Governor's Council on the Sustainability of the Forest Products Industry

Final Report
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DECD
Maine Department of Economic and Community Development

Council's Charge

In January, 2004, Governor John E. Baldacci created the Governor's Council on the Sustainability of the Forest Products Industry, bringing together leaders from the forest products industry, organized labor, landowners, state agencies and the legislature to address challenges facing the forest products industry. Following Governor Baldacci's Blaine House Conference on Maine's Natural Resource-based Industries in November of 2003, this Council was charged with providing concrete recommendations that can help make the state's forest products industry more competitive.

Maine's forest products industry has long been an anchor of Maine's economy, providing well-paid jobs, community stability and support for traditional land uses. Today, Maine forest product manufacturers face intense competition from around the globe. As part of a mature industry, Maine mills face growing competition at a time when overall market growth is modest. This Council was formed to develop knowledge and recommendations that can help place Maine forest product manufacturers in the best possible competitive position. These policy recommendations are the result of careful research and dialogue on the part of all Council members, and represent a collaborative approach to supporting and enhancing the long-term sustainability of the forest products industry in Maine.

The full text of Governor Baldacci's Executive Order that established this Council is in Appendix A.

Resources Supporting the Governor's Council on the Sustainability of the Forest Products Industry

The Department of Economic & Community Development staffed the work of this Council, and Council members generously provided their time to support the work and research. In addition, the Maine Technology Institute provided financial support through a Cluster Enhancement Grant to help with additional research needs and final report preparation. The Maine Technology Institute also provided financial support to the Maine Department of Conservation's *Maine Future Forest Economy Project*, which informed the work of this Council.

Research and drafting for this report was coordinated by Eric Kingsley of Innovative Natural Resources Solutions LLC in Portland, Maine, www.inrsllc.com. Peggy Schaffer, Policy Specialist with the Department of Economic & Community Development, provided staffing and administration for the Council.

Council Members

The Governor's Advisory Council on the Sustainability of Maine's Forest Products Industry included representatives from the pulp and paper industry, organized labor, landowners, industrial energy users, state agencies, the Maine House of Representatives and the Maine Senate.

Name	Affiliation	Representing
Deborah Feck	Domtar Industries	Paper Mill
Rosaire Pelletier	Fraser Papers	Paper Mill
Ron Lovaglio (for Jennifer Miller)	SAPPI	Paper Mill
Dennis Castonguay (replaced Mike Craft)	International Paper	Paper Mill
Paul Randall	Paper, Allied-Industrial, Chemical and Energy Workers Intl. Union (PACE)	Organized Labor
John Cashwell	Seven Islands Land Company	Landowner
Tony Buxton	Preti Flaherty	Industrial Energy Rate Expert
Commissioner Patrick McGowan	Department of Conservation	Maine State Government
Commissioner Dawn Gallagher	Department of Environmental Protection	Maine State Government
Commissioner Jack Cashman (Chair)	Department of Economic & Community Development	Maine State Government
Charles Spies	Finance Authority of Maine	Maine State Government
Representative Troy Jackson		House of Representatives
Senator John Martin		Senate

Parallel Efforts to Address Sustainability of Maine's Forest Products Industry

In addition to the efforts of this Council, Maine state government has been a leader in addressing the challenges and opportunities in the forest economy. Other efforts that were ongoing during the work of this Council and that informed the Council's findings include:

Maine Future Forest Economy Project, led by the Department of Conservation

The *Maine Future Forest Economy Project* is a yearlong effort to identify, on a sector-by sector basis, the opportunities and challenges facing Maine's forest products industry and develop an action plan for moving forward. The efforts of this Council and the *Maine Future Forest Economy Project* shared information throughout both processes, and informed the work of one another. Once available, this final report and executive summary can be found at http://www.state.me.us/doc/mfs

Maine Forest Certification Advisory Committee, led by the Maine Forest Service, Department of Conservation

The *Maine Forest Certification Advisory Committee* was formed in response to Governor Baldacci's call to increase the amount of independently certified forestland in Maine to 10 million acres by 2007 (as of January 2005, the State of Maine has just over 7 million acres of certified forestland, or 38 percent of its commercial timberland base). This 23-member Advisory Committee met seven times since July 2003, and included landowners, forest product manufacturers, environmental organizations, trade associations, state government, the University of Maine and certification organizations. The final report of the *Maine Forest Certification Advisory Committee* can be found at http://www.state.me.us/doc/mfs/fpm/for_cert/certification_rpt_final.pdf

Strategic Plan for Economic Development through Nature Tourism in Three Regions of Maine, led by the Department of Economic & Community Development

The Department of Community & Economic Development -- with additional support from the Departments of Transportation, Agriculture and Conservation – is developing a *Strategic Plan for Economic Development through Nature Tourism.* This effort, focused on three demonstration regions of the state, includes:

- An inventory and assessment of existing natural resource-based tourism offerings;
- A "gap analysis" to identify the feasibility of new products that reflect regional identity and community appropriateness; and
- An identification of needs for enhanced travel and tourism infrastructure.

A report and recommendations on this research is expected to be available June of 2005.

Information Used in Developing this Report

The Governor's Council on the Sustainability of Maine's Forest Products Industry met on 7 occasions to share information and develop the recommendations contained in this report. The four subcommittees meet at least four times separately. In addition to the considerable experience that this group brought to its work, the Council initiated independent research and used information developed in the efforts described above.

Advisory Council-Initiated Research

As part of its work, and using funding provided by the Maine Technology Institute, the Governor's Council on the Sustainability of Maine's Forest Products Industry initiated specific research on subjects of importance to the group. In addition to the research conducted as part of the Maine Department of Conservation's Future Forest Economy Project, the Council initiated research on best business practices in the logging industry and on land ownership changes in Maine over the past decade.

Best Business Practices in the Logging Industry

In order to better understand what might be considered "best business practices" in Maine's logging industry, the Council asked the Forest Resources Association and the Maine Forest Products Council to interview Maine loggers and review existing information to provide a picture of the challenges and opportunities they face. This report contains information related to the logging industry on:

- Financial health
- Diversification
- Non-routine cost-cutting measures
- Pre-harvest planning
- Bookkeeping
- Attracting and retaining skilled labor
- Mechanization and operational innovation
- Business relationships
- Equipment maintenance and repair

The full text of this analysis is contained in Appendix B.

Changes in Land Ownership, 1994 to 2004

In order to understand the changes in land ownership that have occurred over the past decade, the Advisory Council asked James W. Sewall Company of Old Town, Maine to prepare maps showing major landownership in Maine in 1994 and 2004. Color versions of those maps are in Appendix C.

Using data provided with these maps, analysis was conducted to show the larger trends in land ownership over this time period. The major change is a dramatic shift in ownership from industrial forest landowners (landowners with mills, for example paper companies) to large non-industrial private forest landowners (for example, investment groups). Additionally, small non-industrial landowners have roughly doubled their holdings during this time period, and land owned by conservation groups *as conservation land* has more than tripled.[1]

Class	1994	2004	Difference[2]
Conservation NGO	46,092	164,246	118,154
Federal	201,945	206,965	5,020
Indian	254,013	244,289	(9,724)
Industrial	6,867,763	3,239,156	(3,628,607)
Large NIPF [3]	3,023,139	6,316,123	3,292,984
Small NIPF	346,389	664,529	318,140
State	905,567	979,513	73,946
Total	11,644,908	11,814,821	

Past Efforts to Address Sustainability of Maine's Forest Products Industry

The work of this Council builds upon past efforts by Maine state government to understand and address the challenges and opportunities facing the forest products manufacturing sector. Two efforts by state government stand out in this regard, and provided a background and starting point for the important work of this Council:

- *Task Force to Increase Primary and Secondary Forest Product Manufacturing*, Final Report issued May 1999, and

- *Diagnostic Review of the Pulp & Paper Industry in Maine*, prepared by Jaakko Pöyry Consulting for the Commission on the Future of Maine's Paper Industry, Final Report issues February 1995.

