at least ten contiguous acres (or be a "Certified Tree Farm"), be used primarily for the growing and harvesting of repeated forest crops, and support a reasonable stand of timber (or be under active management towards that end). If a tract is declassified, the owner is subject to a "land use charge tax" of 10% of full property tax value.

New York

New York currently has two optional yield tax laws which incorporate some modified assessment features. The older law ("Fisher Forest Tax Law") still applicable to lands classified before September 1, 1974, includes a separate taxation of bare land value (exclusive of timber values), an assessment ceiling, and a 6% yield tax on stumpage receipts. The new law applies to properties classified on or after July 1, 1976. Under this law, the state annually determines a per-acre "forest land value" based on average actual values which apparently include both timber and bare land. This value, adjusted by appropriate regional equalization rates, and applied to the tract in question establishes a "forest land value ceiling". That portion of the assessed value of a certified tract which exceeds this ceiling is exempt from real property taxation. Timber harvests are taxed at 6% of stumpage receipts.

To qualify for classification, a tract must contain at least 25 acres of land devoted to the production of timber products and be approved by the Department of Environmental Conservation. The owner must certify that the property will be so used for a minimum of eight years. The D.E.C. may direct an owner to harvest tracts containing an average of 15 MBF of merchantable timber per acre. Failure to do so within two years of notification implies conversion to a non-timber use and subjects the owner to roll-back penalties consisting of the applicable tax rate for each of the five preceding years applied to the excess (over the ceiling) valuations of those years.

Lands classified under the older law may retain that classification or be reclassified under the new law. Lands declassified under the old law subject the owner to a penalty of 6% of the value of the standing timber.

Rhode Island

Rhode Island has an optional exemption law (1878, amended 1908,1965) which relieves both land and timber of plantation land from taxation for 15 years after a planting operation. To qualify, the tract must be less than 300 acres in size, be worth not more than $25 per acre, be planted with at least 500 trees per acre of species named in the Act, and be approved by the Director of the Department of Natural Resources.

The state also has an optional modified assessment law (1968) which provides for the valuation of classified forest lands according to current use, without regard for values of more intensively used neighborhood lands. Adequate forest cover and deliberate management as forest land, approved by the Division of Forest Environment, are necessary for designation under this law. Lands which are declassified subject the owner to roll-back taxes equal to the differences between the taxes actually paid for the current and two preceeding years and those that would have been paid had the lands not been classified.

Vermont

Vermont has no special tax laws pertaining to forests or forest lands. The matter is under active review.

Prospects for the Future

About 10 years ago in New Haven, Ellis Williams (1965) gave a Yale Industrial Forestry seminar a look ahead at property tax trends. Some of the more radical issues being faced then included Federal revenue sharing to ease local property tax burdens and the decline of rural political power with the rise of the one-man, one-vote principle. It's interesting to note Williams' quote from Governor Anderson of Kansas, a member of the Advisory Commission on Intergovernmental Relations, that "Federal revenues are likely to outstrip budgetary needs in the next few years."

This is not an easy (or safe) day and age in which to make economic forecasts. Much of the pressure on land prices in recent years has been due to the holding of land in anticipation of future price increases, so that the small amount being traded has commanded artificially high market values. These high values have had a disproportionate effect on the tax valuation of all land. The relation of speculative reservations to economic supply is a debatable one, of course. It can be argued that speculation is itself a normal economic phenomenon. But speculation can be regarded as an aberration of the free exchange market presumed by "highest and best use" assessment for tax purposes. Not only do speculative values often not reflect the true value of the land in use or in the

owner's views, but one can seriously question the validity of assessing a large mass of land which, if dumped on the market all at once, would no doubt destroy that price structure, according to the high value of a relatively few parcels traded. The impact of assessment practices is becoming more serious. Especially in remote areas, ad valorem taxes have for many years been a minor burden because local assessors have used common sense in applying the law to tax at "highest and best use". But this is changing. Needs for more revenue and the increasing complexity of applying assessment guidelines designed to provide equitable treatment are leading to increased use of outside, professional assessors who tend to apply the letter of the law (see Demeree, 1974).

Real (as opposed to speculative) determinants of forest land prices originate in demands, both consumptive and non-consumptive, for the products of such land, and on trends in the costs of providing and/or enjoying those products. Among the more obvious and volatile influences on land prices and taxes over the next few decades are: 1) basic demands for wood and wood-based products, 2) land use regulation activities, 3) changing public and legal attitudes towards the rights of private landownership, 4) availability of fuels for recreational travel and commercial transportation, 5) changing public attitudes towards the relative importance of exploitive versus preservative uses of renewable natural resources, and 6) the economic valuation of renewable raw materials in comparison with non-renewable substitutes. I will comment on each of these briefly, in turn.

1. Demands for housing, household products, and paper products account for about 70% of the timber harvested annually in the United States. Recent projections of the primary housing market foresee high-level demand continuing until the late 1980's, despite periodic disruptions of production due to short-term credit cycles (Marcin, 1974). A severe decline is expected by 1990 because of recent birth trends. Second home demand, on the other hand, should decline somewhat in the immediate future, then return strongly in the 1990's. In the paper sector, it seems reasonable to assume not only that domestic requirements will continue to be high but also that rising world literacy rates and living standards will generate increasingly strong export possibilities.

2. Land use regulation, though certainly not beyond criticism, has surely reduced upward pressures on forest land prices from residential and recreational development activities. I expect such regulation to continue and to expand. There is clearly a need in many areas to combine property tax reforms with such regulation to ensure equitable treatment of both taxpayers and local communities.

3. I believe that there will be continually more serious challenges of some of our more fundamental notions of real

property rights. Arguments over fine distinctions between social control of private property and a legal "taking" of that property may well produce definitive, possibly startling results within the next decade. At the very least, we should expect to see rulings on casual access to and non-destructive use of wild lands by recreationists versus the landowner's rights to regulate and charge for such uses.