[1] For purposes of this analysis, land owned by conservation groups and managed as productive timberland is classified as non-industrial private forestland.
[2] Parenthesis ( ) indicate a negative number.
[3] NIPF means "non-industrial private forestland owner"

Recommendations for Action

Based upon its research and meetings, the Governor's Council on Sustainability of the Forest Industry recommends that the following actions be taken in order to support the forest products industry in Maine. The Council recognizes that the forest products industry operates in a highly competitive global climate, and the following actions are designed to support existing and new forest industries. Recommendations are grouped by sections of the Executive Order that established the Council (Appendix A).

1. **Examine the state's tax policy and regulatory framework to identify factors that impede capital investment in new equipment and technology, including financing programs, environmental regulations and tax policies.**

a. Repeal the personal property tax on business equipment.

Having one of the world's best supplies (quantity and quality) of fiber is no longer enough to insure the success or in fact the very continuation of Maine's forest products industry. Maine's paper industry faces competition not only from abroad but also from within the each company for new investment dollars.

One of the Maine's competitive disadvantages is the tax on business equipment (personal property) at 100% valuation. The personal property tax acts as a direct disincentive to investments, and while Maine has mitigated this tax with the Business Equipment Tax Reimbursement program (BETR), there is a continual political and fiscal uncertainty about its future that makes investments in Maine more risky than in other locations nationwide.

The only way to remove this uncertainty and the risk is to remove the personal property tax on machinery and equipment. This action should be taken as a part of any tax reform package that is presented to the legislature.

This recommendation is also a primary recommendation of the *Maine Future Forest Economy Project*. Reached independently, the fact that this is a priority recommendation of both efforts underscores the importance of this recommendation to Maine forest product manufacturers.

b. Improve regulatory stability by enhancing communication and planning between industry and regulators.

The Department of Environmental Protection will hold two sessions per year for the forest products community. These meetings, including attending the Maine Pulp and Paper Association annual meeting, will include a preview of a three to five year outlook of regulatory direction and requirement. The goal of this outreach is to allow for more effective business and environmental

planning, which now occurs on a much more reactive unplanned course of action

Each business's 3 to 5 year environmental plan will be discussed annually with the Department of Environmental Protection to review and approve of an action plan and potential options or alternative approaches to meet the regulatory requirements. (Options or alternatives to be expressed in terms of both financial demand and conformance to environmental expectation.)

While current law provides some protection for confidential information, it may be necessary to change existing statutes to provide sufficient confidentiality of a business's long-term plan. This would allow industries to share information with regulators without threatening a company's competitive position in the marketplace.

c. Continually evaluate existing regulatory programs to assure that they meet the public health and safety need in the least burdensome manner practical.

The Department of Environmental Protection will annually create and assess a matrix depicting Maine's regulatory requirements to re-evaluate testing, frequency and other requirements of established programs. This assessment would serve to conclude if an established regulatory program continues to provide value or is no longer warranted for ensuring regulatory conformance.

Examples sited include:

Oil Spill Reporting
Chapter 137 Emission Statement
Above & Below Dioxin Levels
Cluster Rule AOX/Chloroform
Solid Waste Landfill Monitoring
Toxicity Testing of Water

d. The Department of Environmental Protection will continue efforts to work with industries on regulatory compliance

The Department of Environmental Protection will continue to provide education, awareness and expansion of its "Step-Up Program" to businesses and recognize businesses that proactively demonstrate environmental stewardship.

e. Improve the connections of existing state business assistance and business development programs to forest product manufacturers.

Maine has a number of state, quasi-state and state-funded programs that are available to businesses. These programs cover a wide variety of areas, and

include funding for technology development and deployment, energy conservation, and entrepreneurial development.

As a group, these programs seem to be poorly connected to Maine forest product manufacturers. In a survey of forest product manufacturers conducted as part of the Maine Future Forest Economy Project, at least seventy percent of respondents did not know of, or had only heard of, a sampling of four Maine programs. Similarly, most of the forest industries surveyed did not know if these programs met their needs.

Through the efforts of this Council, this issue is already being addressed. The Maine Technology Institute met with the members of the Maine Pulp & Paper Association, and some members have taken advantage of the opportunities offered here. Industry trade associations should build upon this by identifying existing programs that may be of benefit to members and help connect forest product manufacturers to these opportunities.

2. Consider strategies to improve the quality, productivity and accessibility of Maine's timber supply, including the capacity to assess the character and extent of Maine's forest resources; efficient and cost effective transportation; and protection from new exotic pests.

a. Continue efforts to provide timely forest inventory and analysis information.

Maine has a rich history of collecting, analyzing, and forecasting forest resource issues, in addition to the periodic inventory status. This information is used by policy makers, forest managers, manufacturing industries, conservation organizations and citizens to better understand the current and potential future conditions of Maine's forest resource. These historic assessments range from some very specific species and impact issues to more generalized and broad-based outlooks. Recent examples include:

- The ***Timber Supply Outlook for Maine: 1995 – 2045***, published by the Maine Forest Service in September, 1998 was the most intensive and detailed technical assessment of future wood supply, using computer modeled simulations to project growth, harvest, and silvicultural practices.
- The most current modeling project was commissioned by the North East State Foresters Association in 1999, and resulted in the 2002 publication of ***A Forest Model for New York, Vermont, New Hampshire, and Maine***. This analysis included four different modeling scenarios and an expanded ecological insight on the interactions across the entire region and individual state-level assessments.
- The most current published data and analysis on statewide forest resources is contained in the October 2003 release of ***Fourth Annual Inventory Report on Maine's Forest***.

In order to continue providing the level of timely information that all stakeholders need regarding Maine's forest resource:

(1) The current USDA FIA annualized inventory, being implemented with the cooperation of the Maine Forest Service, must be maintained on its current 5-year cycle of panels.
(2) The Maine Forest Service needs continued support and funding for data collection, analysis, and timely reporting.
(3) A new and enhanced timber supply analysis is needed using the complete set of 5-year inventory data. The time is ripe for the Maine Forest Service and other partners to initiate and complete a new and enhanced timber supply analysis. Tools now exist that allow more detailed modeling of species, products, and silvicultural practices and the production of an optimized result, which can also incorporate ecological considerations. This will require staff dedicated to running, developing, and maintaining these complex models.

b. Increase truck weight limits on Maine highways

Weight restrictions on the interstate highway system in Maine have a significant impact on Maine forest product manufacturers. As noted in a recent report to the Maine Department of Transportation, Canada allows significantly higher truck weight limits than Maine, and "U.S. companies competing against cross-border rivals in natural-resource-based industries, where profit margins are typically low find it difficult to compete against foreign competition that is able to use more efficient means of transportation."[4]

Currently, trucks weighing up to 100,000 pounds gross vehicle weight are allowed to travel on state roads and the Maine Turnpike System (I-95 from Kittery to Augusta); the remainder of the Interstate Highway System in Maine has a federal truck gross vehicle weight limit of 80,000 pounds.

Maine industries, the Maine Department of Transportation, the state's congressional delegation and others have long sought federal legislation that would allow the higher state truck weight limit on currently non-exempt Maine Interstate highways. The council strongly encourages MDOT to continue to work with the Canadian Government and our federal delegation to address this issue, which puts Maine at a competitive disadvantage when it comes to freight costs associated with truck transportation.

In this same regard, Maine forest industries should work with the Maine Department of Transportation to address concerns regarding "front-loading" of trucks leaving the woods. During certain times of the year, generally during winter conditions, trucks leaving the woods with logs or pulpwood tend to place a disproportionate amount of weight over the front axle in order to improve traction. When weighed for compliance on the highway, loggers note that this practice can lead to a weight reading that may not be accurate. The forest products industry and the Maine Department of Transportation should work together to develop a pragmatic solution to this issue that addresses the needs of all parties. New technologies, such as central tire inflation (discussed in Appendix B), may help address this issue.

Industry stakeholders and state agencies should also explore new truck transportation opportunities, such as multiple trailer loads or "B-trains". All parties should work to identify opportunities and concerns, and seek safe and efficient transportation opportunities for Maine businesses.

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[4] Wilbur Smith Associates, Woodrooffe and Associates, B.T. Harder, Inc. *Executive Summary: Study of Impacts Caused by Exempting Currently Non-Exempt Maine Interstate Highways From Federal Truck Weight Limits.* June 2004.

c. Inventory issues related to rail service and work collaboratively to address these issues

During the course of this effort, the Council was made aware of a number of issues related to rail service in Maine. Anecdotal concerns were raised about shipping time and costs, "drops" – or lost rail cars, consistency of service and reliability. Some in the forest industry contend that the volume of product moved by rail in Maine could double if these issues were resolved. The Maine Pulp & Paper Association will pull together a listing of concrete examples of problems, as well as overall concerns. This will be presented to state officials and the railroads in order to begin resolving these issues in a positive and collaborative manner.

d. Continue efforts aimed at insect and disease management through staff transition.

The Insect and Disease Management (IDM) Work Unit of the Forest Health and Monitoring Division of the Maine Forest Service - Department of Conservation, has a wide variety of responsibilities. These include protecting the forest and shade and ornamental tree resources of the state from significant insect and disease damage and providing pest management and damage prevention for homeowners, municipalities, and forest landowners and managers. The goal is to preserve the overall health of Maine's forest resources.

The core functions of the IDM Unit include:

- Maintain statewide forest health and sustainability monitoring surveillance system
- Provide technical assistance to forest landowners, municipalities and individuals
- Conduct and supervise pest control actions
- Enforce State and Federal quarantine laws
- Conduct applied research on management of forest stressors

The IDM's ability to respond to forest insect and disease problems such as hemlock woolly adelgid, balsam woolly adelgid, emerald ash borer, sudden oak death, and spruce budworm is limited by reductions in Unit staff (from 26 in the 1980's to 6 today), and the Unit's ability to respond to future insect and disease problems will degrade further over time as experienced people retire, while diminished ranks prevent us from training replacements to take their place. At least 4 of the 6 staff of the Unit have been with the MFS 30 years and are approaching retirement.

Maine's insect and disease survey efforts have been reduced to the bare minimum needed to meet federal requirements and to meet reporting and

compliance requirements for the federal monies we receive. Further, MFS does not have the capability to develop new damage assessment protocols to help the forest products industry as we did in the recent past on issues like the expansion of balsam woolly adelgid to inland areas (this pest is now killing hundreds of acres of trees at a time.) At current staff levels, the Unit will not have the ability to respond to a major insect or disease problems when, not if, one occurs (e.g. when spruce budworm returns as is predicted in 5 to 15 years, or if sudden oak death or emerald ash borer spread to Maine.)

To adequately manage the important tasks delegated to the IDM Unit, within the context of a staff workforce that are on the brink of retirement, is the concept of a Mentoring Program – "Bridge Over Exotic Waters". The focus of this Program would be to hire -- on a retainer basis -- retired professionals experienced in exotics and the science of monitoring, detection, suppression and outreach to serve as mentors to a new and less experienced Work Unit as it turns over in the next few years.

This Program will combine the energy and enthusiasm of new recruits with the wisdom and savvy of those that have been in the field for decades. Together, the mentors and new employees would develop the planning and positioning for the state to prepare for invasives and exotics in Maine's forests.

The Program would be supported by a non-lapsing $300,000 sub-account within an existing MFS dedicated account. The Program would extend over a period of 3 to 5 years. It is expected that a variety of funding sources would provide revenues for this Program.

3. Identify the major vulnerabilities facing the industry, together with the obstacles to continued growth.

This was a major focus of the Department of Conservation's *Maine Future Forest Economy Project*, described above. Research and findings from this effort were regularly supplied to the Council, and inform these recommendations. A detailed, sector-by-sector analysis of the competitive position of Maine forest product manufacturers can be found be viewing this research at http://www.state.me.us/doc/mfs

a. Enhance communication on crosscutting issues.

The State should use its ability as an "unbiased broker" to help develop forums and possibly a formal organizational structure that allows the members from each segment of the supply chain to voluntarily come together to discuss and resolve issues that support the overall health of the forest products industry in Maine as a whole. This is an approach should allows broad-based communication that leads to the mutual benefit of all without violating anti-trust laws. This tool will not resolve specific contract or labor issues, but can help all parties stay in contact on neutral ground and occasionally focus on larger strategies that affect all of their interests.

4. Examine opportunities to brand Maine's forest products through promotion of sustainable forest management, such as green certification. This effort should include recommendations to expand the market for Maine's certified forest products, nationally and internationally, in order to demonstrate Maine's leadership role in sustainable forest management.

a. The *Maine Forest Certification Advisory Committee*, described above, has spent a year and a half addressing issues related to certification of forestland, including a focus on using Maine's role as a leader in forest certification to favorably position "Maine made" products. This group has issued a full report, including a series of recommendations that address:

1. Increasing certified forestland acres by increasing the number of both large and small, public and private certified landowners,
2. Increasing demand for certified pulpwood and sawlogs and the finished products manufactured from them,
3. Developing brand recognition for pulpwood and sawlogs harvested from certified lands,
4. Increasing the volume of certified pulpwood and sawlogs in the marketplace produced by trained, certified loggers, and
5. Developing a web-based certification information system.

The final report of this group can be viewed at http://www.state.me.us/doc/mfs/fpm/for_cert/certification_rpt_final.pdf. The Council applauds the important work this Advisory Committee has done and supports moving forward with this approach.

b. The *North East State Foresters Association*, of which Maine is a member, has received federal funding to explore branding of forest products from the Northern Forest states of Maine, New Hampshire, Vermont and New York. The results of this effort, expected in late 2005, should be used to identify how or if Maine might join with neighboring states to position its forest product manufacturers in the marketplace.

5. **Identify strategies to increase the use of research and technology, focusing on the competitive advantages of Maine tree species to expand the development of forest products, including: commercialization of new technologies like wood composites; increased development of value-added wood products; and investigating the use of new by-product technologies.**

   The forest products industry must expand and encourage the development of new technology in order to remain competitive, reduce costs and develop new products and processes. As a critical part of the economy, Maine has identified forest products as one of its seven targeted technology sectors, making it eligible for grants from the Maine Technology Institute. The state has also created a technology business incubator for this sector to encourage the development of new technology-based businesses. In addition Maine has made extensive investments in the University of Maine's Advance Engineering and Wood Composites Laboratory, as well as the Pulp and Paper Institute.