4. We are going to run out of gasoline. Whether technological breakthroughsin areas of alternative energy supplies will occur in time to forestall a severe restriction of recreational travel is extremely difficult to predict. I won't attempt to do so. Nor will I attempt to predict the prospects for commercial transportation, but don't sell all of your river-driving equipment as antiques just yet.

5. I believe strongly in the developing strength of the general public's belief in the relative merits of encouraging uses of renewable natural resources, and in the impact of this belief on preservative restrictions of commercial timberland.

6. I believe that economic pressures alone will continue to erode the competitive position of wood substitutes manufactured from non-renewable resources. This erosion may well be accelerated by public recognition of the desirability of conserving those non-renewable resources for more important uses than they represent in the form of wood substitutes.

In sum, I believe that for the near future both speculative and non-consumptive land price pressures will tend to decline, but real prices for forest land for timber production will increase in the face of a steady improvement in the demand for wood-based industrial and consumer products. Assessment of land values for property taxes will probably become more exacting and adhere more closely to the law, with less opportunity for subjective adjustment. Whether or not this will bear more heavily on the costs of growing timber depends on the degree to which equitable treatment of forest properties as such, and the public's desire for open space, compared with its need for operating revenue, will lead to improvements in the property tax laws affecting forest resources.

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The Principles of Growing Trees Rapidly

Alan C. Page

The discussion of growing trees among foresters has many facets. The ones I would like to consider today concern the production of wood on a central stem of a tree presently in existence and of sufficient height that one can judge something of the genetic makeup and past history of that particular stem.

The group of decisions that make up the management regime for a particular acreage will be the focal point of this consideration of tree growth. These decisions will be covered in the following sections:

1. Economic Bases for Investment in Rapid Tree Growth
2. Materials and Methods Associated with Intensive Culture
3. Problems Associated with Rapid Tree Growth
4. Frames of Reference for Analysis of Different Options

The Economic Bases for Investment in Rapid Tree Growth

Tree growing is a long-term enterprise no matter what the crop. Normal planning periods for business rarely extend beyond five years, yet this is the shortest possible period for consideration in growing trees. It is essential therefore that economics be carefully considered in any such endeavor. Three areas of concern are paramount to the success of such an endeavor:

1. The price at which the commodity being produced will be sold, at some time in the future, must be known with some degree of certainty. It is essential to HEDGE the price of the product in some manner: a long term contract with a reliable firm, having one's own production facilities, or some market instrument which would do the same thing.
2. A market must be expected for the product at the time that it is mature. This is especially true if the HEDGE is not related to an actual market for this particular product.

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REACHING THE SMALL OWNER

Speech By:
Hugh Putnam, Jr., Resident Foreste
New England Forestry Foundation
242 Highland Street
Milton, Mass. 02186
Phone: (617) 696-2885

EVALUATION OF THE FOREST IMPROVEMENT PROGRAM

It seems pretty obvious that if this part of the country is going to maintain, or increase its position as a wood producing area, then a great deal of reliance will have to be put on the small wood lot owner. This owner will have to be persuaded, first, to hold on to his land, and then to manage it as efficiently as possible. (Some states have taken very positive steps towards helping woodlot owners cope with the high cost of holding their land, while others are lagging far behind. This subject, however, is not our topic today - but it bears heavy consideration for the future.)

What is this small woodlot that we are concerned with? The average size of our clients in Eastern Massachusetts runs about 100 acres. Most of these lots are owned by absentee land owners, and many, if not most of them, have usually had very little management work occurring on them. Thus, these lots are usually over-stocked with trees, ranging in size from timber to brush coming up in old fields.

An owner usually gets interested in his woodlot, because he becomes aware of timber on it that has finally matured. This is the easiest way to begin a management program, but, by itself, it does not necessarily lead to an active, or proper management program. Unsupervised cutting tends to hi-grade a forest, leaving a poor stand behind. Even with a well supervised, carefully marked sale, the residual stand will still need some work. What this work consists of and how carefully it is carried out will determine how productive this woodlot will be over a long period of time.

The first step in up-grading a forest is to carry out a good improvement program. This means eliminating trees that are, for one reason or another, competing with better, more valuable trees. If a landowner is already carrying out a timber sale, he has cash with which to finance this project. If he is not cutting timber, then he must find cash elsewhere. Regardless of where the cash comes from, it can probably be said that only with help from the federal cost sharing program will most improvement work be done today. (Only once in ten years have I had a client who was willing to cover all the expenses himself - yes, he was wealthy, and thus, he did not have to get involve with all the paper work that goes along with this program. And this is what, in the final analysis, makes the cost sharing program so hard to work with - there is simply too much paper work and confusion, from one year to the next.)

So the stage has been set. As I see it the federal cost sharing program, be it FIP, REAP, or whatever else may come along next year, is a very important program for small woodlot owners, but, somehow it would be helpful if it could be streamlined so as to make it less confusing and more easily implemented.

The basic structure of the program here in Massachusetts has six stages:

1. The owner must sign up with the local Agricultural Stabilization and Conservation Service (ASCS);
2. A management plan must be prepared for the state forester, so that the area can be inspected;
3. The area is inspected by the state forester, before work commences;
4. If the vendor is to be paid directly by the ASCS office, a second form must be signed by the owner and the vendor;
5. With the work completed, the state forester must be notified, along with the ASCS office; and
6. Another form must be signed by the owner signifying that the work was completed.

Now, on paper, these steps sound very straight forward, and easy to understand. However, when one considers all the forms and mailings and people that are involved, it becomes obvious that tremendous problems can arise. (And let me add here, that I am not pointing the finger at any particular individual for the short comings of the program.)

The biggest headache we have had over the past two years is whether or not federal funds were going to be available at all. This meant a delay in getting landowners signed up, followed by a tremendous rush at the end of the year to get the work completed on time. In past years, my experience, in Vermont, has been that sign up for a given year was always carried out in the fall of the previous year. Thus, we had a clear picture of what to expect by the time the new year arrived. This system has got to be reinstated if we are going to streamline the program.