   However, the forestry and agriculture sector has applied for and received the fewest awards from the Maine Technology Institute, just 6% in the past three years. Also, many of the mill managers represented on the Advisory Council were unaware of either the Maine Technology Institute or the resources available at the University of Maine.

   In addition to the resources available for new product and process development there is a need for applied research to bridge the gap between products in the pre-commercialization phase and the very early stage development of those products or processes. An example of this is the development of fractionalization technologies presented at the one-day forum on bio-product development in Maine this past spring.

   Maine needs to do more to encourage new technologies, value added products and better utilization of industry waste products, by better utilizing the resources of the University of Maine, Maine Technology Institute and the development of an applied research fund for natural resource based industries. While the Advisory Council finds there are good resources available to assist the industry in the development of these new technologies, more out-reach needs to be done to connect these resources with industry leaders and entrepreneurs.

a. Increase knowledge, coordination and use of the Pulp and Paper Institute resources at the University of Maine.

1. Mill managers should arrange regular site visits to the institute and discuss the ways the institute can assist the industry. The institute should similarly arrange regular site visit to Maine mills to help identify areas where University expertise may be of benefit to Maine mills.
2. Through the Maine Pulp & Paper Association, increase understanding of resources available to the industry – as a whole and for specific issues facing mills individually.

b. Promote the research, development and commercialization of bio-based products, particularly those that are compatible with Maine's existing forest products infrastructure.

1. Maine's existing research capability at the University of Maine, coupled with community-based economic development groups interested in bio-product development provide it a unique opportunity to become a leader in this emerging field. Maine should focus its limited funding on products that enhance or support the existing infrastructure, such as new products made at pulp & paper mills in conjunction with paper.

c. Focus Research & Development (R&D) expenditures in the natural resources sector on efforts to bring new products to commercialization.

As the State of Maine continues and increases its efforts to expand research and development investments, we need to be more mindful of the balance between research and development leading to commercialization in the natural resource based industry and other state R&D expenditures. Natural resource based industries are the backbone of the Maine economy. R&D investments should be targeted to ensure this primary economic position can be maintained through value added, new technologies and better utilization of resources.

1. Develop an applied research fund for natural resource based industries. This fund should be a competitive fund, administered by the Maine Technology Institute. The fund should encourage collaboration between industry and the university as well as collaboration within the industry.

6. **Identify strategies to support the workforce infrastructure needed to maintain a vibrant forest products industry. This should include an examination of issues relating to the recruitment and retention of loggers, as well as other labor force needs.**

*a. **Establish a logger loan program in coordination with existing programs provide a loan program structured to the specific needs of loggers and especially targeted to encourage long term contracts for wood.***

1. The Small Business Administration, the Finance Authority of Maine and Rural Development should work together to set up partnerships and loan guarantees.
2. Educate financial institutions as to the specific challenges and needs of logging industry and forest products businesses – i.e. longer-term loans and commitment to independent operators, specific equipment needs.
3. Provide entry points for these programs through the Department of Conservation.

*b. **Establish a transition plan to Reduce, and potentially eliminate, the need for foreign H2B workers***

Given the changes in the federal H2B worker program, which has long supplied Maine with Canadian loggers, the state and industry should develop a long-term plan to meet the logging infrastructure needs of Maine industry with domestic labor. The Workforce Cabinet in the Maine Department of Labor should work with all stakeholders to help build the logging infrastructure necessary to serve Maine's industry, while recognizing that time is necessary to make this transition statewide. Because a continued shortage of loggers could have a crippling effect on the forest products industry, the industry and state should continue efforts to relax the federal cap on H2B workers during this transition period. This partnership also needs to encourage the federal Department of Labor to revise its prevailing wage standards for H2B visa workers, including the use of their own equipment.

*c. **Develop an apprenticeship program for loggers, encouraging on-the job training of new entrants to the field.***

Plum Creek is currently working with Foxcroft Academy in Dexter to create a transitional mechanism providing a clear career path for those who are interested in logging. The program has two components: a Plum Creek Sponsored "Professional Loggers in Training", and the development of a logging contractor training module.

The Professional Logger in Training (P.L.I.T) Component includes using the approved high school forestry programs currently at Foxcroft Academy. Plum Creek accepts applications from candidates of approved programs and designates which students they will sponsor. Plum Creek then provides incentive to logging contractor

to hire a sponsored candidate. The incentives will offset up to 50% of the wages for an approved P.L.I.T. for the training period of up to six months.

For its logging contractor training component, Plum Creek commissioned Foxcroft Regional Academy -- in association with State Department of Labor, the Maine Sustainable Forestry Initiative State Implementation Committee, the Maine Tree Foundation's Certified Logging Professional program, and Professional Logging Contractors of Maine -- to develop and present a training module. The training module is aimed at assisting contractors in their ability to recruit, train and retain sponsored candidates. Plum Creek offsets the cost of the training development and implementation.

After hearing about the success of the other projects around the state, SAPPI approached Kennebec Valley Community College and the Skowhegan Career Center to try and replicate the program in central & western Maine. Talks are currently underway to establish a program in this area of the state. An example of the types of businesses this might help include Moose River Lumber, which currently has a $7,000,000 expansion on hold because of the lack of domestic labor for their company.

The Western Maine Coalition has similar concerns about qualified workers for the forestry sector, and is working with the Department of Labor and others to develop programs intended to increase participants in apprenticeship logging training programs.

These types of industry-sponsored programs, done in partnership with communities, schools and the state are beneficial, and should be replicated around the state.

d. Support Northern Maine Community College's training program for "Mechanical Tree Length Forestry Operations."

This effort, which has already received commitments of support from Irving Woodlands and International Paper, is an example of industry working with the community college system to professionally train the next generation of Maine loggers. The curriculum includes ten to twelve weeks of field and classroom training, and provides a graduate with the necessary skills to safely and efficiently operate a feller buncher, a grapple skidder and a mechanical delimber. The cost per student for this program is currently very high, (at $17,000 per course). Unless this cost is reduced, it will create a barrier for those who wish to participate. This program does not provide business management training. Such training is an appropriate addendum to this or other logger training programs given the highly leveraged nature of the logging industry.

7. Examine ways to develop creative partnerships between managed forests and outdoor recreation/tourism.

Many employers in the forest products industry are the economic life-blood of their host communities. These communities lack the business diversity needed for a stable economic base, as a result then the forest products industry coughs, the community often comes down with a very bad cold.

Tourism, specifically nature-based tourism, can provide a greater level of economic stability for these communities. Most of these communities are in natural resource rich parts of Maine – places with mountains, rivers, and acres of undisturbed forests that provide a perfect location for the development of nature based tourism.

Recognizing the opportunity to build upon this natural resource infrastructure, the Department of Economic & Community Development is leading an effort to build upon existing nature-based tourism opportunities in Maine. This work, the *Strategic Plan for Economic Development through Nature Tourism*, is expected in 2005 and should provide a roadmap of how to develop this opportunity in conjunction with Maine's existing forest industry infrastructure.

8. Examine ways to reduce energy costs, including utilizing existing energy resources, and investigating options for self-generation of power.

a. Grow Maine's electricity market and diversify fuel sources available to Maine:

1. Support the construction of a second 345 kV transmission line to New Brunswick; and
2. Investigate a State role in financing and ownership of hydroelectric resources.

b. Adopt electricity and conservation delivery policies which promote manufacturing in Maine:

1. Adopt a Maine Manufacturing Energy Policy that acknowledges the importance of energy costs to the manufacturing sector;
2. Require that the Public Utilities Commission consider the effect of each electric rate or rate design decision on the health of the state's economy, with particular attention to the manufacturing sector;
3. Fund an intensive program of industrial energy conservation, through low-interest loans or grants, using bonded money to fund this effort.

Appendix A

January 8, 2004

AN ORDER CREATING THE GOVERNOR'S ADVISORY COUNCIL ON THE SUSTAINABILITY OF THE FOREST PRODUCTS INDUSTRY IN MAINE

WHEREAS, Maine's economic health, traditional landscape and the welfare of its workers and communities is tied to the viability of the forest products industry; and

WHEREAS, the forest products industry is a mature industry facing intense competition from abroad; and

WHEREAS, the economic and public policy forces influencing continued investment are creating conditions that threaten the sustainability of Maine's forest products industry; and

WHEREAS, the circumstances confronting the Maine forest products industry, and the economic and social communities closely tied to it, require a collaborative process to develop policy recommendations intended to support and enhance the long-term sustainability of the forest products industry in Maine;

NOW, THEREFORE, I, John E. Baldacci, Governor of the State of Maine, do hereby establish the Governor's Advisory Council on the Sustainability of the Forest Products Industry in Maine (hereinafter "Advisory Council").

Purpose

The purpose of the Advisory Council is to develop recommendations to improve the competitiveness of Maine's forest products industry nationally and internationally. In conducting its work, the Advisory Council should:

9. Examine the state's tax policy and regulatory framework to identify factors that impede capital investment in new equipment and technology, including financing programs, environmental regulations and tax policies.

10. Consider strategies to improve the quality, productivity and accessibility of Maine's timber supply, including the capacity to assess the character and extent of Maine's forest resources; efficient and cost effective transportation; and protection from new exotic pests.

11. Identify the major vulnerabilities facing the industry, together with the obstacles to continued growth.

12. Examine opportunities to brand Maine's forest products through promotion of sustainable forest management, such as green certification. This effort should include recommendations to expand the market for Maine's certified forest products, nationally and internationally, in order to demonstrate Maine's leadership role in sustainable forest management.

13. Identify strategies to increase the use of research and technology, focusing on the competitive advantages of Maine tree species to expand the development of forest products, including: commercialization of new technologies like wood composites; increased development of value-added wood products; and investigating the use of new by-product technologies.

14. Identify strategies to support the workforce infrastructure needed to maintain a vibrant forest products industry. This should include an examination of issues relating to the recruitment and retention of loggers, as well as other labor force needs.

15. Examine ways to develop creative partnerships between managed forests and outdoor recreation/tourism.

16. Examine ways to reduce energy costs, including utilizing existing energy resources, and investigating options for self-generation of power.

In conducting its work, the Advisory Council shall utilize information from businesses and business organizations, landowners, Indian tribal governments, and government agencies.

Membership

The Governor shall appoint eleven members to the Advisory Council, who will serve at the pleasure of the Governor. Four members shall represent the business community; one member shall be from organized labor; one member shall be an owner of forest land, or a designee; one member shall be an industrial energy rate expert; one member shall be the Commissioner of Conservation, or his designee; one member shall be the Commissioner of Environmental Protection, or her designee; one member shall be the Commissioner of Economic and Community Development, or his designee; and one member shall be the Chief Executive Officer of the Finance Authority of Maine, or his designee. The Commissioner of Economic & Community Development shall chair the Advisory Council. Members shall serve without compensation.

The Speaker of the House and President of the Senate may each appoint one member from his or her respective body, which member shall serve at the pleasure of the Speaker or the President, as applicable.

Staff

The Departments of Economic and Community Development and Conservation shall provide all necessary staff, from existing resources.

Timeline for Recommendations

The Advisory Council shall submit its recommendations to the Governor no later than August 31, 2004[5], after which the Advisory Council will dissolve.

Meetings

The Advisory Council shall meet as often as necessary to complete the assigned duties. One meeting shall be scheduled to provide the Maine Forest Service's "Future Forest Project" an opportunity to present its work to the Advisory Council. All meetings shall be open to the public and held in locations determined by the Advisory Council.

Effective Date

The effective date of this Executive Order is January 8, 2004.

_____

John Elias Baldacci
Governor

[5] This deadline was later extended to January, 2005.

Appendix B

BEST BUSINESS PRACTICES FOR LOGGERS

A Cooperative Study by the

Forest Resources Association and
Maine Forest Products Council

December 2004

Prepared for
Governor's Council on the Sustainability of the Forest Products Industry

With funding provided by
The Maine Technical Institute

Prepared by
Patrick D. Hackley
Northeast Division Forester
Forest Resources Association

Introduction:

Many industry observers agree that the forest products industry is still in the throes of enormous change as it struggles to compete in the global economy. One of the major obstacles to growth is finding and retaining qualified labor. Nowhere is this need becoming more acute than in Maine's logging industry. Recently, a group of state agency representatives met to explore ideas for recruiting and training loggers. One idea that took root was to identify some of the key characteristics that define today's successful logging contractor by developing a "Best Business Practices" model (BBP).

The purpose of the BBP is two-fold: to serve as a blueprint for aspiring loggers and provide insight for established logging contractors. The BBP also identifies the components of success that can stimulate ideas for professional training and development.

The Forest Resources Association and the Maine Forest Products Council conducted this brief study through a review of existing research, personal telephone interviews and written surveys of logging contractors, bankers, equipment dealers and managers of large timberland holdings.

The information gathered for this study is not meant to be a complete summary of the business characteristics that make today's successful logging contractor. There is no magical mix or amount of qualities that can ensure success in any business. Each contractor must constantly evaluate and assess their situation based on knowledge, skill, capital and market for his services.

Two compelling business qualities that did surface consistently throughout the interviews and surveys – are "relationships" and "attitude." All other qualities being equal, the contractor who possesses the most positive attitude, supported by long-standing, reliable business relationships, will ultimately have the greater degree of success in the challenging business of logging.

BEST BUSINESS PRACTICES FOR LOGGERS

Financial Health

Bankers examine the five C's of credit when financing any business. These five criteria provide a practical framework for a logging contractor to consider when seeking financing.

The five C's of credit are character, capacity, capital, conditions and collateral.

Character

This quality can be broken into two parts – excellent managerial skills and honesty. As a good manager, the logger must be able to choose jobs that will suit his equipment, his people and his skills. He must be able to forge sound professional relationships with employees, landowners, foresters and the mills that purchase or receive his wood.

Regarding honesty, this is the one trait that is indispensable in all relationships – both personal and professional. How a contractor interacts with business associates ultimately reflects on how he will manage his financial matters. Bankers evaluate more than just a contractor's assets, capital and liabilities – they also try to measure a contractor's character before loaning money.

Capacity…as in production.

Simply put, the contractor must be able to demonstrate the ability to produce adequate volumes of wood that will support loan payments – regardless of operator size. "Stumpage ahead", as one banker put it, is very reassuring for the financial institution.

Bankers are leery of contractors who have developed a niche with a particular type of equipment, service or product that may appear "too specialized." When the market goes down or the primary client changes his/her need, this niche may become a liability rather than an asset.

Capital

Adequate cash flow and equity in one's equipment and business is the primary focus of any banker's interest in a prospective borrower.

Sometimes contractors need capital to make transitions due to market changes or specific needs of a landowner client. Whatever the change or challenge, good managers find a way to adapt and continue being successful. This adaptability comes, in part, by selecting the right people to help run the company.