A second problem is the amount of paper work that is necessary. Form 245, which actually is in two forms, must be signed before the work starts and then when the work is completed. If the vendor is to be paid directly, then form FIP - 16 must be signed. If an extension is asked for, at the very least, a letter is sent from the ASCS office the client, which usually results in a letter, or call, to the vendor from the client. It seems to me that all three of these necessary forms could be replaced by one form similar to what the Tree Farm application looks like. By having multiple copies of the form, one copy could be signed and sent in for each phase of the job. Thus, much time could be saved that would otherwise be lost in explaining to the client exactly what is happening whenever a new form arrives in the mail. (And some of you may be very surprised at how confused a doctor, lawyer, or teacher can get when confronted with these different forms.)

A third problem, which bothers the vendors the most, is the wide discrepancies in how all the paper work is handled. One county may send the original form 245 to the client and then to the vendor (but if the client is not on his toes, he usually routes it back to the ASCS office instead of the vendor). Another county will send the form to the vendor first and then to the client. In some states the sign up of work is handled by committees, while in other states it is handled by the state forester or the vendor. If the sign-up procudure is fouled up, then letters back and forth are sure to foul up the situation even worse.

Once the paper work has been taken care of, the work can begin. Here we get the greatest chance for complete waste of time and energy, as occasionally the work

is never completed. In this case we are looking at the situation where the landowner has the state forester mark the trees to be removed but, somehow, the landowner never gets around to carrying out the work. State foresters are way overworked as it is, so that when this situation arises, it has to frustrate them, while at the same time locking up federal funds which usually do not get freed until late in the year. At that point, and under the present system, vendors are given more clients at a time when working conditions are deteriorating, summer help has gone, and extensions must be sought.

The obvious way to eliminate this problem is to have vendors do all the work. This would ensure that work signed up for was actually completed. If this seems a bit too austere a method, then perhaps those landowners who wish to carry out the programs themselves could have an earlier deadline, July or August, thus giving more time to react if the work does not get completed.

It may seem, at this point, that I am over-reacting to some of the shortcomings of this program. Far from it. What I have been discussing are procedural problems which only make life a bit more interesting for all of us. I am sure that some of these problems can be eliminated, but until that time, I am not overly worried about the present program.

On the positive side, briefly, it must be pointed out that the program is now being administered on a priority basis, which is an excellent idea. (Although, frankly, I had always assumed that the better stands would be treated first anyways.) Thus, only those stands which are obviously producing at a realistic rate will be covered by the program. My only thought here is that occasionally the quality of a wood lot will vary tremendously from one acre to the next. Thus, when laying out ten acres of work, sometimes it is necessary to cover a small area that, by itself, might not qualify. I feel very justified in working on these areas, as sooner or later the work is bound to improve the trees.

It must also be emphasized, again, that without this program, most of our young stands would probably have to depend on Mother Nature to take care of the improvement work. Some people might say this is fine, but if we are to produce valuable trees for the future, we must give Mother Nature a boost. The federal cost sharing program, with all of its short comings, is really the only good method of accomplishing this. I once heard it compared to the soil bank program, whereby land is set aside and taken care of for future crops. This is exactly what the cost sharing program is allowing the small woodlot owner to do. Without it the value of our woodlots would be greatly reduced and our lumber production would decline, something none of us here want to see happen.

(END)

Hugh Putnam, Jr.
January, 1976

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AVERAGE ANNUAL NET WOOD PRODUCTION RATES, AVERAGE STUMPAGE VALUES AND 100% VALUATION PER ACRE BY COUNTY BY FOREST TYPE TO APPLY FOR TAX YEARS 1975 AND 1976

COUNTY	SOFTWOOD FOREST TYPE			MIXED WOOD FOREST TYPE			HARDWOOD FOREST TYPE		
	AVG. ANNUAL NET WOOD PRODUCTION ($ft.^3/ac$)	AVERAGE STUMPAGE VALUE ($/ft.^3)	100% VALUATION PER ACRE ($)	AVG. ANNUAL NET WOOD PRODUCTION ($ft.^3/ac$)	AVERAGE STUMPAGE VALUE ($/ft.^3)	100% VALUATION PER ACRE ($)	AVG. ANNUAL NET WOOD PRODUCTION ($ft.^3/ac$)	AVERAGE STUMPAGE VALUE ($/ft.^3)	100% VALUATION PER ACRE ($)
Androscoggin	49.6	.0841	41.70	33.0	.0776	25.60	14.8	.0608	9.00
Aroostook	44.4	.0800	35.50	34.3	.0739	25.30	17.0	.0626	10.60
Cumberland	39.4	.0868	34.20	25.6	.0781	20.00	11.3	.0628	7.10
Franklin	44.1	.0771	34.00	29.0	.0731	21.20	16.5	.0666	11.00
Hancock	33.4	.0767	25.60	22.3	.0686	15.30	10.9	.0505	5.50
Kennebec	34.4	.0849	29.20	21.2	.0736	15.60	12.6	.0595	7.50
Knox	30.4	.0845	25.70	21.9	.0735	16.10	15.9	.0541	8.60
Lincoln	29.9	.0843	25.20	22.6	.0735	16.60	13.1	.0544	7.10
Oxford	43.1	.0770	33.20	29.7	.0717	21.30	16.3	.0675	11.00
Penobscot	41.8	.0703	29.40	30.2	.0666	20.10	14.7	.0571	8.40
Piscataquis	53.9	.0801	43.20	34.1	.0768	26.20	20.5	.0698	14.30
Sagadahoc	45.0	.0893	40.20	26.5	.0789	20.90	14.5	.0621	9.00
Somerset	49.8	.0918	45.70	28.9	.0826	23.90	17.5	.0669	11.70
Waldo	29.8	.0842	25.10	22.6	.0735	16.60	14.5	.0552	8.00
Washington	33.2	.0714	23.70	32.0	.0647	20.70	9.3	.0527	4.90
York	37.7	.0870	32.80	25.4	.0776	19.70	11.1	.0631	7.00