Once the financial strength of the company is determined, the lender then looks to the individual who is the primary owner and driving force behind the business to see what type of net worth he possesses. All bankers noted that it is essential that the contractor have impeccable past credit history as most business loans are personally guaranteed.

Collateral

A logger must have adequate asset value in his business (equipment, land, buildings, etc.) that would ensure qualifying for a loan. A minimum of 20-30% equity to be used as a down payment is recommended.

Wood supply agreements with paper mills or contracted logging service (CLS) agreements with large landowners are no longer viewed as key indicators of a contractor's financial stability. More than one banker noted that most contracts today have so many "outs" for the landowner or the mill that the contractor can rarely be assured that there will still be a market to deliver to in three to six months. While bankers like to see long-term relationships with mills and large landowners, it does not weigh heavy in the approval process.

On a positive note, bankers are seeing more contracts where the wood supply agreement is ensuring stability in price and quantity to be delivered over the course of the contract. More large landowners are offering multi-year contracts to "preferred suppliers" as a means of addressing some of the many uncertainties facing today's logger.

Conditions

These are the terms, rates and covenants – the details of financing. On average, for new equipment, the term is 5 years at about 6% interest. For used equipment, the term is 4 years.

Key Attributes for a Financially Healthy Logging Contractor

- ✓ Good past credit history
- ✓ Honest, hard-working individual
- ✓ Excellent relationships with landowners, managers and mills
- ✓ Enough assets to fall back on when things go wrong.
- ✓ Projected cash flow is sufficient to make timely payments

Diversification

Many loggers have realized that the uncertainties of the wood industry require one to develop other sources of income as a security measure. Fuel prices, workers compensation insurance, landownership changes, prolonged poor weather, mill closures and a host of other unpredictable variables have inspired many contractors to diversify into other businesses. Although logging might still be the major source of work, revenue

generated from "sideline" businesses helps balance out the shortfalls in logging cash flow. Some of these alternative opportunities include:

- Purchase land for timber supply and potential real estate investment. The traditional large contractors are buying land of their own or finding work on small, non-industrial landowners.

- Contract "dirt work" – utilizing company dump trucks, excavators, front-end loaders and dozers for road-building, bridge-building, maintenance and site work.

- Contract haul alternative products periodically (e.g. – Christmas trees in early winter, bark mulch during spring mud season. When logistics allow, some contractors are arranging backhauls of logs, pulp or chips. (Canadians have become experts at this whereby raw logs go north and finished dimension lumber comes south.)

- Process and deliver firewood – when hardwood pulp prices are down and home heating oil is on the rise, this alternative market can be worthwhile for some loggers.

- Loggers whose spouses run other successful businesses such as real estate, retail shops, or accounting services can provide supplemental family income that is offset by diminished logging profits.

Non-routine Cost-cutting Measures

During difficult times, successful contractors find ways to reduce costs across the entire operation. A question in the *2001 FRA Financial Health of the Logging Industry Survey* asked contractors to offer "non-routine" cost-cutting measures that they implemented during the past 12 months. Out of 235 logging and trucking contractors, respondents employed the following measures (based on percentage of the total).

63.0	Delayed logging equipment purchase	26.8	Replaced truck drivers with contract hauling
49.2	Spent more hours doing maintenance and repair work myself	24.6	Eliminated "special needs" equipment; i.e., wide tires, tracked machines, etc.
46.3	Used personal assets to support logging business	18.3	Reduced the wages or salary of workers or self
36.0	Postponed maintenance or repair expenses	17.7	Replaced skilled labor with equipment or less-well-trained people
33.1	Borrowed money to pay workers/keep business afloat	13.5	Other "non-routine" cost-cutting measures (see page 14)
31.3	Laid-off woods workers	9.3	I have not implemented any (non-routine) cost cutting measures
27.4	Reduced or dropped insurance coverage		

Purchasing "good, used" (no more than 20,000 hours) equipment continues to be a common practice for contractors wishing to cut costs. Care must be taken, however, to ensure that this equipment was well maintained by the previous owner. Records of the machine undergoing routine, scheduled maintenance is essential.

Non-routine cost-cutting measures are temporary, adaptive tactics and not necessarily meant to become part of an on-going business strategy. Nevertheless, all successful businesses, at some point during a depressed business cycle, must evaluate which measures will offer the most cost savings with the least amount of financial or operational disruption to the company.

In other cases, contractors have found work on other large landowners where the contract logging service (CLS) rates and management relations are better.

Pre-harvest Planning

Advance planning is a critical element to the success of all businesses. A properly planned timber harvest enhances the productivity and profitability of a logging contractor. In addition, the overall quality of the harvest is greatly improved. More recently, state and regional logger training programs have focused on the importance of pre-harvest planning as a means to accomplish a variety of goals.

Pre-harvesting planning activities include:

- ✓ Road and yard locations, skid trail layout, water crossing design and placement,
- ✓ Identification and marking riparian of buffer zones, unique or important wildlife habitat
- ✓ Harvest prescription – marking trees to cut or leave based on silvicultural goals, wood markets and landowner objectives.
- ✓ Hazard tree identification – marking those trees that pose a safety risk to the worker.

Pre-harvest planning offers the following benefits:

- ✓ Substantial reduction in potential water quality impacts.
- ✓ Reduction in "seat-of-the-cab decision making" that improves operator efficiency
- ✓ Greater protection of wildlife habitat concerns
- ✓ Better merchandizing of wood products

- ✓ Machine utilization is improved when harvest decisions are made in advance

Better Bookkeeping - Knowing & Managing One's Costs

- *Accounting Software* -- Excellent record keeping is an important part of running a successful business. Increasingly, sole proprietors and large integrated contractors alike are becoming more familiar with computer programs such as *QuickBooks* that help loggers better track their costs, pay invoices, plan and budget expenditures.

Here are a few tips offered by several successful logging contractors:

- ✓ Maintain good records and know what your worth – i.e. *net worth*!
- ✓ Keep overhead costs manageable and constantly reassess your financial situation.
- ✓ Buy needed spare parts in bulk via UPS – this saves time & considerable money.
- ✓ Operating below your costs can ultimately destroy your business.
- ✓ Distinguish the difference between cash flow and profit

- *Workers Compensation Insurance (WCI)* -- This continues to be one of the most expensive costs of many logging businesses. Having a strong safety record will help lower one's WCI costs and property and casualty insurance rates that historically are very high in the wood products business.

  The Professional Logging Contractors of Maine, in cooperation with Acadia Insurance, offers an attractive WCI package for members of its safety group. Based on the safety group's loss control performance, each member is eligible to receive an annual dividend. Currently, there are about 70 contractors participating in the PLC safety group. Contractors must have a minimum of $8,000 of non-WCI insurance premium (e.g. inland marine, general liability, etc.) and a minimum payroll of $45,000 to qualify. These requirements often mean that only mechanized contractors can be eligible.

Attracting & Retaining Skilled Labor

Contractors who are able to attract and retain skilled labor will always have an advantage. Many contractors today, however, are struggling to find enough labor. In areas where retail, restaurant or other less arduous manual labor jobs are available, often times with health benefits, young people are choosing those jobs rather than those in the forest products industry.

For now, contractors who can do the following have a good chance of retaining their employees.