Prepared by the Bureau

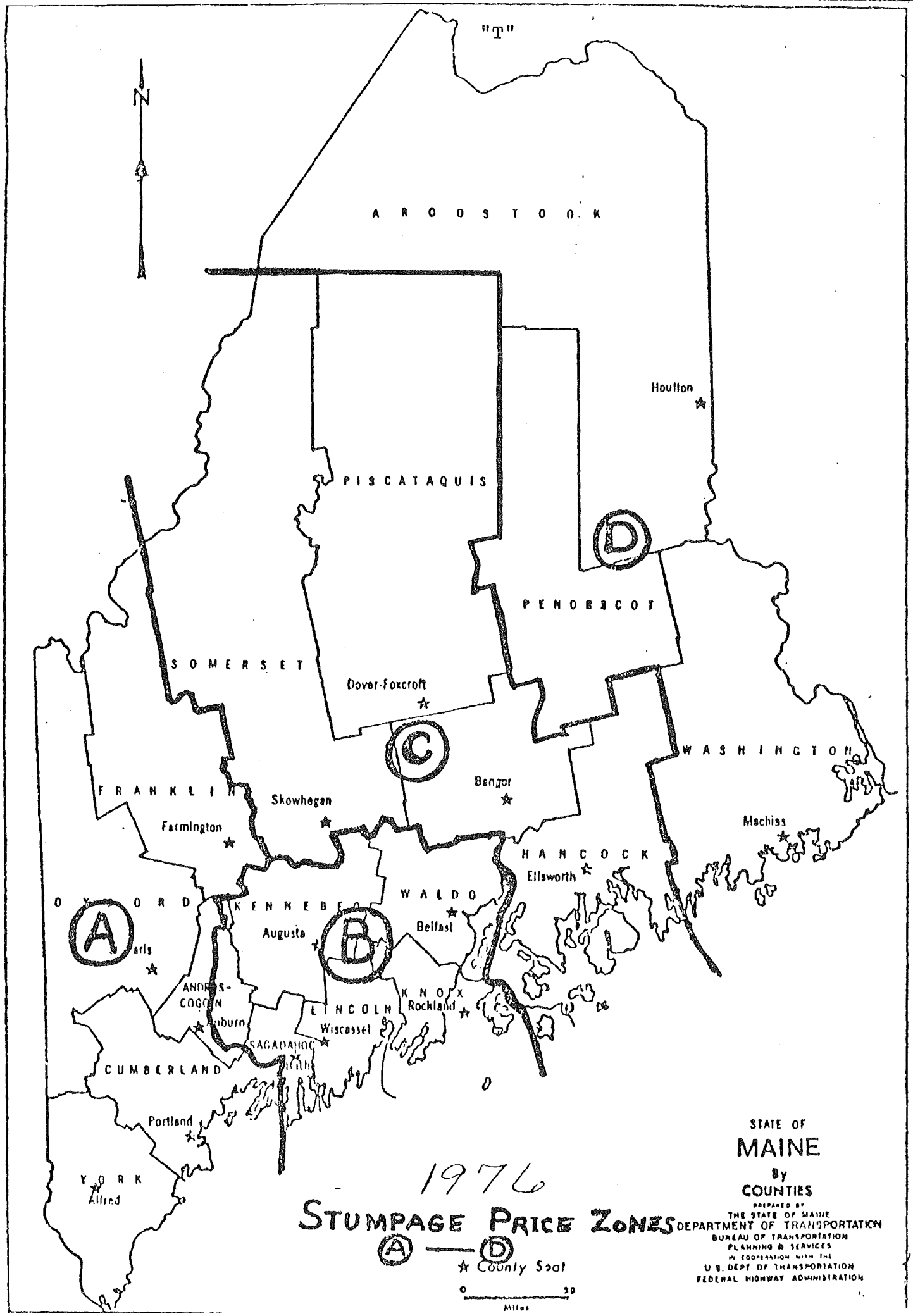
"S"

MAINE FOREST PRODUCTS COUNCIL
146 State Street
Augusta, Maine 04330

1975 TIMBER CUT PER ACRE AND STUMPAGE INCOME FROM MAINE'S COMMERCIAL FOREST

County	Commercial Forest Acres	Cut per Average Acre in Cords	Weighted Average Gross Stumpage Income per Cord Cut (All Products)	Weighted Average Gross Stumpage Income per Average Acre of Commercial Forest
Androscoggin	228,300	.26	$10.83	$2.80
Aroostook	3,879,000	.22	9.66	2.14
Cumberland	430,600	.20	10.49	2.07
Franklin	994,100	.21	9.18	1.92
Hancock	908,900	.11	9.24	.98
Kennebec	390,000	.20	9.29	1.85
Knox	165,600	.21	6.72	1.44
Lincoln	217,400	.18	5.82	1.07
Oxford	1,168,400	.32	10.57	3.36
Penobscot	1,994,400	.22	8.45	1.86
Piscataquis	2,403,800	.30	7.83	2.35
Sagadahoc	130,300	.14	5.74	.80
Somerset	2,326,900	.20	8.84	1.73
Waldo	359,200	.17	7.87	1.35
Washington	1,510,400	.29	7.52	2.16
York	498,900	.12	11.88	1.45
Maine (1975)	16,894,300	.24	$8.88	$2.11

May 26, 1976


"T"
N
AROOSTOOK
Houlton
PISCATAQUIS
D
PENOBSCOT
SOMERSET
Dover-Foxcroft
C
WASHINGTON
Bangor
FRANKLIN
Skowhegan
Farmington
Machias
HANCOCK
Ellsworth
OXFORD
KENNEBEC
WALDO
Belfast
A
Augusta
B
Paris
ANDROS-
COGGIN
Auburn
KNOX
Rockland
LINCOLN
Wiscasset
SAGADAHOC
CUMBERLAND
Portland
YORK
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1976
STUMPAGE PRICE ZONES
A — D
☆ County Seat
0 20
Miles
STATE OF
MAINE
By
COUNTIES
PREPARED BY
THE STATE OF MAINE
DEPARTMENT OF TRANSPORTATION
BUREAU OF TRANSPORTATION
PLANNING & SERVICES
IN COOPERATION WITH THE
U.S. DEPT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

MAINE DEPARTMENT OF CONSERVATION
BUREAU OF FORESTRY
FOREST MANAGEMENT DIVISION
AUGUSTA, MAINE 04333

FACTORS INFLUENCING STUMPAGE PRICES FOR FOREST PRODUCTS

Stumpage prices are influenced by a number of factors such as the following

1. Percentage of the timber species in the area
2. Volume to be cut per acre
3. Size of average tree to be cut
4. Timber quality
5. Logging terrain
6. Distance to public roads
7. Type of logging equipment
8. Season of year
9. Woods labor costs
10. Landowner needs
11. Capital gains aspects of Internal Revenue Code
12. Market demand
13. Distance to market
14. Property taxes
15. End product of manufacture
16. Landowner knowledge of market value

Any one of the above factors can have a significant effect on stumpage prices for a species, while another factor may have an insignificant effect in a particular area.

MAINE FOREST SERVICE
Utilization and Marketing
Augusta, Maine

AVERAGE MAINE STUMPAGE PRICES - ZONES A, B, C, & D

Compiled from information submitted by Service Foresters on or before Oct. 4th, 1976

LOGS (MBF, Int. ¼" Rule)

	Lowest	Highest	Most Common
White Pine	$ 30	$ 51	$ 41
Red Pine	25	41	32
Pitch Pine	20	34	26
Hemlock	21	31	27
Spruce	26	43	35
Fir	28	43	34
Cedar	18	22	20
Tamarack	24	41	30
White Birch Veneer	39	62	52
White Birch Sawlogs	43	62	52
Yellow Birch Veneer	38	48	43
Yellow Birch Sawlogs	42	74	52
Hard Maple Veneer	-	-	40
Hard Maple Sawlogs	34	43	41
Oak Veneer	-	-	-
Oak Sawlogs	38	62	52
Beech Sawlogs	25	31	28
Aspen Sawlogs	20	29	24
Basswood	28	33	30
Elm	26	34	30
Soft Maple	23	34	29
White Ash	43	74	57
Hardwood Veneer	-	-	20

Consult your nearest Service Forester for up-to-date prices

BOLTWOOD (Cord)

White Pine	3.00	4.50	4.00
Red Pine	4.00	4.00	4.00
Spruce	8.00	12.00	10.00
Cedar	5.00	8.50	6.50
White Birch	17.50	28.50	24.50
Yellow Birch	18.75	27.00	24.00
Hard Maple	16.50	21.75	18.00
Oak	9.50	15.00	14.00
Beech	8.50	10.00	9.00
Aspen	6.00	7.00	6.50
Soft Maple	7.25	8.00	8.00
White Ash	15.50	20.50	20.00

PULPWOOD (Cord)

White Pine	2.50	4.00	3.25
Red Pine	2.00	4.25	3.50
Hemlock, Rough	3.25	5.75	4.25
Spruce-Fir, Rough	5.75	8.75	7.25
Tamarack	3.25	6.00	5.25
Aspen, Rough	2.75	4.50	3.75
Other Hardwoods, Rough	3.00	4.75	4.00

MISCELLANEOUS

(Put unit of measure under "Comments")

Cedar Posts	-	-	6.00	Cord
" Utility Poles	-	-	-	
" Cabin Stock	20.00	20.00	20.00	MBF
" Shingle Stock	13.00	20.00	18.00	MBF
" Fence Stock	5.75	6.50	6.00	Cord
Red Pine Utility Poles	-	-	-	
Piling - Species _____	-	-	-	
Firewood	3.25	5.50	4.50	Cord
Sawdust	1.00	6.00	5.00	Pick-up Load
Pine Shingle Stock	1.00	5.00	2.50	Cord

MAINE FOREST SERVICE
Utilization and Marketing
Augusta, Maine

STUMPAGE PRICES - ZONE A

Compiled from information submitted by Service Foresters on or before Oct. 4th, 1976

LOGS (MBF, Int. ¼" Rule)

	Lowest	Highest	Most Common
White Pine	32	63	49
Red Pine	21	39	32
Pitch Pine	20	34	26
Hemlock	21	35	30
Spruce	26	44	36
Fir	28	45	35
Cedar	-	-	-
Tamarack	23	33	30
White Birch Veneer	-	-	-
White Birch Sawlogs	50	59	54
Yellow Birch Veneer	-	-	-
Yellow Birch Sawlogs	55	80	65
Hard Maple Veneer	-	-	-
Hard Maple Sawlogs	47	52	52
Oak Veneer	-	-	-
Oak Sawlogs	43	65	58
Beech Sawlogs	34	40	39
Aspen Sawlogs	18	30	20
Basswood	40	45	45
Elm	30	30	30
Soft Maple	26	41	34
White Ash	47	64	54
Hardwood Veneer	-	-	-

Consult your nearest Service Forester for up-to-date prices

BOLTWOOD (Cord)

White Pine	3.00	4.50	4.00
Red Pine	4.00	4.00	4.00
Spruce	-	-	-
Cedar	-	-	-
White Birch	20.00	32.00	25.00
Yellow Birch	20.00	32.50	27.50
Hard Maple	14.00	17.50	14.00
Oak	5.00	10.00	10.00
Beech	9.00	11.00	9.50
Aspen	-	-	-
Soft Maple	-	-	-
White Ash	-	-	-