- ✓ Pay a competitive wage for the area, (whether by the hour or piece rate)
- ✓ Treat their employees with respect
- ✓ Provide uniforms and uniform cleaning service
- ✓ Offer a company pickup truck for commuting
- ✓ Provide decent, good-working equipment and a safe work environment
- ✓ Provide on-the-job training; cover CLP, SFI, MFS and other training costs
- ✓ Pass on bonus or production incentives (When offered by the mill or landowners.)
- ✓ Holiday bonuses (when profits allow)

Good operators like to work on new or at least, well-maintained equipment. To the extent that a contractor is able to afford and provide such equipment, this effort can go a long way to keeping his employees satisfied.

One contractor contacted for this study emphasized that a good delimber operator is one of the most valuable employees on a logging job. This employee is often responsible for not only delimbing the wood but also for merchandising the wood for its highest value.

Mechanization & Operational Innovation

- *Lighter Trucks & Trailers* -- Significant advances in reducing tractor and trailer weights in the trucking industry have offered contractors opportunities to haul larger payloads and still comply with weight limits. *(FRA has documented these benefits in a 1999 Technical Release.)*

- *Cut-To-Length Processing Systems* -- These machines allow the logger to cut, process and sort by product species at the stump.

  Faced with rising WCI costs and a greater need for harvesting efficiency, more and more contractors are purchasing cut-to-length (CTL) systems. One operator manually producing around 50 cords per week can easily produce 250 cords weekly with a CTL system.

  Despite the price tag ($250,000 +), CTL system technology has improved greatly in the past few years making these machines more appealing to contractors and landowners in accomplishing a safe, productive and high quality timber harvest.

- *In-woods Delimbing* -- In recent years, an increasing number of landowners throughout Maine are requesting that tree limbs be left in the woods during harvesting rather than being piled along roadside yards. Under traditional harvesting operations, whole trees are skidded to the roadside and delimbed by a stroke delimber. The brush is usually carried back into the harvest area by grapple skidders and deposited in the skid trail where soft conditions exist. While this is an effective means for moving brush off the yard, landowners are seeking operators who can delimb in the woods for a variety of perceived benefits such as:

- Possible extension of the operating season; delimbing in woods allows greater use of brush in trails during wet conditions, thereby extending the fall and spring seasons.
- Roadside aesthetics is improved without the presence of brush piles
- Fire hazard from accumulated roadside debris is reduced
- Smaller log landings are possible - residual stand damage can be lessened

- *Multi-shift, split-shift and double-shifting* **--** There are more than a dozen northern Maine contractors that have switched from a "normal" 60-hour week to one of double shifting, split shifting or multi-shifting.

  The theory behind this workweek is to maximize machine productivity and provide opportunities for contractors to manage their work schedules that best suite their needs. Particularly in winter, when water quality issues are minimal, this work schedule allows contractors to maximize production when conditions are most favorable.

  Split-shifting or multi-shifting rotates operators every four hours on a different piece of equipment, thus promoting variety in the work day, preventing workers from tiring at one task and maintaining levels of production by keeping workers alert. It does make for a long day, however.

  Double-shifting is basically working day and night with two different crews. There are a number of pros and cons to this type of harvesting schedule that many industry observers are still attempting to measure. Safety, productivity and operating costs must all be carefully considered when instituting such a work schedule.

- *Central Tire Inflation* **--** In an effort to reduce transportation costs and improve efficiencies, the introduction of central tire inflation (CTI) technology has steadily gained favor with forest products truckers. There are only a few contractors in northern Maine currently applying this technology but the operational and economic benefits have been well documented throughout Canada.

  By regulating the air pressure of each tire from the convenience of the truck cab, the driver is able to maximize legal payloads and traction while reducing tire wear and road damage. There are several systems available on the market today that offer CTI technology.

  Rather than purchase a CTI system, some contractors have applied the less expensive method of utilizing the air gauges and regulating the tire pressure on air suspension trailers in order to maximize to their legal payload.

- *Automatic Grease Systems* -- One contractor noted that this system has more than paid for its costs ($2000 for a trailer) in reducing operator time to manually grease machines daily. The automatic system ensures periodic and adequate greasing where needed to reduce wear and tear. He also discovered that such a system promotes a better re-sale value when it comes time to replace the machine.

- *On-board Weight Scales* **--** This is another technology to assist truckers in maximizing their payloads by calculating the weight over each axle on the trailer. Forest products loads often vary in weight and a trucker may not always be able to accurately judge the legal payload before leaving the log yard. When properly installed and used, on-board weight scales allow the trucker to know in the woods whether the load is over or under weight before heading for the highway.

Business Relationships

Loggers must deal with a host of individuals in their business. Field foresters, procurement managers, landowners, equipment dealers, bankers, and insurance agents are only a few of the people that loggers must interact with on a fairly regular basis.

Fostering and maintaining good business relations is a must for any successful contractor. Not surprisingly, nearly all the bankers, equipment dealers and land managers interviewed for this study volunteered the importance of honesty, good reputation and attitude as key characteristics to a successful contactor

One positive trend that has occurred is the addition of licensed professional foresters to the payroll. Many contractors are realizing that a forester can complement their business by helping them secure stumpage, write management plans, and serve as a liaison with landowners and the various state agencies that regulate the logging industry.

Equipment Maintenance & Repair

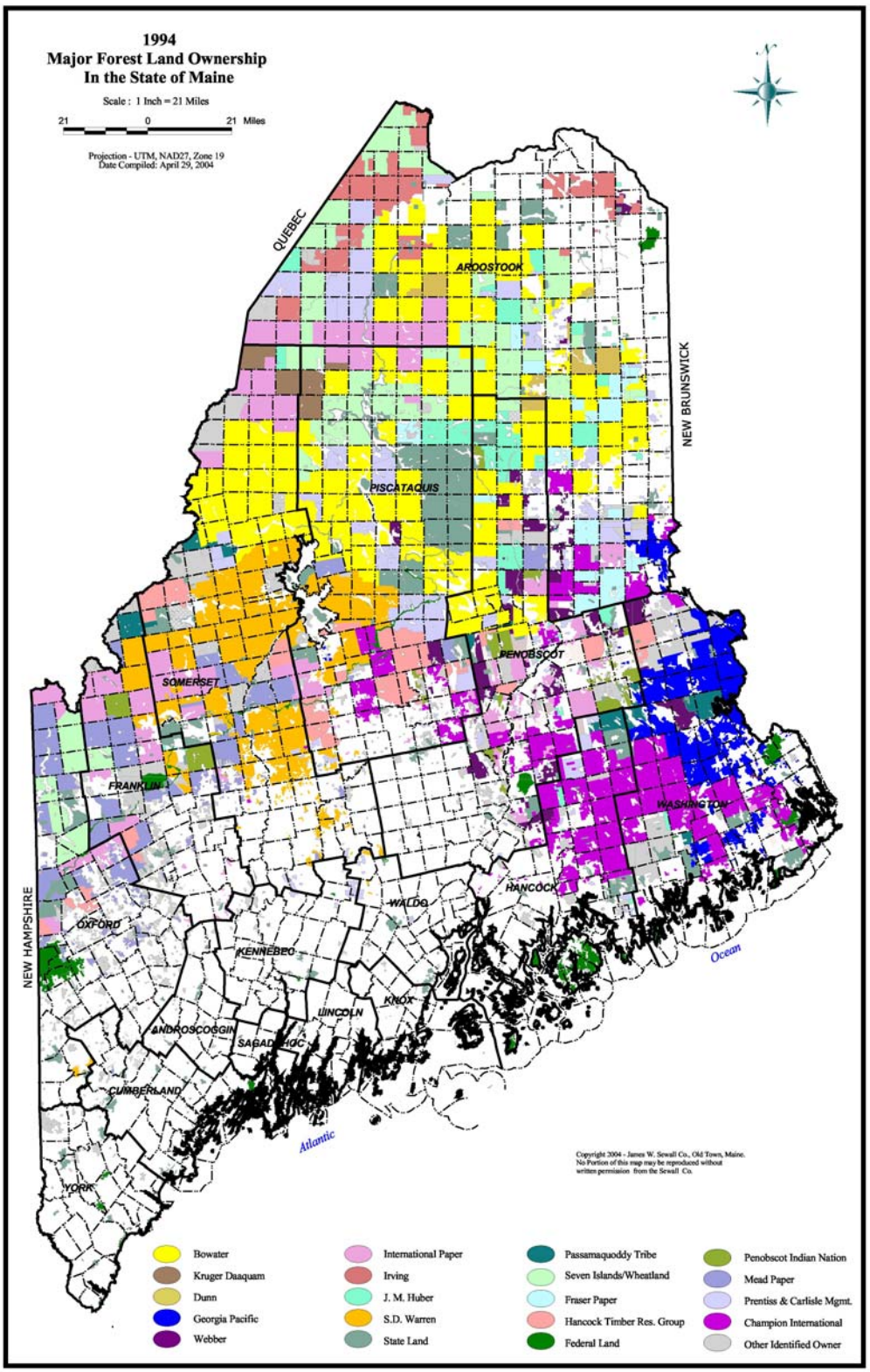
In the age of harvesting mechanization, many contractors can attest to the debilitating costs and loss of production associated with equipment downtime. Proper maintenance and repair of sophisticated and expensive harvesting machines is a critical part of any successful contractor.