PULPWOOD (Cord)

White Pine	2.00	4.50	3.00
Red Pine	2.00	4.50	3.00
Hemlock, Rough	2.75	5.00	3.50
Spruce-Fir, Rough	3.75	7.00	5.50
Tamarack	3.50	6.00	4.75
Aspen, Rough	2.50	5.00	4.00
Other Hardwoods, Rough	2.75	5.00	3.75

MISCELLANEOUS

(Put unit of measure under "Comments")

Cedar Ties/Posts (Circle)	-	-	-	
" Fence Stock	-	-	5.00	Cord
" Cabin Stock	30.00	30.00	30.00	MBF
" Shingle Stock	-	-	5.00	Cord
Pine Shingle Stock	1.00	5.00	2.50	Cord
Red Pine Utility Poles	-	-	-	
Piling - Species _____	-	-	-	
Firewood	3.00	5.33	5.33	Cord
Sawdust	1.00	6.00	5.00	Pick-up Load

MAINE FOREST SERVICE
Utilization and Marketing
Augusta, Maine

STUMPAGE PRICES - ZONE B

Compiled from information submitted by Service Foresters on or before Oct. 4th, 1976

LOGS (MBF, Int. ¼" Rule)

	Lowest	Highest	Most Common
White Pine	32	59	42
Red Pine	25	40	30
Pitch Pine	-	-	-
Hemlock	20	37	28
Spruce	30	47	40
Fir	25	40	35
Cedar	-	-	-
Tamarack	20	40	35
White Birch Veneer	40	75	60
White Birch Sawlogs	48	83	58
Yellow Birch Veneer	-	-	-
Yellow Birch Sawlogs	45	120	60
Hard Maple Veneer	-	-	-
Hard Maple Sawlogs	-	-	-
Oak Veneer	-	-	-
Oak Sawlogs	37	67	50
Beech Sawlogs	-	-	25
Aspen Sawlogs	-	-	25
Basswood	-	-	25
Elm	23	23	23
Soft Maple	20	30	23
White Ash	42	73	60
Hardwood Veneer	-	-	-

Consult your nearest Service Forester for up-to-date prices

BOLTWOOD (Cord)

White Pine	-	-	-
Red Pine	-	-	-
Spruce	-	-	-
Cedar	5.00	5.00	5.00
White Birch	18.50	35.00	28.50
Yellow Birch	20.00	30.00	27.50
Hard Maple	17.50	25.00	20.00
Oak	8.50	20.00	17.50
Beech	7.50	7.50	7.50
Aspen	7.00	7.00	7.00
Soft Maple	7.50	8.00	7.50
White Ash	11.00	11.00	11.00

PULPWOOD (Cord)

White Pine	2.00	4.25	3.25
Red Pine	2.00	4.00	3.75
Hemlock, Rough	3.00	5.50	4.75
Spruce-Fir, Rough	5.00	9.00	7.00
Tamarack	3.00	5.00	5.00
Aspen, Rough	2.75	5.25	4.50
Other Hardwoods, Rough	3.00	5.50	4.75

MISCELLANEOUS

(Put unit of measure under "Comments")

Cedar Ties/Posts (Circle)	-	-	-	
" Utility Poles	-	-	-	
" Cabin Stock	-	-	-	
" Shingle Stock	-	-	-	
" Fence Stock	-	-	-	
Red Pine Utility Poles	-	-	-	
Piling - Species _____	-	-	-	
Firewood	4.75	5.75	4.75	Cord
Chips/Sawdust/Shavings	-	-	-	

MAINE FOREST SERVICE

Utilization and Marketing
Augusta, Maine

STUMPAGE PRICES - ZONE C

Compiled from information submitted by Service Foresters on or before Oct. 4th, 1976

LOGS (MBF, Int. ¼" Rule)

	Lowest	Highest	Most Common
White Pine	27	47	40
Red Pine	28	43	35
Pitch Pine	-	-	-
Hemlock	27	33	32
Spruce	27	45	37
Fir	28	53	40
Cedar	20	25	23
Tamarack	30	50	40
White Birch Veneer	-	-	-
White Birch Sawlogs	45	70	65
Yellow Birch Veneer	-	-	-
Yellow Birch Sawlogs	37	60	50
Hard Maple Veneer	-	-	-
Hard Maple Sawlogs	35	50	45
Oak Veneer	-	-	-
Oak Sawlogs	35	55	50
Beech Sawlogs	25	35	30
Aspen Sawlogs	25	40	35
Basswood	25	35	30
Elm	25	50	45
Soft Maple	25	40	35
White Ash	40	85	70
Hardwood Veneer	-	-	-

Consult your nearest Service Forester for up-to-date prices

BOLTWOOD (Cord)

White Pine	-	-	-
Red Pine	-	-	-
Spruce	-	-	-
Cedar	-	-	-
White Birch	6.00	12.00	8.00
Yellow Birch	19.00	30.00	27.50
Hard Maple	19.00	28.00	25.00
Oak	17.50	22.50	20.00
Beech	15.00	15.00	15.00
Aspen	9.00	12.00	10.00
Soft Maple	7.00	10.00	8.00
White Ash	7.00	10.00	8.00
	20.00	30.00	28.00

PULPWOOD (Cord)

White Pine	2.00	3.25	2.75
Red Pine	2.25	3.50	3.00
Hemlock, Rough	3.50	6.50	3.50
Spruce-Fir, Rough	7.75	9.75	8.00
Tamarack	3.50	7.00	6.50
Aspen, Rough	2.75	3.75	3.25
Other Hardwoods, Rough	3.25	3.50	3.50

MISCELLANEOUS

(Put unit of measure under "Comments")

Cedar Posts	-	-	6.00	Cord
" Utility Poles	-	-	-	
" Cabin Stock	-	-	-	
" Shingle Stock	-	-	-	
" Fence Stock	8.00	10.00	10.00	Cord
Red Pine Utility Poles	-	-	8.00	Cord
Piling - Species	-	-	-	
Firewood	-	-	-	
Chips/Sawdust/Shavings	2.00	4.00	3.00	Cord
	-	-	-	

MAINE FOREST SERVICE

Utilization and Marketing
Augusta, Maine

STUMPAGE PRICES - ZONE D

Compiled from information submitted by Service Foresters on or before Oct. 4th, 1976

LOGS (MBF, Int. ¼" Rule)

	Lowest	Highest	Most Common
White Pine	27.00	35.00	32.00
Red Pine	-	-	-
Pitch Pine	-	-	-
Hemlock	17.00	19.00	17.00
Spruce	22.00	34.00	27.00
Fir	22.00	34.00	27.00
Cedar	16.00	18.00	17.00
Tamarack	-	-	16.00
White Birch Veneer	38.00	48.00	43.00
White Birch Sawlogs	29.00	35.00	32.00
Yellow Birch Veneer	38.00	48.00	43.00
Yellow Birch Sawlogs	29.00	35.00	32.00
Hard Maple Veneer	-	-	40.00
Hard Maple Sawlogs	21.00	28.00	25.00
Oak Veneer	-	-	-
Oak Sawlogs	-	-	-
Beech Sawlogs	16.00	17.00	17.00
Aspen Sawlogs	17.00	17.00	17.00
Basswood	-	-	18.00
Elm	-	-	20.00
Soft Maple	20.00	25.00	23.00
White Ash	-	-	45.00
Hardwood Veneer	-	-	20.00

Consult your nearest Service Forester for up-to-date prices

BOLTWOOD (Cord)

White Pine	-	-	-
Red Pine	-	-	-
Spruce	8.00	12.00	10.00
Cedar	4.00	8.00	6.00
White Birch	13.00	17.50	16.00
Yellow Birch	16.00	17.50	16.00
Hard Maple	-	-	-
Oak	-	-	-
Beech	-	-	-
Aspen	4.00	4.00	4.00
Soft Maple	-	-	-
White Ash	-	-	-

PULPWOOD (Cord)

White Pine	-	-	4.00
Red Pine	-	-	-
Hemlock, Rough	4.00	6.00	5.00
Spruce-Fir, Rough	7.00	9.50	8.25
Tamarack	-	-	5.00
Aspen, Rough	3.25	4.50	3.25
Other Hardwoods, Rough	-	-	4.50

MISCELLANEOUS

(Put unit of measure under "Comments")

Cedar Ties/Posts (Circle)	-	-	-	
" Utility Poles	-	-	-	
" Cabin Stock	-	-	-	
" Shingle Stock	10.00	20.00	18.00	MBF
" Fence Stock	4.00	6.50	5.00	Cord
Red Pine Utility Poles	-	-	-	
Piling - Species _____	-	-	-	
Firewood	3.50	7.00	5.00	Cord
Chips/Sawdust/Shavings	-	-	-	

"U"

OCT. 2 1 1976 ADMIN / Policy

STATE OF MAINE
DEPARTMENT OF CONSERVATION
BUREAU OF FORESTRY
OBJECTIVES AND POLICIES
(Modified 4/10/74 by A.T.B.)

OBJECTIVE

The objective of the Bureau of Forestry (Maine Forest Service) is to ensure for present and future generations of Maine citizens the greatest economic and social benefits from trees and the forest lands of the State.

FUNCTIONAL POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Implement appropriate forest land management practices on state-owned lands and encourage and promote these practices on other public and private lands to provide maximum benefits from forest products, recreation, and related resources such as soil, water, and wildlife.

2. Produce, distribute, and plant forest seedlings to aid in accomplishment of these forest land management practices.

3. Promote improved markets, utilization and manufacture of forest products to maintain a thriving forest industry.

4. Initiate and maintain up-to-date economic data including a forest inventory for purposes of identifying current and future forest industry trends.

5. Promote productivity and current use as the basis for forest land taxation to encourage long-term forest management objectives.

6. Protect the forest resource from fire, insects, diseases, and other natural enemies.

7. Encourage and promote the planting, care, and protection of shade trees, shrubs, and forest growth by individuals, municipalities, and state agencies to maintain and improve the scenic beauty, wildlife habitat, and recreational values of Maine.

8. Determine, encourage and conduct needed research in forest resource and shade tree management.

9. Develop through information, education, and formal publications a greater public awareness and appreciation of:

   a. Forests as Maine's basic economy and renewable resource.

   b. The need to protect the forest resource.

   c. The economic and social benefits to be derived from multiple use of forest lands.

10. Encourage other agencies to cooperate in setting good examples in furtherance of the above objective and policies.

OPERATIONAL POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Carry out Bureau programs to fulfill statutory provisions.

2. Fulfill completely those responsibilities assigned the Bureau in conjunction with intergovernmental programs.

3. Respond promptly and fully to all inquiries directed to the Bureau.

4. Cooperate with other agencies, both public and private, within statutory limitations.

5. Maintain competitive salaries to recruit and retain competent personnel.

6. Improve competence by providing opportunities for educational leave, continuing education, and participation in scientific meetings.

7. Carry out in-service training and workshops as a continuing part of personnel development.

8. Prohibit service as Town Forest Fire Warden, Town Tree Warden, candidacy for public office involving partisan politics or public support of a candidate for such office.

9. Require all persons to pass a physical examination prior to employment and thereafter as appropriate at Bureau discretion and expense.

10. Require all employees to wear hard hats while on fires, in woods operations areas, and on construction jobs.

11. Use the U. S. Forest Service Health and Safety Code as a guide to safe workin procedures.

12. Provide uniforms and require them to be worn as instructions specify.

13. Require Region/Division approval before annual or personal leave is taken, and that all leave be reported to the Region/Division weekly.

14. Require Division/Region approval before capital equipment is acquired, converted, or transferred between Districts, Regions or Divisions.