The following ten maintenance strategies are time-tested principles offered by Hugh Hambly, a veteran diesel and automotive mechanic and respected industrial forestry consultant from New Brunswick, Canada.

10 Maintenance Strategies

1. Don't repair parts you can replace.
2. Make the right tools available to your people.
3. Set maintenance priorities.
4. Supervise for low downtime.
5. Gear up to produce - not to maintain.
6. Don't live with problems – modify or adapt.
7. Don't just repair something - improve it.
8. Buy, plan and control for low downtime.
9. Use the best technology available to you.
10. Do the repairs at the right place.

Appendix C


1994
Major Forest Land Ownership
In the State of Maine
Scale : 1 Inch = 21 Miles
21 0 21 Miles
Projection - UTM, NAD27, Zone 19
Date Compiled: April 29, 2004
QUEBEC
NEW BRUNSWICK
NEW HAMPSHIRE
AROOSTOOK
PISCATAQUIS
PENOBSCOT
SOMERSET
FRANKLIN
WASHINGTON
HANCOCK
WALDO
OXFORD
KENNEBEC
KNOX
LINCOLN
ANDROSCOGGIN
SAGADAHOC
CUMBERLAND
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Ocean
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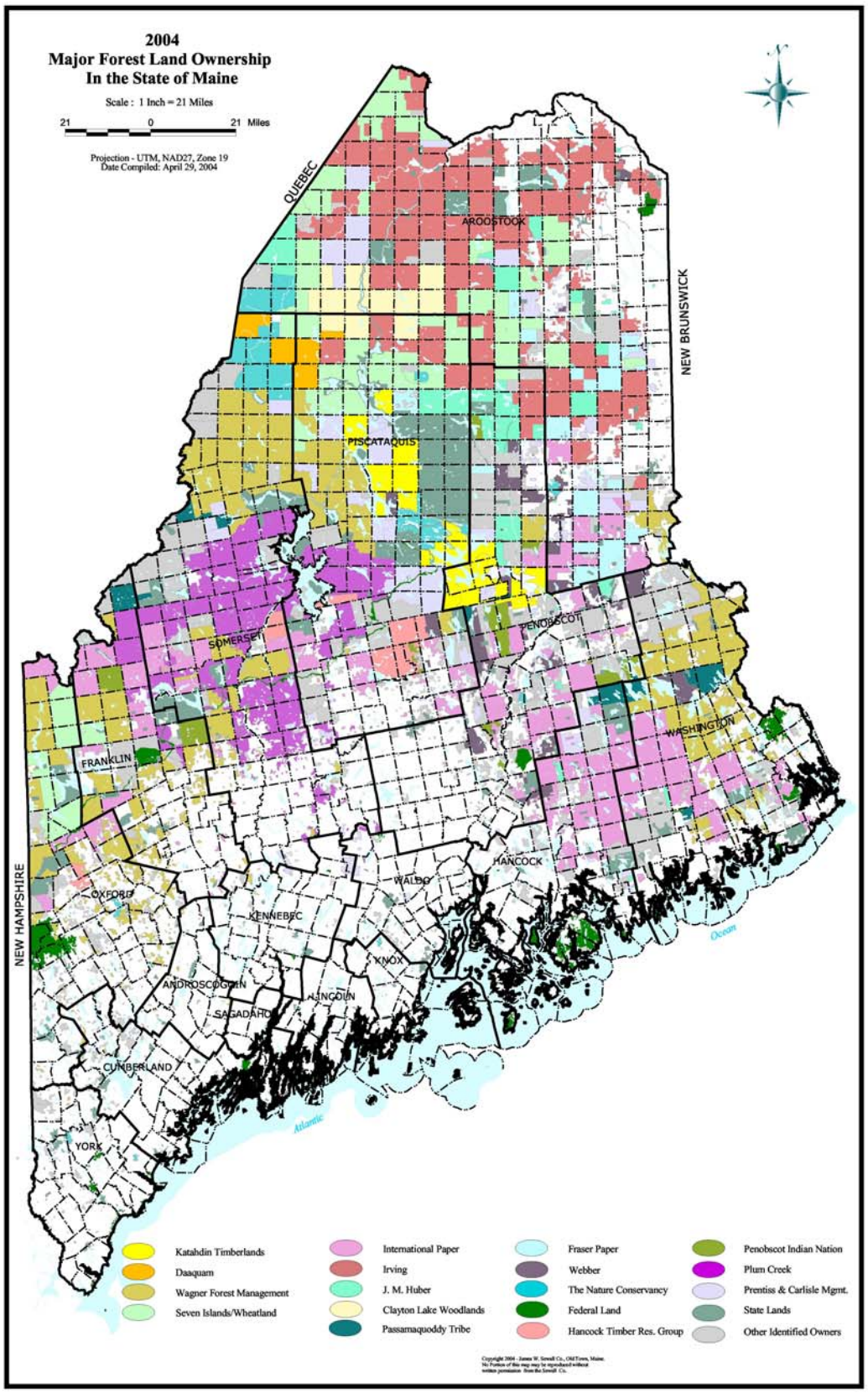
Kruger Daaquam
Dunn
Georgia Pacific
Webber
International Paper
Irving
J. M. Huber
S.D. Warren
State Land
Passamaquoddy Tribe
Seven Islands/Wheatland
Fraser Paper
Hancock Timber Res. Group
Federal Land
Penobscot Indian Nation
Mead Paper
Prentiss & Carlisle Mgmt.
Champion International
Other Identified Owner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CUMBERLAND
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Atlantic
Ocean
Katahdin Timberlands
Daaquam
Wagner Forest Management
Seven Islands/Wheatland
International Paper
Irving
J. M. Huber
Clayton Lake Woodlands
Passamaquoddy Tribe
Fraser Paper
Webber
The Nature Conservancy
Federal Land
Hancock Timber Res. Group
Penobscot Indian Nation
Plum Creek
Prentiss & Carlisle Mgmt.
State Lands
Other Identified Owners