15. Require Region/Division approval and written agreement for loan or transfer of capital equipment to municipalities or other agencies or groups.

16. Maintain Bureau structures, equipment and land in first class condition to present a neat, attractive appearance.

17. Execute all policies through cooperation and coordination between Regions and Divisions for the greatest efficiency and economy.

ENTOMOLOGY DIVISION

OBJECTIVE

Protect and preserve forests, shade and ornamental trees, and forest products against insects, diseases and injuries; and alleviate losses or annoyance by such factors to man and his property except for food crops.

POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Conduct detection and assessment surveys.
2. Maintain taxonomic, reference, and laboratory facilities.
3. Conduct research on bionomics of pest species and application of biological, cultural and chemical control methods.
4. Advise on insect and disease control.
5. Determine and execute, if appropriate, control procedures for specific problems.
6. Provide guidance in arboriculture and ornamental tree plantings to home owners, municipal tree wardens and commercial arborists.

FIRE CONTROL DIVISION

OBJECTIVE

Provide fire protection at the least cost with minimum damage to all forest and intermingled lands.

POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Prepare and execute annually on a District basis a fire protection action plan covering prevention, presuppression and suppression.
2. Maintain a record on the cause and location of forest fires.
3. Maintain a campsite program in the Maine Forestry District as a means of reducing occurrence of man-caused fires.
4. Carry out an educational and law enforcement program aimed at specific fire causes.
    * a. Cooperative Forest Fire Prevention program.
    * b. Keep Maine Green program.
5. Maintain a statewide system of forest fire danger measurement.

6. Maintain a fire detection system of towers and aircraft patrol with duty schedules based on fire danger indices.

7. Assign first priority in use of aircraft to fire suppression and detection.

8. Assign first priority in use of radio to aircraft working on fires.

9. Refer cases of fire control personnel having suffered a heart attack to the Retirement Board for disability retirement review.

10. Start fire fighting efforts immediately with aggressive action to control all fires prior to 9:00 a.m. of the day following fire discovery.

11. Establish a control line around all fires before they are declared out when the build-up index exceeds 15.

12. Coordinate publicity on extra-period fires through Augusta office.

13. Carry out an effective training program with the volunteer and municipal fire departments relative to fire suppression methods, techniques and equipment.

MANAGEMENT DIVISION

OBJECTIVE

Improve and maintain the economic and social values of forest lands through muntiple-use management, harvesting, marketing, and processing of forest products.

POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Assist owners in the development of their woodlands to produce maximum quality and quantity of forest products by application of reforestation, timber stand improvement, and timber harvesting.

2. Provide technical assistance on all phases of logging, manufacturing, utilization and marketing of wood products.

3. Give recognition to the compatibility of timber production and harvest (forest products use) with other goals of the landowner, including forest recreation, water production, and wildlife habitat.

4. Provide technical assistance in the use of trees for beautification and urban forestry.

5. Encourage municipalities and other public and private agencies to develop lands for purposes of wood production, forest education, and demonstration.

6. Encourage owners to use professionally trained private and public foresters in managing forest lands.

7. Inform owners of the need for locating and identifying property boundary lines and encourage the use of registered land surveyors.

8. Provide information on specialty products and the proper selection and use of Maine tree species, sizes, and grades of trees and lumber.

9. Provide current statistical data on forest industries and on timber growth and drain for use in local planning and development.

NURSERY DIVISION

OBJECTIVE

Provide forest seedlings to the public at a cost that will encourage planting to meet reforestation needs.

POLICIES TO ACCOMPLISH THE ABOVE OBJECTIVE ARE TO:

1. Use native seed and plant material to the greatest possible extent.

2. Sell seedlings with the reservation they are only for forest plantings and not to be resold for ornamentals with roots attached.

3. Improve seed quality by obtaining seed from selected areas and by development of seed orchards.

4. Conduct research pertinent to seedling production, transplanting and Christmas tree production.

5. Provide plant materials for other agencies when not available from private sources or when justified by production problems.

DEFINITIONS

Objective as used in this report means a long-term result to be achieved on a statewide basis. In general, it will answer only "what" is to be accomplished. Although goal, aim, and purpose also mean about the same, these will not be used in this report.

Policy as used in this report means broad action taken within limits of the objective statement. In general, it will answer the question of "how" the objective is to be reached. "Procedure" is a similar term, but for these purposes was considered to be of a shorter term and limited scope.

MAINE FOREST SERVICE
FOREST MANAGEMENT DIVISION

FOREST OWNERSHIP SURVEY FOR 1971-1976 PERIOD

NOVEMBER, 1976

NAME	Same Ownership Yes	No	Sold Woodland Yes	No	Property Subdivided Yes	No	Property Combined W/Another Yes	No	Property Changed Hands More than Once 1971-75 Yes	No	Property Under Tree Growth Tax Law Yes	No	Current Classification if Changed
Paxton	342	109	113	338	124	327	1	450	20	431	3	448	
% Change	76	24	25	75	27	73	.2	99.8	4	96	1	99	
Raymond	225	86	102	209	71	240	0	311	4	307	4	307	
% Change	62	38	48	52	30	70	0	100	2	98	2	98	
Union	240	82	79	243	43	279	6	316	10	312	0	322	One owner no data
% Change	66	34	33	67	15	85	2	98	3	97	0	100	
Werinth	195	96	112	179	52	239	11	280	27	264	55	236	
% Change	51	49	63	37	22	78	4	96	10	90	23	77	
Weston	111	53	48	115	16	147	6	158	12	152	2	162	
% Change	52	48	42	58	11	89	4	96	8	92	1	99	
Westport	57	20	22	55	11	66	2	75	4	72	3	70	
% Change	65	35	40	60	17	83	3	97	6	94	4	96	
Totals	1170	446	476	1139	317	1298	26	1590	77	1538	67	1545	
% Change	62	38	42	58	24	76	2	98	5	95	4	96	